

Business
Council of
Australia



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**Submission to the
Review of the Australian Higher Education System**

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1. Executive summary

The aim of this review should be to put forward reforms that contribute to Australia having a world class higher education system in the 21st century that plays a critical role in growing Australia's economic and social prosperity.

What does business need from Australia's universities?

Business is looking to higher education to contribute to meeting the challenges and making the most of the opportunities that Australia will confront over the next decade and beyond. Common themes running through these challenges and opportunities are the rapid growth in emerging economies, the importance of innovation, the effect of climate change and abatement initiatives, and the need to improve the productivity of the Australian economy.

Building global engagement through international linkages

Australia needs to develop the understanding and skills required in order to compete in global markets and to increase our level of participation in regional and global supply chains. Asia and the Asia Pacific continue to be the focus of new and emerging economic opportunities. Realising substantial outcomes from these opportunities will be essential to achieving increased productivity and supporting our standard of living. An important contributor to these linkages can and will be higher education and research institutions that build lasting relationships with key international learning and research counterparts.

The effect of education on productivity

Future productivity levels will make an important contribution to our growth and living standards over the next decade and beyond. In recent years, Australia's productivity growth has not matched the levels achieved in the 1990s. Education is seen as making an essential contribution to modern business and wider economic advances. Increased investment in education can, if directed to improving knowledge, skills and opportunities, boost both productivity and participation levels. Achieving these

outcomes through education has a direct effect on the level of productivity in the economy because it increases the productivity of individuals¹.

Developing our innovation capabilities

Australia needs to create the most supportive possible environment for innovation. A high quality tertiary education sector makes a vital contribution to developing the capabilities that enable innovation. The effectiveness of that contribution depends on improving the quality of education and research outcomes and the ability to engage in collaboration with end users. Successful business enterprises look not only to the knowledge and skills that people possess, but also the ability of each individual to apply their knowledge and skills in ways that contribute to building new value or providing benefits to the wider community.

Preparing the Australian economy for future challenges

Australia will need to utilise innovation to remain competitive following the implementation of policies to reduce the reliance of economies on industries and activities that produce high levels of greenhouse gas emissions. In particular, well considered investments in testing and developing new and alternative technologies are going to be essential in providing the basis for future productivity and growth.

This will also require an acceleration in the take up of existing and new overseas technologies to ensure the most efficient and effective options are developed. Through research, collaboration and education, higher education can contribute to meeting this challenge.

Greater participation of capable students from disadvantaged backgrounds

Higher education also has a key role in offering greater opportunities for Australia's capable but disadvantaged students regardless of their backgrounds. The

¹ Access Economics, 'The Economic Benefit of Increased Participation in Education and Training', A report prepared for the BCA and the Dusseldorp Skills Forum, May 2005

consequences of disadvantage are that children and young people do not obtain the minimum level of knowledge and skills required to take up opportunities for a fulfilling and continuing career. They have little choice but to take on unskilled jobs or part time employment, and often experience periods of unemployment and become welfare dependent.

What is required?

A broad based strategy aimed at lifting the quality, participation levels and the effectiveness of the higher education system is needed. Such an approach is outlined in this submission. It should have at its core a greater emphasis on outcomes. From this broad based approach, the BCA has identified six priorities which we regard as the most important reforms which would, if implemented, provide significant benefits to the nation. These are:

1. New incentive arrangements to continue to improve the quality of teaching and learning

When businesses are asked about the most important contribution that the higher education sector makes to innovation and to their firm, the most common answer is the education of high quality graduates. A fundamental requirement then is to meet a continuing need for graduates who have benefited from high quality teaching while in higher education. But, as business understands it, from the standpoint of a university academic the most important aspect of their work and where most of the incentives are provided is in the area of research. For this reason the BCA recommends the introduction of new incentives that recognise and reward high quality teaching and learning outcomes, and which are relevant to the current needs of business. New incentive arrangements should complement arrangements to develop higher-level research knowledge and skills. Business recognises that teaching within universities benefits from being informed by research.

2. Matching course offerings with workplace opportunities for students

The higher education sector needs to work closely with business and with the public sector to match courses with the current and emerging needs of employers. Research conducted for the Victorian Government in 2007 found that in Victoria

alone a future cumulative shortfall of about 50,000 people with graduate and post-graduate degrees is projected over the next 14 years². The same study found that the projected growth in demand for higher education graduates will not be uniform across different courses. An improved approach is needed to provide higher education institutions with the information they need to respond in a timely way to new areas of demand as these are identified. A key requirement should be obtaining regular high quality information from employers, both in the private and public sectors.

3. National arrangements for applied research

The most effective way to improve knowledge transfer between universities and business in the area of applied research is to encourage greater demand by business for research. A major deterrent to effective knowledge transfer is the inconsistent and often rigid arrangements under which universities enter into agreements with business for undertaking applied research with a view to the commercialisation of new technology. The BCA recommends the development of a nationally consistent approach to conducting applied research, which includes simplified arrangements for allowing private organisations to access publicly held intellectual property.

4. Development of a new collaboration framework

More generally, transferring and utilising the knowledge generated from research involves forms of collaboration other than commercialisation activities. Examples of these activities include both formal and informal interactions and exchanges between academic staff, research students, business and the wider community³. Business envisages the potential for highly skilled researchers to analyse and provide advice on the results of research conducted elsewhere in the world, especially in Asia, as well as in Australia. Improving Australia's awareness and understanding of the approximately 98 per cent of new knowledge generated overseas should be a high

² Department of Innovation, Industry and Regional Development, Industry Demand for Higher Education Graduates in Victoria, 2008-2022

³ Productivity Commission, Public Support for Science and Innovation, March 2006

priority. In support of such an approach, it is proposed that Australia develop a collaboration framework for engagement between universities, research organisations, other public sector organisations and business. The objectives of this framework should include the increased utilisation of research for the economic or social benefit of the nation.

