



*Professor Ashley Goldsworthy
AO OBE FTSE FCIE
Executive Director*

30 July 2008

Secretariat,
Review of Australian Higher Education

Submission to Review Panel

Introduction

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 B-HERT 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.

Business/Higher Education Round Table Ltd
ACN 050 207 942 ABN 80 050 207 942
24 Brunswick Street, Fitzroy Vic 3065
Ph: 61 3 9419 8068 Fax: 61 3 9419 8276 Email: bhert@bhert.com Website: www.bhert.com

Outcomes Orientation

Before addressing the specific questions raised in the Discussion Paper, we want to emphasise that the Review needs to concentrate on outcomes, in terms of specification, measurement and quality. Too much of the debate in this area is focussed on inputs. For example, improving student/staff ratios is an important issue but of itself does not necessarily improve the quality of graduates (a necessary but not sufficient condition). Nor are they measures of performance. Just providing more money may not necessarily improve the quality of graduates. Nor is it a measure of performance.

They may well be necessary pre-requisites, but the Review needs to put them in a context of Quality of Outcomes. Business particularly is anxious to avoid a dumbing down of the Australian higher education system.

We are not proposing more measures for an over regulated sector.. We are proposing more appropriate measures. The business community (part of B-HERT's constituency) is frequently critical of the lack of outcome oriented performance indicators. This view is aggravated by the plethora of input oriented indicators imposed on universities, which tell nothing about performance and in fact are often misused e.g., staff/student ratios. This needs to be remedied.

As a basis for obtaining the broad commitment required for change, it is important to provide the external communities/stakeholders (employers, students, parents, the general community etc.) with a better understanding and appreciation of the current higher education sector's contribution to society and what it could be if the review recommendations are implemented.

It would be beneficial to provide the higher education sector itself with some measurements of performance which may help to improve the sector (on the assumption everything can be improved). It is very hard to know if things are improving (or deteriorating) if there is no benchmark or measurement. Business (as does politics) lives within a world where constant, public, and outcome measures of its performance are a part of life.

As a corollary to specifying appropriate KPI's there should also be appropriate benchmarks or targets set in consultation with higher education, business and other stakeholders. It is interesting to note that in the recently released UK paper, *Higher Education at Work: High Skills, High Value* (c.f. p.25 of the Discussion Paper) the Government has committed to a number of targets, in some instances with intermediate milestones.

In this context B-HERT has published THE FACTS (www.bhert.com) which collates and presents some key measurements with which very few people are familiar. Bureaucratic overkill results in too many useless statistics being collected which bury the few useful ones. Data overload never translates into information let alone knowledge.

The value that will be added will be a better appreciation of the value of the investment in higher education by highlighting some of the outcomes and benefits to the community. Such an approach would also warrant greater freedom for universities from government supervision and control to pursue their own missions in achieving such outcomes.

This issue is further discussed below in responding to Questions 12-14.

Attachment I is a suggested list of outcome oriented KPI's for the higher education sector.

1.2 The functions of higher education in modern Australia

This introduction gives a very inadequate outline of the characteristics of higher education in Australia. It pays insufficient attention to the increasing importance of the role played by universities in the community in general. It fails to recognise the significant commitment which will be required by all stakeholders to effect the changes that are needed. Without this commitment the process of change will falter. Insufficient attention to the process of change, as opposed to the changes themselves, will negate any benefits which might otherwise have flowed.

2 The strategic context

Expenditure by Government on higher education is not an outlay to be minimised; it is an investment in Australia's future which must be optimised.

This section, in presenting a proliferation of well known statistics, fails to adequately identify the dramatic and radical changes that will need to be made to achieve and maintain a world-class tertiary education system.

Dynamic changes in structures, processes, opportunities, relationships, and mindsets will need to be the drivers of change. The status quo is a very inappropriate indicator of the future we need in higher education in Australia.

The future will require much more active and committed involvement and participation by all stakeholders, particularly business and industry. The failure of the business community in general to actively engage in meaningful dialogue with the higher education sector in this country is inexcusable. As a result there is a significant gap in **mutual** understanding between the sectors.

This section does not describe "The strategic context". It describes an unsatisfactory present. The future requires much more integration of the higher education sector into the community in general.

It fails to adequately recognise the sector's contribution to Australia's GDP. Some years ago (2000) B-HERT took the initiative to undertake a study to quantify this. In his Foreword to the publication the then Minister for Education, Training and Youth Affairs (Dr. David Kemp) said, "The BHERT Report – *Of Dollars and Cents: Valuing the Economic Contribution of Universities to the Australian Economy* – is a most welcome contribution to our knowledge, and to public debate, on Australia's higher education sector. As such it provides a foundation from which to consider the crucial issues of public and private funding of higher education. The Report concludes that the impact of the Australian university sector to the economy is of the order of \$22 billion per year. Interestingly, less than half comes from direct expenditure of universities. The majority comes from increases in the value of human capital (over \$9 billion) and spillover effects from research (over \$2 billion)." The contribution today would be much greater. The study should be updated.

3.1 Meeting labour market and industry needs-Questions 2-7.

There needs to be 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. 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. This could include partnerships with business an alternative funding path to direct funding of universities, and access to leading edge and specialised expertise within the universities.
- 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 vital importance of lifelong learning is widely accepted and it is seen as one of the critical elements in building the skills base for the knowledge industries of tomorrow. It will force dramatic changes to education, particularly post-compulsory education, and to business.

