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Professor Denise Bradley AC
Chair
Review of Australian Higher Education

Dear Denise,

This letter is in response to your letter of 4 April 2008, seeking short responses indicating the high level issues that we think should be considered in your review. B-HERT in the past has produced more detailed Position Papers on some of these issues.

The purpose of the Business/Higher Education Round Table (B-HERT) is to pursue initiatives that will advance the goals and improve the performance of both business and higher education for the benefit of Australian society. B-HERT is the only body where leaders of Australia's business, research, professional and academic communities come together to address important issues of common concern, to improve the interaction between Australian business and higher education institutions, and to help guide the future directions of higher education.

In pursuing this mission BHERT aims to influence public opinion and government policy on selected issues of importance. B-HERT believes that a prerequisite for a more prosperous and equitable society in Australia is a more highly-educated community. In material terms it fosters economic growth and improved living standards - through improved productivity and competitiveness with other countries. In terms of equity, individual Australians should have the opportunity to realise their full social, cultural, political and economic potential.

Membership of B-HERT comprises Australian universities, corporations, professional associations, the major public research organisations (Commonwealth Scientific and Industrial Research Organisation and Australian Nuclear Science and Technology Organisation).

B-HERT pursues a number of activities through its Working Groups and active alliances with relevant organisations both domestically and internationally. It publishes a regular newsletter (B-HERT NEWS), reporting on its activities and current issues of concern relevant to its Mission.

B-HERT emphasises education and innovation as the key components of the next round of Australia's broad productivity improvement and sees higher education as fundamental to international competitiveness.

- 1 B-HERT supports a significant Commonwealth government funding injection, funding indexation, more targeted HECS at levels somewhat lower than now prevails, a significant increase in philanthropy, reduction in the reliance on both overseas and local full-fee

paying students, and income derived from sensible commercialising of intellectual property..

- 2 B-HERT recommends that the Government set itself the target of reaching 1% of GDP no later than 2020 and preferably by 2015. This means that Government grants would have to increase by some 60% in the next 12 years. Government commitment to higher education income has fallen from 60% of the totals in 1996 to 40% in 2006 and this is now one of the lowest percentages in the OECD.
- 3 The level of investment by the federal government in universities has fallen by about 30% per student in the past decade. Only an average of 40% of the income of Australia's public universities now comes from government. At the same time academic staff/student ratios have worsened from 1:14 to 1:20. In the US for example at Washington University in St. Louis they are 1:2, at University of Michigan 1:9, at state universities such as Illinois, Massachusetts, and Minnesota 1:14, while top-line institutions like , Harvard, Stanford, and MIT are 1:4 or 5, in India at the Indian Institute of Technology 1:9, in China at Sichuan University (60,000students) 1:10. This is a fundamental challenge which underpins the whole issue of quality teaching and learning.
- 4 B-HERT sees philanthropy as an essential ingredient in the long-term development of Australia's universities. B-HERT is firmly of the view that in Australia the problem is as much nurturing a culture of asking as it is a culture of giving.
- 5 CRC's potentially could make a more significant contribution to Australia's economy, business collaboration and development of intellectual property, all positive. B-HERT supports the conduct of regular reviews and recommends long term funding certainty. B-HERT believes that the CRC's should have rigorous commercial assessment processes, but believes there should be a place for some CRC's to have all or some of their mission to be directed at the public good.
- 6 There is a need in Australia for far more effective mechanisms for knowledge transfer between universities and business, particularly SME's.
- 7 B-HERT considers that funding for Community Engagement activities should be provided for two main purposes:

Institutional capacity building – to establish 'interface' arrangements and develop skills that focus firstly on knowledge transfer and translation between universities and industry and community in priority areas.
Specific projects and initiatives – to support 'one-off' ventures and activities that address a specific need and opportunity and have an identifiable and measurable outcome.

Community Engagement funding should not be seen to duplicate or replace competitive funding for cooperative and collaborative research provided by granting agencies.
- 8 B-HERT believes students should have access to both publicly funded and privately funded institutions and should be supported by government in whatever institution and course to which they gain access.
- 9 B-HERT supports the urgent need to improve graduation rates for indigenous students, and professional development and capacity building for indigenous staff, by providing appropriate incentives for institutions. It also supports increased incentives and pastoral support for indigenous students.

- 10 B-HERT supports encouragement of students into particular courses and universities with lower HECS replaced by higher government funding.
- 11 Unless a funding model is implemented which does away with up-front fees and thereby removes the contentious issue of full-fee paying domestic students, B-HERT supports universities being able to enrol domestic full-fee paying students as they provide additional funding for the sector and can provide the opportunity for an additional student to obtain a HECS place, and supports the removal of the cap on the number of full-fee degree students.
- 12 B-HERT favours a mixture of public and private (local and overseas) institutions with diverse Government, student, private sector and philanthropic funding and investment
- 13 B-HERT supports the view of “regional” universities that consideration be given to reducing HECS rates for full-time, undergraduate students who attend universities which are headquartered in regional Australia as a mechanism for redressing the net migration flow of people, especially younger Australians, from regional and rural areas to the capital cities.
- 14 B-HERT supports the move to institutional mission diversity with funding based on institutional plans on a minimum four year cycle.
- 15 Australia’s economic future is dependent upon the effective management of globally competitive and innovative enterprises. Human capital is a key element.