5. Increased linkages in and with Asia

In order to take up the opportunities afforded by the rapid investment in research and technology in Asia, especially in China and India, Australia should develop a national strategy for further building direct linkages between the Australian higher education and research sectors and those of Asia. There are several initiatives underway today but we need to be increasing both the depth and the range of activities in this area which is vital to Australia's future. One objective of such a strategy should be to increase the number of Australian students with skills relating to one or more Asian language and culture. It should also involve improving our approach to international education provided in Australia and by Australian institutions in Asia.

6. A new national scorecard of education performance

Australia lacks effective national measures of how well universities educate their students. These are required to support a greater focus on outcomes. The BCA recommends the introduction of a post-graduation evaluation which includes agreed performance measures of schools, vocational education and training and higher education, to be published annually. The development of this evaluation should be an important national project. We should aim to be able to understand how well the higher education system, and how well the other systems, have advanced the learning of the individuals that have graduated from their institutions.

What do these key priorities assume?

Publicly owned universities are part of the social infrastructure and should be funded appropriately. Current funding levels have resulted in capital facilities that have not matched international competitors, a build up in backlog maintenance, and deteriorating student-staff ratios.

Our universities are a critical part of economic infrastructure that can drive both the discovery and the transfer of new knowledge through the economy and society, and they are an essential partner in skills formation.

However, they do not have a monopoly on knowledge creation or the availability and utilisation of that knowledge, and increasingly must work in partnership with other organisations and sectors. Therefore, the outcomes we seek from universities should include improvements with respect to establishing effective partnerships.

What does this require?

As a nation, we do need to provide greater public investment in our higher education system in return for a focus on improving key outcomes. Current public funding levels are comparatively low by international standards and the level of capital investment is not keeping pace with competitors from developed or emerging economies.

Improved dialogue and collaboration between the education sectors, and between all three sectors and government and senior business and community representatives is also essential, so that there is a better understanding of the emerging shape of the economy, and the respective contributions from each. This effectively requires the ability for each sector to be able to take a ten to twenty year view to inform current planning.

It also requires the delivery of high quality and internationally competitive higher education services, as well as improved productivity from within Australia's higher education sector. In return for increased investment, key outcomes should be agreed, measured and delivered.

2. Introduction

Higher education has a vital contribution to make in preparing and positioning Australia for the new and emerging challenges and opportunities that will transform the global environment in the 21st century. These developments include the continuing rise of China and India, the increasing economic influence of Asia more generally, the global challenges of climate change and tensions resulting from rapid economic and population growth in developing nations.

Against this background, successful business enterprises are looking to not only the knowledge and skills of people, but also the ability of those people to apply their knowledge and skills in ways that contribute to building new value. This value is increasingly being created by more effective organisational integration and through the broad range of processes that contribute to innovation.

It will be important that the objectives and outcomes of the higher education sector, in conjunction with the school and training sectors, are broadly engaged with supporting Australian organisations to develop, compete and grow in the context of these changes.

Relying on established or 'proven' frameworks for approaching global challenges will not be adequate in the decades ahead. Different environments will require new approaches. The capabilities to develop new and flexible approaches based on analysing current information and events and on trying new methods will be critical to meeting emerging challenges and successfully identifying and benefiting from new opportunities. This extends to the need for multi-disciplinary approaches to tackling problems and developing innovative new responses.

Higher education is well placed to play a critical role in contributing to Australia's ability as a nation to adapt to the changes and take up new opportunities in a new era. This is because, first and most importantly, Australia needs to fully understand and learn from the changes taking place. Second, the success or otherwise of the nation in navigating its future course will depend increasingly on the depth and strategic application of the nation's global relationships.

This submission argues that reforms to Australia's higher education policy settings should be aimed at achieving the following six priorities:

- further improving the quality of teaching and learning outcomes and ensuring that teaching and learning content and standards reflect the requirements of industry in the context of global economic developments;
- improved arrangements for matching the courses and places offered by higher education institutions with workplace opportunities for graduates;

- introducing a new national approach for applied research which includes simplified arrangements for allowing private organisations to gain access to publicly held intellectual property;
- the development of a national collaboration framework to enable broad based engagement with business and other organisations outside the higher education sector. In part this should aim to effectively utilise the knowledge and skills of researchers, including their ability to analyse and interpret new knowledge and the significance of new applications of knowledge discovered and developed overseas;
- increasing linkages between Australia’s higher education sector and the higher education and research institutions in Asia and the Asia Pacific, and improving Australia’s ability to engage with the countries of Asia; and
- the development of a new national scorecard that evaluates key performance measures for the higher education, vocational education and training and schools sectors.

These priorities, together with other policy settings required to support the achievement key outcomes are discussed in sections 4 and 5.

3. The global and domestic context

3.1. The global context for Australia

The continuing emergence of China and India

The global context in which Australian businesses are engaged is undergoing considerable change. The 21st century is already witnessing the start of a new era characterised by the shift of economic power and influence to Asia and the Asia Pacific.