B-HERT’s Position Paper #4 entitled *The Critical Importance of Lifelong Learning* (available on www.bhert.com) has a range of relevant and appropriate policy recommendations.

3.2 Opportunities to participate in higher education- Questions 8-11

B-HERT supports the urgent need to improve graduation rates for indigenous students and students from low socio-economic backgrounds. It supports professional development and capacity building for indigenous staff, by providing appropriate incentives for institutions. It also supports increased incentives, consultation mechanisms and pastoral support for indigenous and disadvantaged students. To achieve critical mass and share limited resources,

it may be appropriate to share such consultation with the VET sector and even with the schools.

We need to more effectively integrate indigenous policies into all educational institutions (primary, secondary, and tertiary) together with adequate pastoral support, to provide widespread opportunities for indigenous peoples. This should include widespread learning about, access to and research in indigenous culture and history.

There has been a welcome change from “bolt on” indigenous programs in schools to getting all schools competent in securing good outcomes for indigenous students. The MCEETYA AESOC Officials Working Party Report “*Australian Directions in Indigenous Education 2005-2008*” is mainly focussed on schools and is a useful reference in this context.

There is an even more pressing need to improve the overall year 12 completion rates and post-compulsory qualification levels.

3.3 The student experience of higher education- Questions 12-14

The basic element in these questions is highlighted by the fact that “quality” appears in each of them. Another common element is “measuring”.

The issue of quality of outcomes and its measurement is central to B-HERT’s proposals. Appendix I is a suggested list of appropriate outcome-oriented measures. Some of these suggested measures may, at first blush, appear somewhat arcane.

It is interesting, therefore, that Universities UK, the British counterpart of Universities Australia, recommended that the following elements “be considered in devising a broader conception of the benefits of tertiary education”:

- higher levels of education have a positive impact on the readiness to learn of successive generations;
- a clear negative correlation between educational level and criminal conviction.
- higher education encourages a longer time perspective, essential to assessing the significance and recognising the origins of an issue or problem.
- overall educational level is positively correlated with cultural tolerance and understanding.
- better educated people make a more active and effective contribution to the development of the voluntary sector.
- the well educated tend to be more flexible and innovative in response to the unexpected, better able to cope with problems in family and community, less dependent upon services supplied by the state

In the VET Sector the KPI’s include:

- Employer engagement and satisfaction. The level of employer adoption of, and satisfaction with, vocational education and training in meeting the skill needs of their workforce. Measures *outcomes for employers* (awareness of and satisfaction with VET).
- Outcomes for Indigenous Australians. The extent to which Indigenous Australians engage with and achieve positive outcomes from vocational education and training. Measures *outcomes for Indigenous people*.
- Community awareness and engagement. The level of community awareness and engagement with vocational education and training to assist with economic and

social development. Measures *outcomes for communities* (awareness of and benefits from VET).

One aspect of student experience which is changing dramatically almost on a daily basis is the all pervading influence of information technology. This is having a significant impact on the nature of the student experience. It is encouraging new educational pedagogies, transforming libraries and research practices, diluting face-to-face contact (both with lecturers and fellow students), requiring new approaches to learning, facilitating plagiarism (even at the highest levels), undermining intellectual property, and raising questions about content credibility.

3.4 Connecting with other education and training sectors- Questions 15-18

B-HERT sees this as a very important issue and in recent years has addressed this matter by way of conferences, publications, etc (e.g. Post Compulsory Education Symposium- *Bridging the Gap*, in Melbourne, May, 2005- cf. www.bhert.com)

One of the central issues is the need for more effective integration between providers in the post-compulsory education sector. One of the problems Australia faces in many arenas is the lack of critical mass. In such circumstances drawing lines in the sand to separate activities is often counterproductive. In the education arena we too often talk of “higher education” or “vocational education and training” rather than “post-secondary” or “post-compulsory education”. There are many issues on which universities and VET warrant separate consideration. But at a time when we are urging collaboration rather than competition, when problems in regional, rural and remote areas need to be addressed, there is an even greater need to focus on the broader area of post-compulsory education.

There needs to be a better integration or linking of programmes, better articulation, better sharing of resources (including money), better servicing of regional, rural and remote areas, broader collaboration, a better skilled workforce, and if we saw the pool of resources and the challenges as the broader tapestry of post-compulsory education we would not be as constrained in our solutions or our thinking. For example, in some parts of the United States “compacts” are being used involving structured sharing of governance and resources between a group of universities, VET institutes and schools.

There needs to be a radical change in attitude and thinking to break out of the box and see post-compulsory education as an arena which warrants more coherent consideration.

Traditional roles of the sectors are blurring as the post compulsory education sector responds to the needs of the new economy and rapidly changing labour markets. We are managing the drift between the sectors without a guiding policy framework. Conflicting policy and priority settings between the Commonwealth and the states create problems. The Commonwealth and the states need to develop a nationally consistent post-compulsory education policy framework that clarifies the role of the Commonwealth and the states. For example, the states have a very significant interest in the output and outcomes from universities but have very limited ability to participate in the strategies and inputs and hence in the necessary collaboration between HE, VET and the schools sectors. This is not to advocate an additional layer of bureaucracy.