Engineers are crucial to the nation’s future. Australia graduates about 5000 engineers a year, but first year engineering enrolments are decreasing. Between 2001 and 2005 the number of Australians commencing degrees in engineering fell by more than 8 per cent. At the current rate Australia will (in terms of graduates per million of population) fall from fifth last in the OECD to third last in the next two years. We will be graduating 16 per cent less than the number awarded in 1998. Mexico and Turkey will have overtaken us.

In 2003 China awarded 351,537 bachelor degrees in engineering (cf. US National Science Foundation Reports). But the really significant aspect is that this is three times the numbers who were graduating 15 years ago. Forty per cent of Chinese graduates are engineering graduates. In Australia only 10% of graduates are in engineering- OECD average 14%.

During the years spent studying at university there is the greatest opportunity to not only impart technical skills but also to influence, shape, and refine a student’s overall behavioural competencies.

An allied issue is that of the quality and performance outcomes of undergraduate students. The combination of high student /staff ratios, less funding per student, high international student percentages, research emphasis at the expense of teaching, and too much part-time student work all contribute to less course time, less laboratory activity, less effective tutorials with consequent risk to outcome quality and performance standards.

- 16 There needs to be much greater investment in research infrastructure at Australian universities. In too many instances our laboratories are far from world standard and in some instances incredibly dated and inadequate. The Higher Education Endowment Fund (HEEF) will provide only a fraction of the funds needed for capital works. (It is less than 20% of the endowment of Harvard University). It needs to be at least \$20 billion. Then it may have some real impact.

- 17 B-HERT regards quality as a fundamental issue and supports quality assurance mechanisms aimed at giving confidence that Australian courses meet Australia's needs and are internationally competitive. A market which provides student choice is an important element of driving quality
- 18 Many of the major challenges facing us require interdisciplinary approaches and existing barriers need to be breached to enable more effective collaboration amongst all stakeholders- between the public and private sectors, between research organisations and research beneficiaries, between business and universities, and between governments.
- 19 Much of the research in Australia is supply driven. We create solutions looking for a problem (in terms of commercial outcomes). We constantly discuss the "commercialisation of IP out of universities". Innovative companies and innovative individuals need more encouragement and support. In Australia, SME's deserve and need special attention in this respect. For example, the patent system as it applies to SME's should be simplified and made less costly.

Communities Engagement has a broad vista that extends beyond business and economic aspects. There already exists in universities varying levels of engagement through teaching and research. Universities already engage with and add value in partnership with industry, and can demonstrate significant contributions to regional capacity building. The commercialisation of the Intellectual Property (IP) owned by universities is but one example of engagement through research. A priority in this commercialisation process should be the creation and nurturing of Australian based businesses.

Engagement should also have a two-way orientation, with institutions outside higher education committed to interactions with universities in a similar way. This two-way relationship is one in which the university forms partnerships with communities that yield mutually beneficial outcomes such as:

- Productive research outcomes that are, among other things, socially robust;
- Regional economic growth;
- Addressing social and environmental issues in the community;
- Linking the community and the world (boosting local/global connectivity);
- Social capital development;
- Progress towards a region's sustainable development;
- Human capital development;
- Development of corporate and private citizenship attributes;
- Driving social change including helping to solve some social issues especially in areas of disadvantage; and
- Development of the cultural and intellectual fabric of the community.

These relationships could be significant drivers in creating a much more demand driven research and innovation culture.

- 20 We need new ways for business to engage with the higher education sector and with government for mutual growth and development at individual, community, regional, state and national levels. The business drivers are the need for: "fit for purpose" graduates; career changes and up-skilling of older citizens; linkage with vocational education and training; research and development and innovation and creativity collaboration; and for collaboration in solving many economic, environmental and societal issues. Current collaboration models are inadequate especially at the strategic level. The Business and Industry Higher Education Consultative Committee (BIHECC) has not been an effective

mechanism. To have collaboration which produces results, there are a number of aspects which need to be canvassed.

- How to expand the range of ways business and higher education and training engage each other to enhance capacity.
- The need to develop new strategic partnerships and forms of involvement including more effective knowledge exchange.
- The possible need for other forms of university governance.
- Staff and students within universities need to be encouraged in their efforts to engage with industry, and an increased acceptance and rewarding of such efforts.
- Establish more large-scale research centres through research partnerships (US-private funding; Irish and Finnish- targeted state funding).
- Better commercialisation.
- Enhanced R&D allowances for university/business linkages.
- Dialogue to ensure the right number of graduates and with an education which means they are “fit for purpose” for industry, and for broader economic, social and environmental goals. The current shortages, both in numbers and capabilities, of engineers and scientists, and of doctors, is a demonstration that the current model is not working. In the long term, 457 visas and attracting skilled people from other less developed and more needy societies, is not the answer.

There is enormous potential for industry and business to derive increased value from links with universities, and for universities similarly to benefit from increased clarity on the needs and motivations of its relevant stakeholders. It is often difficult to get industry to engage and the right mechanisms and operating models are required. Elevating the importance of this collaboration at the political level is an indispensable component.

The current review of the National Innovation System and this review are opportunities to remove some of the barriers, reinforce the positives, and at the same time recognise industry challenges and changes needed to increase productivity and improve competitiveness.



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