Economic growth in China, and increasingly India, continues to transform global trade and investment patterns. Although for the last half century Japan, South Korea, Taiwan, Hong Kong and Singapore have dominated Asian economic activity, China has rapidly caught up and overtaken its neighbours. China has recently displaced

Japan as the world's third largest trading nation. The policy decisions of the Chinese Government have opened up a huge market to the world.

India's global integration has increased substantially and it has the potential in future, given its huge pool of labour and undeveloped resources, to become a labour-intensive, leading producer of industrial goods and a substantial exporter of agricultural products. India is Australia's fastest growing major export market.

Both countries have altered and will continue to change the international trade and investment landscape. Over the last decade, we have seen the emergence of a new professional, skilled and self reliant population in Asia. In part, this reflects the value that these nations place on education, including higher education.

These developments are set to accelerate with World Bank estimates showing that between 2000 and 2030 the number of people in East Asia and the Asia Pacific categorised as 'middle class' will increase by more than 500 million.

A number of other countries such as Brazil, Russia and Indonesia are achieving strong economic growth rates and are expected to take up a more prominent role in the international economy.

These changes in the global economy are generating new opportunities and challenges for Australian business. While Australia has developed effective economic relationships with China and we are achieving growth in trade with India, our future commercial and broader relations with these countries must not be taken for granted. These and other vital economic relationships will continue to evolve over time. Australia's public and private sectors will need to ensure that our capacity to build relationships and successfully identify and take up new opportunities is strengthened for the future. This will require detailed specialist knowledge as well as the broader ability to establish and conduct effective people to people links between nations.

Population growth in developing nations

Rapid population growth is forecast in many developing nations. For example, the populations of Pakistan, Nigeria, Bangladesh and Ethiopia are expected to approximately double between the years 2005 and 2050.

As a result, there are likely to be new and persistent tensions within and between developing nations caused by rising income gaps as they pursue growth and attempt to reduce poverty levels. These tensions are likely to impact on relations with India and China and other nations in the Asia Pacific.

Environmental sustainability and climate change

The sustained levels of economic and population growth which are anticipated will exacerbate pressures on the environment. There is a need for policy frameworks and markets to reflect the value that our society places on environmental protection and preservation. Managing the potential risks associated with climate change will be a long-term challenge for Australia and the nations of the world. It has been estimated that carbon emission levels in China have now surpassed those of the United States. Effective engagement with developing nations will be increasingly important, especially as a new global agreement will be required in order to make significant progress with reducing greenhouse gas emissions.

Technology

Continuing advances in technology underscore the importance of innovation and skills to increased productivity and sustained economic growth. Sources of comparative advantage will continue to change at a rapid pace.

At the same time, while advances in information and communications technology will help to counter geographic isolation, distance from global sources of innovation and technological breakthroughs can limit the potential 'spillover' benefits Australia may be able to capture. For this reason, the capabilities of Australian organisations and institutions with respect to building international networks and utilising new advances at the earliest possible time will be important to Australia's future productivity and growth. With approximately 98 per cent of new knowledge generated outside Australia, it is essential that we develop our capacity to identify and, where relevant, apply new advances wherever they are achieved. This is especially the case when it comes to new knowledge generated by emerging technology centres in countries such as India and China.

The movement of people

The increased mobility of people, especially professional and skilled workers, is viewed as a necessary component of the global integration process. Equally, there are demands for unskilled labour in developed countries where sustained growth combined with declining birth rates has resulted in a shortage of people to fill positions that do not require skills or qualifications. But increased flows of people across borders often results in concerns raised by organisations and communities who perceive that they may be adversely affected by policies that enable freer movement between countries. Partly in response to these concerns, there continues to be significant restrictions placed on the ability of people to move across borders for work, especially between developed and developing nations. Another factor in restricting the movement of people has been the heightened security environment resulting from terrorist attacks.

3.2. Global business integration

Against the background of these challenges and opportunities, businesses are continuing to integrate their operations on a global basis. Global business integration has been driven by a number of factors including:

- technological advances in information processing, communications and in transport;
- government policy changes that enable increased economic integration;
- businesses and other commercial organisations competing and utilising innovation to create new and improved products and services, and organising production in new ways, in response to market demand and opportunities provided by policy;
- investment growth in the form of both inwards and outwards foreign investment flows underpin increased global integration by businesses and other organisations involved in commercial transactions. In turn, this is resulting in national economies becoming more economically integrated over time; and
- rising incomes from economic growth that result in larger and more sophisticated markets with corresponding increases in demand for new products and services.

The most significant change in global business has been the increasing number of organisations or networks that divide their operations into specialised activities in different locations throughout the world. This involves the global reorganisation of production and supply chains. Specialised operations are located where businesses assess they can derive additional value, whether from reducing costs or accessing expertise and know how. Higher education institutions are often integral to the development of specialised centres or hubs. These specific activities are typically linked to other inputs as part of a global or regional production network. The establishment of global networks of specialised activities linked by information and communications technology and international transportation is what is typically understood by global business integration. The networks established through global integration often involve a large number of businesses organised into relationships through supply chains. Global supply chains involve large, medium and small businesses.

3.3. Domestic challenges

Preparing the Australian economy for future challenges

Domestically, sustained economic growth over more than one and a half decades has benefited our society. It will be important that, as a nation, we invest in building the capabilities required to be productive and sustain growth over the medium to longer term.

Australia will need to improve its capacity to innovate following the implementation of policies to reduce the reliance of economies on industries and activities that produce high levels of greenhouse gas emissions. In particular, well considered investments in testing and developing new and alternative technologies are going to be essential in providing the basis for future productivity and growth.