Industry has a critical leadership role and formal responsibilities in post-compulsory education. There is a need to reconcile the deregulated demand driven market with the broader role of the public system of post-compulsory education in ensuring an adequate skill base for the future.

Effective responses to local and regional development needs require local and regional coordination of post-compulsory education and training provision

Industry Skills Councils could usefully be given a broader role to facilitate stronger coordination across the VET and higher education sectors in forecasting future skills needs.

With respect to regional tertiary education, 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.

In recent years B-HERT has organised a series of Regional Engagement Seminars in Bendigo, Sunshine Coast, Albury-Wodonga, Whyalla, Shepparton, Newcastle, and Parramatta. These fora brought together participants not just from universities, but from all post-secondary providers both public and private, from local government, regional businesses and regional development state agencies with the objective of promoting the benefits of more effective engagement between all sectors in developing the regions.

B-HERT NEWS #21 (April 2005) (www.bhert.com.au) outlines a number of case studies of how universities interact with their local and regional communities for mutual benefit.

As a result of these fora it became clear that-

- There needs to be greater recognition of the regional communities’ need for access to high quality post-compulsory education. Ways have to be found to make regional delivery economically viable combined with recognition that critical mass for some disciplines mandate fewer and more centralised delivery.
- There needs to be more explicit support for collaborative initiatives between business/industry, the community and post-compulsory education providers which provide a socio-economic benefit to the region.
- There must be clearer identification and communication of the benefits for increased engagement between business/industry, the community and post-compulsory education in regions.
- There must be increased awareness of the pivotal role the relationship between business/industry and post-compulsory education plays in the retention of youth in regional areas and the importance of career pathways.
- More involvement by education providers in community discussions would lead to better outcomes.

What is clear is that many of the regional areas are being proactive in their pursuit of a viable future. Integrated into this is the critical role post-compulsory education plays in the development of their local region.

These fora are useful to the ongoing development of linkages between regional business/industry and post-compulsory education. Such linkages will invariably lead to appropriate skill enhancement of regional youth, greater entrepreneurial endeavour, accelerated commercial awareness and increased economic activity in the regions.

3.5 Higher education’s role in the national innovation system-Questions 19-21

The first point which needs to be made is that the three questions posed leave vast areas, which are relevant to the role of universities in the innovation system, untapped. They completely fail to address the topic.

B-HERT emphasises education and innovation as the key components of the next round of Australia's broad productivity improvement and fundamental to international competitiveness. A recent Productivity Commission Report indicates a potential impact of increased education and training of 0.7% in the workforce participation rate and 1.2% p.a. in labour productivity. The creation and commercialisation of new knowledge is a crucial source of dynamic improvements in productivity. We need to substantially enhance the level of innovation in Australia.

Many international surveys suggest that by world standards, Australia's university sector is not driving innovation as well as in many competitor nations. In the Jiao Tong 2007 academic ranking of world universities by broad subject fields no Australian university appeared in the top 20. In the top 100 Australia had one in Natural Sciences and Mathematics; four in Engineering/Technology and Computer Science; four in Life and Agricultural Sciences; three in Clinical Medicine and Pharmacy; and three in Social Sciences, a total of 15. Funding needs to be changed to improve this outcome

Likewise, Australia's research output, measured by number of patent families per thousand capita population, is very low by international standards.

There is a need to get away from the linear 'knowledge-push start-up company' fixation, which has pervaded so much policy making in the past. Anything that reduces risk or increases potential rewards will see more businesses innovate.

There are a number of critical issues which need to be addressed with respect to enhancing our innovation system and hopefully improving our innovation performance.

1 A critical shortage of engineering, science, and mathematics graduates.

Australia's economic future is dependent upon the effective management of globally competitive and innovative enterprises. Human capital is a key element.

Engineers, be they civil, electrical, mechanical, chemical, electronic, information technology, mining, metallurgical, hydraulic, environmental, biomedical, or any other branch of the science, play an integral and critical role in every sector of business and industry, from basic R&D to final outcome. They 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%.** Close collaboration will be required between the sector, industry and accrediting bodies to eliminate the shortage and to develop mechanisms for sustainability.

2 The need to improve the quality of teaching of mathematics and science in our schools.

There is ample evidence of the decline in numbers of good quality mathematics and science teachers in Australian secondary schools. This is a contributing factor to the issue in Item 1.

Action needs to be taken to incentivise teachers by way of tangible rewards and recognition to undertake appropriate or additional studies to redress this problem, and also to remain teaching rather than taking higher paid administrative positions.

3 Stronger support for the vital role of Australian research in innovation.

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 Education Investment Fund (EIF) is an \$11 billion fund announced in the 2008-09 Budget. The EIF will include \$5 billion from the 2007-08 and 2008-09 Budget surpluses, plus \$6 billion from absorbing the Higher Education Endowment Fund.

The key priorities of the EIF will be capital expenditure and renewal and refurbishment in universities and vocational institutions, as well as in research facilities and major research institutions.

EIF, which is to service vocational institutions and major research institutions as well as universities, will provide only a fraction of the funds needed for capital works. (It is approximately one-third of the endowment of Harvard University). It needs to be at least \$20 billion. Then it may have some real impact.

4 The need to increase our investment in R& D.

Investment by business and industry in R&D in Australia is close to the lowest in the OECD. The total investment (government and private) in R&D is low by international standards, at about 1.8% of GDP and stagnant, compared with 4% in Israel, 3.9% in Sweden, close to 3% in the US, and over 2% and rising in Canada and Japan. The Lisbon declaration also committed the EU to a target of 3% of GDP. There should be no doubt as to how difficult it is to achieve such targets.

The low level of investment by the private sector, less than 1% in Australia compared with say 3% in Sweden, is of particular concern. For a nation that should be globally competitive this is a major failing. It is interesting to note that in Australia we have around six researchers per thousand workers and in Sweden they have twice that number (in Finland they have nearly three times the Australian number).

5 The need to develop more inclusive interdisciplinary approaches to research and collaboration.

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.

6 We need to create more of a demand driven research culture.

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.

There has been growing attention in recent times to Community Engagement (the so-called *Third Mission* of universities) and the *idea of engagement* between universities and society. It

has the potential to help create a more demand driven research culture. This is discussed further in 3.7 below.

7 Government programs need to be more targeted and focussed.

The number and complexity of government programs designed to support innovation is a veritable jungle, impenetrable by all but the most determined and experienced. The sheer difficulty of accessing programs deters thousands of potential innovators- companies and individuals. R&D Tax Concessions need to be reviewed to make them more conducive to pursue research. The Australian tax concession was introduced at 150%. Immediately, and for a number of years thereafter, business R&D grew. Since the introduction of the 150% tax concession, successive governments have significantly diminished its value, and in doing so have greatly reduced the incentive to undertake R&D: by lowering of the corporate tax rate; reducing the concession to 125%; introducing dividend imputation; and increasing compliance costs. To be attractive the rate needs to be at least 200% and at that level specifically targeted to human resources.

In the arena of taxation, ESOP's (Employee Share Option Plans) have been identified as an effective way of rewarding employees, but the Australian taxation system is not conducive to this.

There needs to be much more focus on business, social and environmental opportunities and problems rather than unfocussed R&D or commercialisation of existing IP. Also in the spectrum of R&D there needs to be much more focus on commercialisation rather than on R&D itself. Government grants and concessions in Australia tend to focus on innovation and R&D and neglect commercialisation, which is the most costly and difficult phase of the innovation spectrum. Australia is good at inventing, but poor at turning the ideas into commercial products and services.

The business community saw the decision in the recent budget to discontinue the Commercial Ready Grant program as a poor and ill-judged decision.

Government procurement programs should support Australian innovation. The enormous funds sitting in superannuation could be imaginatively used to support innovation.

8 Extending our horizon beyond the physical sciences

Service industries are an important and growing sector of our economy. In a similar vein the humanities and social sciences are often neglected when we speak of innovation. We need to adopt a broader view of the potential and application of innovation.

9 A focus on emerging areas of national importance to Australia

It would seem to make sense, in an environment of scarce and limited resources, to focus our attention on challenges of national importance, such as water, the ecology, an ageing population, energy, and infrastructure. These priorities would need to be reviewed from time to time.

10 The importance of measurement.

An aspect often overlooked is the importance of knowing how successful or otherwise various initiatives have been. There needs to be, therefore, metrics put in place to help policy makers gauge the worth or otherwise of programs and so on.

3.6 Australia's higher education sector in the international arena- Questions 22-24

Australia's success to date in the international market could well be a false dawn or an Indian summer. The high proportion of overseas students is welcome but on the other hand is a funding source which could quickly disappear. Some of our best markets are themselves investing huge resources into higher education, and there is every likelihood the flow of overseas students could substantially reduce. Universities have become very reliant (perhaps over reliant) on fees from overseas students and we have seen very recently significant impacts on some Australian universities from a sudden drop in overseas enrolments.

It is encouraging, for a number of reasons, to see a trend in universities of placing a cap on the number of international students, although in some instances these caps are above existing levels of enrolments.

We are also likely to see a growing reverse trend of Australian students going overseas to study, encouraged by the global economy and the high quality of emerging higher education institutions in countries such as China, India, South East Asia and the Arab world. B-HERT supports this trend.

3.7 Higher education's contribution to Australia's economic, social and cultural capital- Questions 25-27

There is no doubt that knowledge transfer and community engagement are not only legitimate and appropriate roles for higher education institutions; they are central to their role. If only to secure political and community commitment to the cost and impact of change, this issue should be raised earlier in the review and given increased importance.

Knowledge Transfer

Knowledge transfer is a central component in the effective dissemination and diffusion of knowledge. There are significant gaps in Australia in this process- gaps on which B-HERT has been urging action for years.

For some years B-HERT has been proposing the establishment of a Knowledge Exchange Network (KEN) which would help to address current failings in existing systems. There is a need in Australia for far more effective mechanisms for knowledge transfer between universities and business, particularly SME's.

What is a Knowledge Exchange Network?

A knowledge exchange network (KEN) is a structured intermediary mechanism for users to locate, exchange and acquire knowledge in a systematic way, with a view to development of new products, processes and services. It may be virtual/electronic or actual/physical communities of interest.

Best practice

Studies have shown that the most effective networks, in terms of the transfer of knowledge from the creators of knowledge (research providers) to industry users are those that are sponsored and supported through industry associations.