This will also require an acceleration in the take up of existing and new overseas technologies to assist transformation. Through research, collaboration and education, higher education can contribute to meeting this challenge.

Greater participation of capable students from disadvantaged backgrounds

Higher education also has a key role in offering opportunities for Australia's capable but disadvantaged students regardless of their backgrounds. The consequences of disadvantage are that children and young people do not obtain the minimum level of knowledge and skills required to take up opportunities for a fulfilling and continuing career. They have little choice but to take on unskilled jobs or part time employment, and often experience periods of unemployment and become welfare dependent.

An ageing population

In common with many developed nations, Australia has an ageing population. This is expected to have severe consequences for the domestic economy beyond 2020 when the proportion of people who have retired from the workforce will increase significantly, with a commensurate decline in the number of younger Australians entering the workforce. New pressures are expected to be placed on both the private and public sectors in meeting the twin challenges of a need for more skilled employees of working age, and the health and financial security of the retired population.

4. What will be required of our future workforce?

In considering reforms to higher education, when allowance is made for the time it will take to implement new decisions, it is necessary to focus on what will be required of people either entering the workforce or who are in the workforce in ten years from now.

It has been observed that societies overestimate the amount of change that will take place in the next twelve months, but underestimate the extent of changes over the next five years and beyond.

It is very difficult to predict precisely what kinds of skills will be required. In light of this, it is important that individuals who undertake higher education have the opportunity to combine the learning of core knowledge and technical skills with both broader capabilities, and with the ability to engage in continuous self-education.

Research into business requirements has shown that businesses generally, over time, place a greater value on higher level skills. Furthermore, it is in the nature of skills that are relevant to businesses that they need to be updated or upgraded at increasingly shorter intervals. This is largely due to advances in technology and the consequential impact upon skills, requiring people to be able to use and understand updated machines, information and communications technology, equipment and materials.

Specialist knowledge and skills will continue to be valued. At the same time, it will be important to ensure that education provision does not, through a narrow focus on specialised skills, confine individuals either to one career path or to an occupation that becomes obsolete.

There are also insights we have gained from the global integration of business. Businesses value the capacity of people to form networks. But effective innovation ultimately depends on partnerships that extend beyond networking. The key to current and future innovation is in effective collaboration. Increasingly, this is taking place outside the organisations, extending to collaboration with suppliers, customers and with other organisations.

Importantly, effective collaboration requires individuals to contribute to a multi-disciplinary approach to solving problems or developing new strategies. Businesses are not looking for people to necessarily have detailed knowledge of disciplines outside their area of specialised knowledge. But there is an expectation that employees will take a broader perspective and understand enough about the value of other disciplines to be able to work collaboratively with experts in those other disciplines.

The other key driver of workplace effectiveness for the majority of businesses, especially larger enterprises, will be continuing global integration. This process has been underway for a long time. Despite this, the way international organisations are structured and operate is continuing to undergo substantial change based on new and more effective regional or global integration.

5. Higher Education Outcomes: A business perspective

Taking account of the global and domestic context, as well as the future workforce requirements, the BCA submits that Australia's higher education system should be aiming to achieve specific outcomes in the following areas.

5.1. New incentive arrangements to improve the quality of teaching and learning

When businesses are surveyed about the most important contribution that the higher education sector makes to innovation and to their firm it is in the education of high quality graduates. This reflects a continuing need for graduates who have benefited from high quality teaching while in higher education. But, as business understands it, from the standpoint of a university academic the most important aspect of their work and where most incentives are provided, is in the area of research. For this reason the BCA recommends the introduction of new incentives that recognise and reward high quality teaching and learning which is relevant to the current needs of business. New incentive arrangements should complement arrangements to develop higher-level research knowledge and skills. This recognises that teaching benefits from being informed by research.

The BCA submits that there should be six key objectives in relation to graduates of higher education institutions.

(i) Depth of knowledge and strong technical skills.

Businesses continue to seek graduates who have achieved a deep level of knowledge and understanding of their particular field of study, equivalent to that attained by graduates of leading international institutions. Importantly, this should be accompanied by strong technical skills relating to the productive application of knowledge.

(ii) The ability to update and upgrade knowledge and skills

In light of the rapid pace of technological advances, it is necessary for individuals in their careers to update and often to upgrade their knowledge and skills at regular intervals. The most effective way to ensure this occurs is to instil in students an appreciation of and an ability to engage in continuous self-education and to do so by

taking a global perspective in relation to new knowledge and the development of skills. This would need to include the ability to recognise when additional formal training or education is required.

(iii) The ability to augment qualifications with knowledge and skills from other fields

Businesses are also seeking individuals with the ability to take or participate in a multi-disciplinary approach. This requirement is not a new development. But the ability of individuals to contribute to a multi-disciplinary approach will become more highly valued by business in the future. This is because the combination of knowledge from different disciplines enables business to gain new or different insights that can contribute to building a new area of competitive advantage. Therefore, businesses increasingly value graduates who have augmented their knowledge in one specialised field with some attainment of knowledge and skills in one or more additional areas. While this means that individuals who have completed two degrees are sought after, this requirement can also be achieved in other ways. The key outcomes it refers to are:

- a capacity to take a broad perspective and an ability to augment knowledge in other areas beyond an area of specialisation;
- an ability to take or contribute to a multi-disciplinary approach to applying knowledge;
- a willingness to experiment with different approaches; and
- to apply knowledge in practical settings.