The mining industry has demonstrated the benefits of knowledge exchange and collaboration through the Australian Minerals Industry Research Association (AMIRA) and the wine industry has demonstrated similar benefits through a knowledge cluster that creates and shares product related knowledge through the Wine Research Institute.

The human interface

Research indicates that Knowledge Exchange Networks based on the transfer of knowledge through electronic web-based technologies have limited impact without the involvement of people and organisations performing the roles of facilitator and/or broker.

At the first meeting of the Business/Industry/Higher Education Collaboration Council (BIHECC) in August 2004, B-HERT was responsible for BIHECC accepting Knowledge Transfer as a major agenda item to be addressed. In the following three years **four** reports were commissioned by the Minister, DEST and BIHECC. The most recent one was completed in February 2007.

One of the principal findings of **all** of these reports is a lack of a “single entry” point into the higher education and research systems to identify sources of relevant knowledge combined with a lack of intermediary mechanisms to link non-academic users with sources of knowledge and expertise within the research and higher education systems (particularly relevant to SME’s).

The most recent report “*The Business Case for Knowledge Transfer*” by Insight Economics (February 2007) identifies that a supply side barrier to effective knowledge transfer is the “knowledge transfer skills of existing staff” matched by a demand side barrier of “Lack of intermediary mechanisms between academic research and end users”.

This is precisely what B-HERT has been saying for years and proposing KEN as a solution.

The Report identifies one of the two root problems as being “inadequate and ineffective interaction between SMEs and higher education institutions”.

One of the major recommendations of the above Report is, “Use of a low application complexity grant scheme for funding industry associations to conduct networking and information events.”

KEN would satisfy that recommendation.

The 2006 report by PhillipsKPA recommends, to overcome market failure and instigate demand from users, support for the development of national information resources and intermediary mechanisms that enable business and community, especially the SME sector, to locate sources and sites of knowledge within the university system.

This is precisely what KEN would do.

The 2005 report “*Knowledge Exchange Networks in Australia’s Innovation System*” by Dr John Howard commissioned by DEST comments, “The Report indicates that Knowledge Exchange Networks based on the transfer of knowledge through electronic web –based technologies have limited impact without the involvement of people and organisations performing the roles of facilitator and/broker.”

Paradoxically, the greater the opportunity for the transfer of knowledge through the Internet, the greater is the need for skilled facilitators, trusted advisers and what has been termed “honest brokers”, who can bridge the cultures and interests of academic and industrial researchers and who can create a high level of engagement and commitment between parties to an exchange.

Building capacity and capability for engagement in Knowledge Exchange Networks requires continuity and ongoing investment in the development and maintenance of skills.

Allocating this responsibility to an established organisation with a strong commitment to innovation, such as an industry association, is the most effective way to ensure that this investment takes place.”

KEN meets these requirements.

KEN would provide a unique, practical, cost-effective, and efficient mechanism for the interchange of information between universities, research organisations, and business (particularly SMEs), focussed on the use of IP in the former to help improve productivity in the latter, and the identification and communication of problems in business which might be effectively addressed by resources available in universities and research organisations.

However, KEN is much more than just an access and delivery mechanism. B-HERT proposed to-

1. Establish the Knowledge Exchange Network (KEN) with appropriately skilled human intervention to facilitate access to relevant IP in universities.
2. Conduct biannual forums of leaders from business and academia to address high-level issues of joint concern.
3. Conduct regular courses for staff from both business and academia to develop best practice at research interfacing and knowledge transfer.

Through growth in usage KEN would become self-funding through the user-pays principle.

Communities Engagement

Communities Engagement has a broad vista that extends beyond business and economic aspects. Universities have a wider view of engagement which includes social, economic, environmental and cultural dimensions of capacity building. Universities make contributions to government and civil society as well as the private sector, assisting not only with economic performance but also helping to improve quality of life and the effectiveness of public service.

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.

In practice Communities Engagement and Knowledge Transfer are part of the “core business” of universities, not separate from teaching and research, but which need to be recognised and encouraged and for which there is a cost and resource commitment which should be facilitated and if necessary funded.

With these activities universities seek to generate, apply and use knowledge and other university capabilities outside academic environments. At the same time, policy makers, industry leaders, business executives, and NGO managers understand the importance and contribution of scientific and humanitarian knowledge to innovation, resolving complex problems, and developing opportunities for productivity and performance improvement. These groups seek to draw on the distinctive capabilities of universities as co-creators of industrially, socially and environmentally relevant and applicable knowledge and in the application of it. These relationships could be significant drivers in creating a much more demand driven research and innovation culture.

In response to the question as to how Communities Engagement should be funded B-HERT recognises engagement is not new and all universities are already engaged with communities in a number of ways. Whilst community engagement is, and must be, a core business of universities, until now it has not received sufficient recognition as such and a legitimate funding.

B-HERT sees the key issue in building Communities Engagement as mainly one of “facilitation”, but supportive funding is also needed. Additional funding is needed to enhance the facilitation process. Funding for engagement should not be at the expense of teaching or research, but must represent additional funding to have optimum impact. The key driver is human capital.

It is important that this funding is additional and is not used (either by government or universities) as a substitute for alternative sources of funding that might, or might not, be under threat.

B-HERT considers that funding for Communities 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. Such arrangements would reflect industry and communities needs and opportunities and should give particular attention to cross-disciplinary research outcomes. Secondly, funds are required to focus on arrangements which support socio/cultural engagement which may take many different forms.

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. These should not include purely commercial ventures.

Institutional capability building should be provided through *base funding grants or infrastructure funding* arrangement for universities, allocated on a basis to be determined.

The allocation of funds to each university should recognise established industry engagement activities. In this way base funding would leverage existing Communities Engagement funding from industry sources.

Specific project arrangements should be based on a competitive process.

Any competitive bidding should not impose unreasonable burdens in the bidding process.

Acknowledging that measurement of *outcomes* is generally more useful than measurement of *inputs*, it is nevertheless useful in this area to focus on the measurement of the extent of Community Engagement *activity*, rather than the impact of each category of activity. Impact data in this area are, according to the Social Policy Research Unit of the Russell Group of universities in the UK (SPRU), ‘extremely skewed, uncertain and often attributable to serendipity’.

B-HERT Position Paper #11 *Universities’ Third Mission: Communities Engagement* available at www.bhert.com provides a broader coverage of the B-HERT position.

3.8 Resourcing the system- Questions 28-30

The very simple answer to the first question, “..are current funding models adequate to secure the future of Australia’s higher education sector?” is a resounding NO.

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. Alternative funding mechanisms should be investigated, some of which would provide funding to business and learners in partnership arrangements with significant performance imperatives for the recipients.

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.

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 (60,000 students) 1:10. This is a fundamental challenge which underpins the whole issue of quality teaching and learning.

In essence B-HERT believes that the status quo in higher education in Australia is not sustainable if we as a nation believe that future prosperity, equity and sustainability will predominantly come from being a knowledge-based society.

Commonwealth government funding in particular has been inadequate for public universities and has led to an over-reliance on increased HECS, overseas full-fee paying students and local full-fee paying students.

Australia has been the only developed country to reduce its public investment in tertiary education over the last decade.

There can be little doubt in our view that the current funding model and level of funding is inadequate. The current government funding framework is not a sustainable mechanism by which to support Australia's higher education system in the longer term.

The issue is not funding for more students, it is funding for quality, excellence, access, and student support.

B-HERT believes that it is imperative that the whole issue of how Australian universities might be adequately funded be subject to detailed investigation. There are alternative funding mechanisms and models and these need to be researched to explore all avenues to lift funding to adequate levels. .

There needs to be a breakthrough in current thinking, which clearly is not producing the optimum outcomes, is threatening quality, and does not provide the framework for Australia to move to world class. There is a real need to find a workable model and to build an understanding in the community as to why such a model is necessary and is the right one.

B-HERT would ideally not wish to see HECS levels increase above their current levels for many years. However, in the absence of proper indexation and adequate public funding to support the teaching, research and knowledge transfer activities more generally, it is inevitable that additional funding will be required from private sources.

As stated earlier, B-HERT supports the view of "regional" universities that consideration be given to reducing HECS rates for fulltime, 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.

It needs to be recognised that approximately three in every four regional students, and three in every five metropolitan students, who attend regional universities on a full-time basis for their undergraduate degree find their first full-time employment in regional Australia following graduation.

B-HERT supports the maintenance and enhancement of the dual system of funding for research via (a) block funding for competitive research grants allocated through independent research funding councils (ARC and NHMRC) on the basis of academic peer review, and (b) block funding for research infrastructure, allocated on the basis of research performance quality.

B-HERT's guiding principles for institutional funding are:

- Universities need greater operating autonomy in order to function effectively and competitively in local and international markets.
- Public funding should assist each university to pursue its distinctive mission and to excel in what it does best.
- Universities have a reciprocal responsibility to explain their purposes, and to report publicly on how well they have performed against their own goals and the performance standards expected of them. This includes effective and efficient asset management, revenue raising and cost management.

Differential funding is appropriate and other factors which might be considered in this context are –

- Historical differences
- Multi-campus institutions
- State/regional differences

B-HERT supports private investment in university infrastructure, buildings and equipment with ownership reverting to the university at the end of the investment period.

B-HERT strongly recommends that the Government uses the measure of its investment in higher education as a proportion of Australia's GDP as one of its key performance indicators and as a realistic and relevant measure of global competitiveness.

B-HERT strongly supports appropriate indexation for university recurrent funding. Current indexation arrangements have not, do not and will not keep pace with GDP growth. Without other funding injection, there has been and will continue to be an effective cut in resources which is the opposite to what is required. Efficiency gains should be realised and should be replaced by additional funding to maintain the commitment as a percentage of GDP. As previously mentioned, BHERT suggests that public funding be increased to 1.0% of GDP by 2015". Until 1995, university operating grants were adjusted to reflect actual movements in salary and non-salary cost movements. Subsequent arrangements have fallen short.

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.

B-HERT supports encouragement of students into particular courses and universities with lower HECS replaced by higher government funding.

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.

B-HERT favours a mixture of public and private (local and overseas) institutions with diverse Government, student, private sector and philanthropic funding and investment.

B-HERT supports the move to institutional mission diversity with funding based on institutional plans on a minimum four year cycle.

B-HERT has suggested in the past new funding instruments should be developed, for example, Higher Education Infrastructure Bonds, supported by taxation incentives, to attract funds from the private sector. Such an instrument would enable universities to tap into sources of funds which they hitherto had not accessed. With the progressive decline of government funding it is becoming more imperative for universities to find additional sources of funding.