(iv) The attainment of broad based employability skills

The BCA would also like to see depth of knowledge and specialised skills complemented by the learning of broader capabilities which have a more general application. These include:

- strong general information and communications technology skills;
- the ability to communicate effectively with others;

- problem solving;
- planning and organisational skills; and
- team work and leadership skills, including the ability to move between and quickly adapt to leadership and more team oriented roles.

In emphasising employability skills, it is sometimes perceived that businesses are expecting universities to take on a substantially increased workload in order to teach broader life skills in addition to the existing core curriculum. This is not the case. The BCA submits that employability skills can be incorporated into the existing regular curriculum without there being a requirement for a greatly increased workload. Broader skills should be able to be taught alongside and as part of the core curriculum.

Businesses would like to see all higher education students gain a greater understanding and command of employability attributes. The combination of strong and effective technical skills with an understanding and some development of all the key employability characteristics will often enable an individual to perform at a high level in the workplace and achieve the transition into a career much more effectively than if they if they have strong technical skills but lack proficiency with employability skills.

(v) A greater opportunity to learn Asian languages and culture

A further outcome should be to encourage and provide increased opportunities for students to learn at least one Asian language and to study the culture of one or more Asian countries, in addition to their specialised field of study. Generally, there is an inadequate knowledge of Asian languages and culture amongst graduates from higher education, given the importance of the region to Australia's future economic and broader security interests.

(vi) Research into the quality of teaching and learning

Research should be complementary to the objective of improving the quality of teaching within higher education. Therefore, business supports close linkages between research and teaching at a number of levels. Firstly new research, whether in Australia or overseas, should inform teaching. Secondly, the teaching of research

skills and methods, including the techniques that are required for critical and creative thinking, should be an integral part of all higher education, being both delivered through core courses, and in all other forms of teaching including research supervision.

Thirdly, in light of the importance of teaching to higher education, there should be a place amongst research priorities for specific evidence-based inquiry into improving the effectiveness of teaching and learning in different fields. If in future, there are higher education institutions that choose to give a greater emphasis to teaching, they should still have access to research funding for the purpose of improving the quality of teaching.

5.2. Matching course offerings with workplace opportunities for students

The higher education sector needs to work closely with business and with the public sector to match courses with the current and emerging needs of employers. Research conducted for the Victorian Government in 2007 found that in Victoria alone a future shortfall of about 50,000 people with graduate and post-graduate degrees is projected⁴. The same study found that the projected growth in demand for higher education graduates will not be uniform across different courses. An improved approach is needed by which higher education institutions become aware of and are able to respond in a timely way to new areas demand as these are identified. A key requirement should be obtaining regular high quality information from employers, both in the private and public sectors.

A key issue for business is the capacity of the higher education sector to meet skills requirements for Australian organisations both in the global and domestic markets in which they operate. This extends to the skills needs of Australian organisations operating overseas.

⁴ Department of Innovation, Industry and Regional Development, Industry Demand for Higher Education Graduates in Victoria, 2008-2022

Despite having national arrangements in place for the allocation of places, the inability of the system to respond in a timely way to emerging and continuing skill requirements is an ongoing problem.

Currently, by way of example, there are shortages of people with specific engineering skills, information and communications technology skills, and commerce and accounting qualifications. There continues to be significant need for more qualified professionals in the health sector. There is a tendency for Universities to offer courses based on arrangements from previous years and student demand without sufficient regard to underlying industry demand for skills and qualified people. The preferences of students are an important consideration and should continue to be a key factor in the offering of courses and the allocation of places. The challenge though, is to improve the way that student demand is well informed by industry needs in relation to skills and qualifications, and to augment planning and decision making with the best available information and projections from private and public sector employers.

The strategic outcome that business is seeking is a system that is more responsive to the demand for skills as they emerge within the economy.

Furthermore, given that businesses derive value from higher level skills, a key objective should be greater participation by domestic students in higher education. The BCA submits that this objective should be part of a broad based strategy encompassing reforms to school education, access and equity and participation in higher education.

Bringing these requirements together, the two outcomes proposed by the BCA are first, to develop a system that responds more effectively to skills requirements as they emerge within the economy. Second, to increase overall participation in the context of a responsive system.

5.3. National arrangements for applied research

The most effective way to improve knowledge transfer between universities and business in the area of applied research is to encourage greater demand by business for research. A major deterrent to effective knowledge transfer is the inconsistent and often rigid arrangements under which universities enter into

agreements with business for applied research and the commercialisation of new technology. The BCA recommends the development of a nationally consistent approach to conducting applied research, which includes simplified arrangements for allowing private organisations to access publicly held intellectual property.

5.4. Development of a new collaboration framework

More generally, transferring and utilising the knowledge generated from research involves forms of collaboration other than commercialisation activities. Examples of these activities include both formal and informal interactions and exchanges between academic staff, research students, business and the wider community⁵. Business envisages the potential for highly skilled researchers to analyse and provide advice on the results of research conducted elsewhere in the world, especially in Asia, as well as in Australia. In support of such an approach, it is proposed that Australia develop a collaboration framework for engagement between universities, research organisations, other public sector organisations and business. The objectives of this framework should include the increased utilisation of research for the economic or social benefit of the nation.

Innovation by Australia's businesses, governments and research institutions has delivered many economic and social achievements. But we need to continually improve and adapt to a fast changing global environment.

The outcomes that business is proposing for research correlate with those for innovation, and include the following key priorities.