Most universities have strong balance sheets in the sense of substantial assets, positive cash flow and low gearing (borrowings). This gives a prima facie basis for raising money in the market.

In the United States money has been raised through bonds to fund both secondary schools and universities.

Philanthropy

B-HERT sees philanthropy as an essential ingredient in the long-term development of Australia's universities. B-HERT has taken the lead in raising the issue of philanthropy in the higher education sector through its own initiatives and by being instrumental in putting it on the agenda of BIHECC.

B-HERT took the lead in the debate on Philanthropy in Higher Education when early in 2006 it hosted a summit on the theme '*Funding Tomorrow's Universities - Philanthropy, a Critical Source of Income*'. The summit attracted wide representation from the higher education sector, particularly those with an interest in university fund-raising.

As a positive and constructive outcome of the summit B-HERT established a Task Force to consider policy options and actions to encourage and assist universities to seek more philanthropic patronage. A Draft Discussion Paper was widely circulated seeking advice from Chancellors and Vice-Chancellors of Australian universities, members of B-HERT, leaders in business and industry, philanthropic organizations, and community leaders in general. This led to a B-HERT Position Paper No. 13 *Increasing Private Support for Australian Universities* being issued in December 2006.

The then Minister for Education, Science and Training, Hon Julie Bishop MP, from the outset of the B-HERT initiative, took a keen interest and, at her request, active participation of her staff in meetings of the Task Force kept her abreast of our project.

There are a number of recommendations in the Position Paper which B-HERT has already actioned and will continue to action. For example, it is suggested that a variety of conferences, courses and training would materially assist. B-HERT and Global Philanthropic conducted programs in Melbourne and Brisbane in 2007, and in Sydney in April 2008 (the latter attended by participants from 26 universities).

Global and B-HERT organised a two-week overseas tour in July 2008 to provide Vice-Chancellors, Directors of Development and others to visit London and New York to meet leading university staff to observe best practice in philanthropy.

In comparison with leading developed nations there is considerable scope for a much increased level of private support for universities in this country.

Private support is **not** a substitute for government base funding and it is **not** for maintenance of ongoing operations. It is to achieve excellence, to nurture innovation, enable diversification and support greater equity of access. ***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.***

Consolidating, growing and expanding sources of revenue will be an important step towards assuring the stability and independence of Australian universities so that they may contribute as fully as possible to a knowledge-based society. An important aspect of additional philanthropic revenue is that it will not compete with public money from other social and economic imperatives.

B-HERT Recommends that:

- i. All involved in or benefiting from Australian higher education should be encouraged to openly express the contribution that universities have made and are continuing to make to their lives, careers and the tasks that currently face them. This should involve beneficiaries of university education, research and outreach, including alumni, captains of industry, heads of public and private sector organisations, and politicians

of all political persuasions. Universities Australia (UA), the Universities Chancellors' Council (UCC), the Business–Higher Education Round Table (B-HERT) and philanthropic peak bodies should consider what they may do to this end.

- ii. UA should sponsor conferences and training and assist in the development of benchmarks for fundraising and alumni relations.
- iii. University governing bodies should:
 - include development in the university's strategic plan;
 - make annual budget allocations for development and review progress against fund-raising targets;
 - review the roles of vice-chancellor, senior staff, chancellor and governors to strengthen their responsibilities for fund-raising.
- iv. University managers should:
 - include courses in fund-raising as part of university leadership programs;
 - involve friends and alumni in university fundraising;
 - recognise and celebrate philanthropic contributions.
- v. The Commonwealth government should provide capacity building funding for university development offices.
- vi. State governments should implement mechanisms to assist universities in capacity building for fundraising.
- vii. The university sector led by UA should:
 - sponsor a working party to develop standard measures of university fund-raising costs, results and practices;
 - support university Chief Financial Officers to attend conferences and receive training on the special financial requirements for the receiving, monitoring and investing of philanthropic donations.
- viii. The Australian Universities Quality Agency (AUQA) should in future audits seek to identify examples of best practice in university development and fund-raising, to assist the sector to improve its performance.
- ix. The Commonwealth government should provide a time-limited matched funding scheme as has proved successful in other countries.
- x. State governments should implement incentive measures that use government contributions to leverage private support for universities.
- xi. The Commonwealth government should examine how policy might be employed to encourage planned giving through the trust structures and tax incentives it provides.
- xii. University managers through their development offices should examine and promote the use of the full suite of tax deductible gift options made available by the Commonwealth government including share gifts, gifts in-kind, and workplace giving.

- xiii. Business, industry, the professions and other relevant stakeholders should identify those universities with which they have closest relations and from which they derive greatest benefit. They should then:
- consider facilitating workplace giving to universities and offering a program that matches employee gifts to the universities;
 - consider sponsoring scholarships, prizes, placements, facilities and/or research in areas relevant to their enterprise.
- xiv. The general public and philanthropic organizations are urged to recognise that universities need support that is independent of government core funding, and to donate funds that will assist each university to develop its distinctiveness and strengths in a manner that encourages excellence.

For a more extensive discussion of Philanthropy refer to B-HERT Position Paper #13 – *Increasing Private Support for Australian Universities* at www.bhert.com.