(i) Conducting high quality research

Research which is aimed at developing new knowledge and understanding should be of a high standard when assessed on the basis of international comparisons. Pure research conducted by Australian universities is a public good because it provides for this knowledge to be developed in an Australian context, informed by our particular environmental and social circumstances. Such research contributes to international efforts to discover new insights and make valuable breakthroughs.

⁵ Productivity Commission, Public Support for Science and Innovation, March 2006

Importantly, this form of research activity builds Australia's skill base and capabilities in what are highly specialised fields of endeavour.

(ii) Increased research collaboration

Effective collaboration is the conduit through which knowledge can be directed to its most beneficial uses. Improved collaboration is essential if the higher education system is to support the review objective of contributing to "innovation and productivity gains required for long term economic development and growth".

The BCA's submission to the review of Australia's National Innovation System called for the prioritisation of the development of closer and more effective collaboration between business and the research and education sectors.

Despite much recent improvement, Australia still overall ranks low in international comparisons of collaboration. This activity needs to be increased and enhanced if Australia is going to be globally competitive when it comes to business research and development. We need to have a strategy which supports Australia continuing to lift its collaborative business research and development performance. We must turn Australia into a world leader in effective collaboration.

International experience has shown that effective partnerships between business and universities can be very valuable. Yet in Australia there appears to be a weakness when it comes to collaboration between universities and private enterprise. Only 2.3 per cent of our innovating businesses collaborate with universities or other higher education institutions. Other nations have significantly higher connection rates. Australia needs to improve its performance in this area because it is increasingly used by other nations to improve and support innovation.

There is also scope to improve the level of collaboration between Australian and foreign higher education institutions in conducting research aimed at extending knowledge and understanding. While some Australian institutions have effectively participated in international collaboration, the BCA views an increased level of such collaboration as beneficial in improving Australia's engagement in research in conducted overseas and strengthening domestic research capabilities.

All parties can further develop their collaboration capabilities. Research staff within higher education institutions will require skill sets additional to their technical

expertise, particularly in commercial skills such as contract preparation, deal negotiation and IP valuation. Research management systems should be structured so as to support more effective collaboration with external partners. For its part, business can also develop its collaboration skills and develop its understanding of the rules under which public sector research partners operate. For the benefit of all parties, we need to undertake greater research into collaboration itself and disseminate information about effective collaboration practices. Current performance indicators encourage researchers to publish and disseminate their ideas. New performance indicators that encourage collaboration and more advanced forms of knowledge transfer, engagement and utilisation are desirable.

The Government has a number of programs designed to encourage collaboration between the private and public sectors, for example, the Cooperative Research Centre program and Australian Research Council (ARC) linkage grants. These programs have provided a strong catalyst to bring parties together and to develop a positive culture of collaboration in Australia. The focus should now be on ensuring that policy settings allow sufficient flexibility and impose the lowest cost on all parties entering into collaborative ventures under the programs. Care should also be taken to ensure that these programs do not ‘crowd out’ research that might otherwise occur through direct collaboration.

Broadly speaking, innovation policy should support ‘innovation partnerships’ between business and the research and education sectors, particularly through ensuring that publicly funded applied research is informed by the needs and opportunities identified by industry, or so-called ‘third stream’ funding. This would include examining the benefits for extending the requirement for researchers in universities and research organisations to have a partner or partners outside their organisation when making an application for various applied research funding mechanisms (possibly using ARC Linkage Grants as a model).

(iii) A greater contribution to innovation

Through each of the outcomes identified above, research should contribute to supporting Australia’s innovation performance.

Business envisages a greater role for higher education research in informing other sectors about new research discoveries and applications of research throughout the

world. In this way, as well as conducting research within Australia, researchers might also interpret and analyse international developments in research. Australia's national capacity to identify and utilise new knowledge as it is created globally will be important for our future competitiveness. With approximately 98 per cent of new knowledge generated outside Australia, future innovation and productivity will depend on our capacity to utilise new advances at the earliest opportunity.

The productive application of the outcomes of research can deliver significant economic benefits over time. For many firms it will be the critical driver of success in increasingly competitive international markets. Our capacity is likely to be limited by the relatively low number of research trainees in Australia compared to other nations. Policy settings need to be developed with the aim of providing greater encouragement for talented people in key fields to work in research and to strive for high quality outcomes from their work.

5.5. Increased linkages with Asia

To take up the opportunities afforded by the rapid investment in research and technology in Asia, especially in China and India, Australia should develop a national strategy for further building direct linkages between the Australian higher education and research sectors and those of Asia. There are several initiatives underway today but we need to be increasing both the depth and the range of activities in this area which is vital to Australia's future. One objective of such a strategy should be to increase the number of Australian students with skills relating to one or more Asian language and culture. It should also involve improving our approach to international education provided in Australia and by Australian institutions in Asia.

5.6. A new national scorecard of education performance

Australia lacks effective national measures of how well universities educate their students. These are required to support a greater focus on outcomes. The BCA recommends the introduction of a post-graduation evaluation which includes agreed performance measures of schools, vocational education and training and higher education, to be published annually. The development of this evaluation should be an important national project. We should aim to be able to understand how well the higher education system, and how well the other systems, have advanced the learning of the individuals that have graduated from their institutions.

Improved data and international comparisons

The BCA has previously detailed its view that credible, comprehensive and comparable data measuring the social and economic outcomes of higher education is an area where the higher education sector needs to continue to improve its arrangements. There continues to be, in our view, more of a focus on inputs.