3.9 Governance and regulation- Questions 31-35

Australian universities are over regulated and burdened with excessive bureaucratic controls and interference.

All universities should have their “ownership” vested in the Commonwealth Government, and be removed from State and Territory controls, with adequate safe-guards for substitution by the Commonwealth of financial and in-kind support withdrawn by state and territory governments as a consequence.

In some universities internal governance structures, roles and responsibilities need to be reviewed to ensure more effective and efficient operations. There have been some recent instances highlighting the need for this.

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.

Quality must be a given. There is no benefit in having ready access to mediocre universities. The sector must be able to demonstrate that it has the processes and systems in place to ensure consistency and quality of outcomes throughout the sector. In today’s environment in Australia there is a certain tension which universities and their staff feel in attempting to maintain the traditions of high quality research, scholarship and teaching.

The actual and perceived outcomes must be high, consistent and of sustainable quality. This is fundamental to meet the needs of Australia and Australians’ future and to maintain the confidence of our overseas students.

Measurement of quality should be by a mixture of stakeholder feedback, professional body accreditation and audits at both institutional and sector level. It should balance rigour with minimising bureaucracy. Universities are now significantly overly micromanaged by government resulting in lack of operational flexibility and overly corporatised management structures and higher overhead costs.

Universities have a responsibility to explain their purposes and to report publicly on how well they have performed against their own goals and stakeholder expectations of their

performance and outcomes. This should include employee development and effective and efficient asset management, revenue raising and cost management goals and performance.

The current 1 in 4 ratio of overseas students to domestic students is of concern with both analytical and widespread anecdotal evidence questioning the English language capability of up to 40% of overseas students. This puts at risk overall outcome quality. The learning experience of fluent English speakers is vital to ensure confidence is not reduced in Australia's educational quality.

Increased government funding and diverse institution missions will have a stronger impact on quality than the introduction of additional audits and rules. As part of quality assurance, work needs to be done to determine the level of business satisfaction with undergraduate and graduate courses.

A handwritten signature in black ink, appearing to read 'Ashley Goldsworthy', with a large, sweeping flourish extending to the right.

Professor Ashley Goldsworthy AO OBE FTSE
Executive Director

A SUGGESTED LIST OF OUTCOME ORIENTED KEY PERFORMANCE INDICATORS FOR HIGHER EDUCATION

Student Outcomes

Table 1*	Award Course Completions by Broad Level of Course.
Table 2*	Percentage of Bachelor Degree Graduates Available for Full-Time Employment
Table 3*	Breakdown of activities of graduates available for Full-Time Employment by Course Level.
Table 4*	Percentage of Bachelor Degree Graduates: Available for Full-Time Employment by Selected Fields of Study.
Table 5*	Median Annual Starting Salary of New Bachelor Degree Graduates.
Table 6*	Median Starting Salaries for Males, Females and All Graduates by Employment/ State/Territory, and a Comparison for all Graduates as % AWE by State/Territory.
Table 7*	Course Satisfaction

External Engagement

Table 8*	Educational Attainment and Labour Force Status.
Table 9*	Unemployment rate (aged 15-64).
Table 10	Employer engagement and satisfaction. (The level of employer satisfaction with graduates entering the workforce and say three years after entering). <i>Measures outcomes for employers.</i>
Table 11	Parent engagement and satisfaction. <i>Measures outcomes for an important group of stakeholders.</i>
Table 12	Level of community awareness and engagement with higher education to assist with economic and social development. <i>Measures outcomes for communities.</i>
Table 13	Educational level correlated with criminal conviction. <i>Measures outcomes for communities.</i>
Table 14	Educational level correlated with cultural tolerance and understanding. <i>Measures outcomes for communities.</i>

- Table 15** Educational level correlated with the development of the voluntary sector. *Measures outcomes for communities.*
- Table 16** Educational level correlated with dependency upon services supplied by the State. *Measures outcomes for communities.*
- Table 17** Readiness to learn (Higher levels of education have a positive impact on the readiness to learn of successive generations; those who benefited from higher education for the first time in the 1960s also wanted their children to benefit.)

Indigenous Outcomes

- Table 18** The extent to which Indigenous Australians engage with and achieve positive outcomes from higher education. *Measures outcomes for Indigenous people.*

Efficiency Indicators

- Table 19** Research Higher Degree Completion Rate.
- Table 20** Research and Development Publication Research per 10 staff.

An International Perspective

- Table 21*** Percentage of tertiary graduates, by field of study and level of education.
- Table 22*** Relative Earnings of Selected Age Groups with Income from Employment for Selected Age Groups.
- Table 23*** Private internal rates of return to education.
- Table 24*** Population that has attained tertiary education.
- Table 25*** Percentage of population aged 25 to 34 with tertiary education.
- Table 26*** Ratio of students to teaching staff in public and private institutions by level of education, calculations based on full-time equivalents.
- Table 27*** Average academic staff salaries in Universities – selected countries.

Local or Regional Indicators (For Individual Universities)

- Table 28** Participation Rates
- Table 29** Retention Rates at Secondary Schools
- Table 30** Local or Regional Research Activity
- Table 31** Local or Regional Consulting

For those tables marked with an * the data are already available and published from a variety of sources. For the remaining tables new collections would have to be established.