It is proposed that an improved model for outcomes measurement should be developed as a national project. Possible time series data that could be considered for inclusion in a national scorecard include:

- student learning including the level of vocational knowledge acquired by students and its relevance to the skills expectations of employers;
- the extent to which student demand for higher education and employer demand for graduates is being met;
- research outcomes, assessed according to whether it is categorised as blue sky pursuit of new knowledge or commercially focused research;
- governance systems; and
- measuring the adequacy of resources available to provide a high quality education and support research outcomes.

In developing improved data collection and analysis, consideration should be given to collecting data that is consistent with international practice so as to allow greater capacity for international comparisons. However, the most important requirement is for data to provide information on key outcomes that are priorities for improving Australia's higher education system and supporting our innovation performance.

6. Other policy settings required to achieve key outcomes

6.1. School education policy

School education is the foundation for a world class vocational education and training and higher education system. In view of this, the BCA has proposed that new national teaching standards should be developed and introduced. The

standards should form the basis of a new national approach to recognising and rewarding high quality teaching. This reform should be accompanied by:

- the introduction of national accreditation for teacher education courses at higher education institutions;
- the introduction of a new governance framework that provides principals with greater autonomy;
- the introduction of a nationally consistent, engaging and flexible curriculum that can be customised to the individual learning requirements of students; and
- early intervention to prevent students falling behind.

At its core, the school system must provide the highest standard of teaching and create the best learning environment possible for all students. Every individual – no matter what their background – ought to be able to finish school with the knowledge and skills that will give them the opportunity to choose a rewarding career and to fully participate in the life of their community. This objective is directly linked to improving the performance and outcomes of the higher education system.

In turn, higher education institutions are integral to supporting high quality teaching and learning within schools through their responsibility for educating and training teachers. The role of higher education also involves helping to attract talented and dedicated people into teacher education courses. Since 2005-06, entry standards for many teaching courses in Australia appear to have declined. This is one of the reasons the BCA has recommended the introduction of national accreditation for teacher education courses. In addition, consistent with the emphasis the BCA places on the quality of learning generally, we support improvements to the teacher education and training system, aimed at providing graduates with highly effective teaching skills, and the ability to continue to develop and increase their effectiveness with respect to the learning outcomes of their students.

6.2. Vocational education and training policy

If we are to fully avail both young people and existing workers of the opportunity to develop skills that business requires, a further priority must be to improve pathways between vocational education and training and higher education. It is in the interest

of higher education that this occur because this is a potential source of students into the future, especially those from disadvantaged backgrounds. Both sectors should complement the other with respect to building participation levels, given the clear benefits in terms of employment outcomes and productivity that result from the attainment of qualifications. Therefore, an important area of reform should involve improving the linkages between training and higher education, including the recognition of previous training and study afforded by the respective sectors. Evidence of the operation of pathways between the training and higher education sectors is limited. There is a need for a comprehensive investigation into this issue, and to develop solutions which help develop individual capabilities in the most effective ways.

There is also the opportunity to develop new partnerships and new, more flexible means of providing higher education to existing workers.

Raw employment outcomes for men who complete a vocational education and training qualification are broadly similar to those who complete a higher education degree from entering the workforce until the age of about fifty five. In relation to women, there has tended to be somewhat higher levels of employment outcomes for women who have obtained a bachelor degree or higher qualification compared to those who have a certificate or diploma level qualification⁶. The BCA regards it as important that vocational education and training is supported as an equally valid pathway towards a career as a higher education qualification. There is potentially a role for higher education in strengthening the vocational education and training system where there might be a need to do so. As has been mentioned, given the demand for higher level skills, increased participation levels in the national training system should be regarded as a future opportunity for higher education. An important priority for both sectors should be to reduce the barriers and encourage progression from training into higher education. The goal of increasing participation should be pursued by considering participation levels in both vocational education and training and higher education, not one or the other.

⁶ Laplagne P., Glover, M., Shomos, A., (Productivity Commission Staff Working Paper), 'Effects of Health and Education on Labour Force Participation'. 2007

6.3. Course content

The content of higher education coursework degrees should be regularly updated to reflect both advances in knowledge and the needs of business and other employer organisations including government. The key role played by higher education in developing research should provide the basis for teaching and learning to be based both on research within Australia and overseas. A further requirement should be that the courses taught are relevant to the current and changing needs of business and therefore, course content reflects new developments within industry. This requires effective two way communication and monitoring of developments within industry.

While business values the depth of knowledge that is provided by a high quality degree conducted within a single discipline, the opportunity to have this augmented by gaining a broader understanding of other subject areas is also considered beneficial. This might involve the opportunity to take small components of study outside the area of specialisation.

It is also important that wherever possible, the content of higher education courses contain an international component or perspective that allows students to gain an understanding of how cultural and other influences might influence the practical application of knowledge and skills.

Recent curriculum redesigns at several institutions have highlighted the different and innovative ways in which curriculum and the overall educational experience may be enriched in ways that enhance learning and development outcomes.

6.4. International education

Australia, as a nation, should place a higher value on its role as a leading provider of international education. The most important reason for this is the very significant potential benefits that international education offers. These include the wide ranging benefits that flow from a greater appreciation and understanding of the different cultures that interact through international education. Benefits from international education also flow from the people to people links that are established by governments, business, non-government organisations and individuals.

A further benefit of international education is that it makes a major contribution to Australia's trade performance in the form of export income.

In addition, international students are potential future employees for Australian organisations, or future employees of organisations with which Australian firms will do business. Their relationship with people in Australia has the potential to assist the development of commercial opportunities.

Australia has the opportunity to continue to increase its participation in international education over the next decade and beyond. This is particularly the case in Asia and the Asia Pacific, with the two most important countries being China and India.

Currently, there are impediments to Australia fully realising the benefits of being a major provider of international education. The opportunity for businesses to employ international students once they graduate had not been fully utilised in Australia because of lack of English language skills.

The BCA submits that international students who have inadequate English skills should be able to intensively learn the English language immediately prior to and while undertaking higher education studies in a particular field. The outcome sought by business is that international student graduates should have the English language skills required to make an effective contribution in a workplace in Australia, should they decide to pursue the option of seeking employment here after their studies are completed.

The engagement of international students offers the potential to assist with meeting skills needs. Furthermore, their language and cultural knowledge might contribute to the capacity of a business to build its relations with one or more nations in Asia or the Asia Pacific, recognising that most international students in Australia are from Asian nations.

The BCA also proposes that higher education institutions achieve a greater degree of integration between their international and domestic student bodies. Concerns have been raised over recent months that the experiences of many international students do not involve significant interaction with domestic students or with other Australians and our culture.

There are important objectives that should be achieved from international education other than the provision of an education that meets the objectives described above. Australia's position as one of the largest providers of international education in the world provides this nation with an opportunity to establish lasting and beneficial people to people links. This depends on the higher education system, with the support of policymakers and others, providing for integration between students bodies. The result of greater integration should be the formation of lasting relationships at a number of levels, including that of the institutions through effective alumni programs and informal links. Making a vital contribution to building valuable and lasting relations with other nations, especially nations in Asia, should be a key objective for international education.

The Australian international education organisation, IDP Education has estimated that demand for university places will grow through to 2025.

Given the relatively high number of international students already studying at Australian institutions, opportunities to achieve sustained growth in enrolments will be a challenge.

The future estimates for potential growth also need to be considered against the background of the enormous investments that Asian nations such as China and India are making in higher education. At the same time, other English speaking nations such as Canada are striving to increase the numbers foreign students they educate.

In the light of these challenges, Australia will need to improve its performance as a provider of international education.

There is also an opportunity to more effectively use higher education as a leading form of Australian 'soft power'.

Education is potentially one of the most effective and enduring forms of soft power.

The lessons from the Colombo Plan should continue to inform how we better utilise higher education today. The Australian Scholarships programs are an important initiative. The BCA suggests examining whether we are using these programs as well as we can and whether more can be done in this area.

The priorities for improving our performance in this area should include:

- examining how well we use scholarships and whether we should aim to use more scholarships to target high achieving students in Asia and South East Asia;
- programs to facilitate effective two way engagement with students while they are studying at an Australian institution;
- greater English language tuition and support for international students; and
- increasing the effectiveness of Alumni programs.

6.5. The role of business

Business is interested in the role that it can play, directly or indirectly, in improving Australia's higher education performance. The key institutions are the universities as the providers of the services and governments which determine the policy and regulatory settings.

The BCA envisages business playing more of a role through:

- effective engagement with universities on business needs in terms of skills and other graduate attributes;
- partnerships that support the key objectives for the higher education sector, including high quality teaching, and effective research outcomes including improved collaboration;
- providing workplace experiences for current students to help them build employability skills for their future; and
- by ensuring we are fully informed about the opportunities that are available by employing international student graduates both here in Australia or in their home countries.

6.6. Funding and regulatory arrangements for higher education

There is an acceptance that increasing public expenditure should not be provided to a sector simply because it is engaged in providing an important service. Higher education is no exception to this. It is vital that the higher education sector together with its partners and stakeholders demonstrate the benefits and ongoing value

generated by investments in this sector. At the same time, those involved in the provision of this service need to strive to genuinely improve the quality, efficiency and effectiveness of all investments in higher education.

Publicly owned universities are part of the social infrastructure and should be funded appropriately.

As a nation, we do need to provide greater public investment in our higher education system in return for a focus on improving key outcomes. General public funding levels have not kept pace with competitors from amongst developed nations, and increasingly this is the case with respect to emerging economies.

Furthermore, funding of capital facilities has not matched international competitors, and has resulted in a backlog of maintenance and deteriorating student-staff ratios. Although in relation to funding for capital, it is recognised that the establishment of the Education Investment Fund will help to address the need for this form of finance over the near to medium term.

The present funding arrangements also contribute to uniformity based on a relatively low number of goals, and are not giving encouragement to Australia's higher education institutions to be as vibrant, diverse and responsive to challenges as they otherwise might be.

Similarly, the BCA supports a reduction in the extent of regulatory requirements placed on universities.

In return for increased funding and simplified regulatory arrangements, there needs to be an increased focus on determining, measuring and achieving key outcomes in a way that allows specialisation and diversity.

7. Conclusion

The essential reason business views education as so important for Australia is that the knowledge and skill levels of people are the key to future productivity improvements, and to our innovation performance which will underpin growth and living standards.

Over recent decades it has been ideas, new approaches and the effective application of those ideas and new approaches through innovation that have been the greatest determinants of whether businesses succeed or fail.

While knowledge is of value on its own, its value is significantly limited if it is not applied in a practical way that produces a commercial benefit, or alternatively our society derives social, environmental or cultural benefits from its utilisation. The application of knowledge in these ways depends on the capabilities of individuals and their ability to work collaboratively with others.

Therefore, business regards it as an imperative that we place a greater value on education, including higher education. A highly skilled workforce which has the ability to collaborate and apply new knowledge and ideas in a global context will be essential to the future economic prosperity of Australia.

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