The Hon John Brumby

Chair

Regional Economic Development and Services Review Email: REDS.review@ecodev.vic.gov.au

 May 2015

Dear Mr Brumby

It is with great pleasure that I forward to you Deakin University’s submission to the Regional Economic Development and Services Review.

The challenge of transitioning to the knowledge industry and the digital economy is highlighted almost daily, as businesses struggle to survive in an economic paradigm which turns on its head long accepted ways of doing business. Education and innovation will drive the productivity and economic growth regional Victoria needs to thrive and regional universities generate the new ideas, new technologies and new knowledge which will ensure Victoria gets the skills mix right for the workforce of the future.

Deakin University believes that stronger collaboration between Victoria’s regional universities, government and industry is integral to achieving the outcomes which will drive jobs, investment and growth in regional Victoria.

Deakin has played a leadership role in the regions it represents and our submission outlines a number of initiatives as case examples.

I commend this submission to the Review and the recommendations contained within our responses to the Terms of Reference.

Yours sincerely



Professor Gary Smith

## Deputy Vice-­‐Chancellor (Global Engagement)

# Deakin University Submission

**DEDJTR Regional Economic Development and Services Review**

11 May 2015

# Preamble

Deakin University is pleased to contribute to the Regional Economic Development and Services Review. Victoria’s regional universities unlock the human potential of their region and they drive social, economic and cultural development in the communities they serve. Universities are catalysts for innovation, creativity and productivity, driving jobs, new business opportunities and importantly – generating optimism in their region.

Deakin supports the Minister for Regional Development’s commitment to review Regional Development Victoria’s strategic priorities to drive jobs, investment and growth in regional Victoria.

New industries are emerging and traditional industries are shrinking – developing an educated, nimble workforce will be critical to sustaining strong economic growth. To meet future workforce expectations, Victoria will need delivery models that are sufficiently flexible to accommodate an increasingly diverse cohort and swiftly changing workforce requirements.

In a fast changing and unequivocally global knowledge economy, effective regional planning will require new thinking and a long term vision. We must look beyond jobs targets and focus on the execution and achievement of deliverables, a shift which will necessitate greater clarity and accountability.

Deakin University believes that strengthening collaboration between Victoria’s regional universities, government and industry is integral to achieving the outcomes which will drive jobs, investment and growth in regional Victoria.

Deakin has played a leadership role in the regions it represents and our submission outlines a number of initiatives as case examples.

Deakin’s responses to the Review Terms of Reference follow.

# Deakin University’s responses to the Terms of Reference

## Identify best practice, evidence-­‐based policy directions to foster regional growth and job creation

## Universities’ role in driving regional growth and knowledge economies

Victoria’s regional universities have a key role to play in directly driving regional growth. They provide the platform for open-­‐ended conversations about industry development pathways and new technological and market opportunities. Universities partner with government and employers to improve competiveness and build new markets and they have an important role to play in developing entrepreneurial, innovation and leadership capability in their region; a role as catalysts for investment. The education and training sector also has role in new job creation, assisting industry in the regions to grow their business through increased productivity and enhanced workforce capability.

In a fast changing and unequivocally global knowledge economy, effective regional planning requires new thinking and a long term vision. We need to look beyond jobs targets and pay attention to an optimum mix of employment profile (age, gender, qualification and skills requirements). We need to focus particularly on areas where there are the resources to support economic growth. And critically we must focus on the implementation of great programs, looking beyond initial planning and start up. Universities have two of the most valuable assets in our changing economy – educated, skilled people and new ideas.

The focus on regional planning needs to shift more to the execution and achievement of deliverables. This shift will require greater role clarity and accountability. Deakin University is very well positioned to take a leadership role in the regions it represents. The effectiveness of this will be greatly enhanced if a new regional development governance model supports this leadership role and provides funding.

**Case example 1 – Deakin’s direct contribution to the Geelong and Warrnambool economies**

Deakin University's Waterfront and Waurn Ponds campuses are worth $426 million annually to the Geelong region's economy. A 2014 report by Deloitte Access Economics shows the University contributes about $313 million a year to the local economy while student expenditure adds a further $112 million. The University's Geelong operations account for 5.3 per cent of the $8 billion local economy. Representing about 4.3 per cent of the Geelong region's total population, Deakin students pay for accommodation, food and transport and in 2013, each domestic undergraduate student spent on average over $23,600 on general and study-­‐related expenses. Deakin University is one of the Geelong region's largest employers, creating 3,124 full-­‐time equivalent jobs in the local community, including 1,539 directly at the Waterfront and Waurn Ponds campuses.

Deakin University has played a pivotal role in Warrnambool and the surrounding region, driving economic growth and social development in the region. Deakin’s operations contributed $39 million to the Warrnambool economy with student expenditure contributing an additional $14 million. The Warrnambool campus’s economic contribution represents 2.5 per cent of the local economy, which had gross regional product of approximately $2 billion in 2012-­‐13, and is equivalent to approximately 384 full-­‐time equivalent (FTE) jobs.

Deakin believes it can make an even stronger contribution to the region and has invested in a new role, CEO Warrnambool 2020. The University will develop a new strategy and models to increase its outcomes and performance in the region. A key component will be to ensure our products meet local industry needs and assist traditional industries in remaining competitive and support new and emerging industries.

The University will provide leadership in the development of a future workforce plan for the region and build new models of regional education. This may include the creation of new education precincts that bring together secondary schooling, TAFE and higher education underpinned by seamless transitions with strong industry input and potential physical presence.

An equally important element is the university’s intangible contributions to Geelong and Warrnambool. The University’s commitments to high quality research, innovation and to sustainable industry engagement provides a climate for growth, as well as providing the tools by which high-­‐wage, high-­‐skill jobs are being created in the Geelong and Warrnambool regions.

Further intangible benefits arise from the very significant and material support Deakin provides to a host of organisations and activities in its communities. In addition to the major support the University provides to key community groups including the Geelong Performing Arts Centre, the Deakin Community Cats Centre at the Geelong Football Club, the BioLab at Belmont High School, the Geelong Chamber of Commerce, Committee for Geelong and G21 activities, it is a sponsor of many smaller activities that enable a community to thrive. Deakin is a major sponsor of the arts in Warrnambool, including the Lighthouse Theatre and the Hamilton Performing Arts Centre, and works closely with the Warrnambool Art Gallery to promote cultural and social opportunities throughout the south-­‐west district.

What links great cities to each other is trade, commerce and investment, but what differentiates them is culture. Culture makes a city appealing to people and hence to the businesses that employ them. Deakin University recognises its responsibility to foster knowledge economies and understands that in a knowledge economy, the ability to attract and retain creative talent is a critical ingredient for economic growth.

**Case example 2 – Deakin leverages its research and development capacity to directly benefit the regional economy**

Over the past ten years, Deakin University’s Research division has developed a substantial innovation precinct at its Waurn Ponds campus to generate ideas, new technologies and new knowledge and drive innovation and productivity in the economy.

One example of this is the Australian Future Fibres Research and Innovation Centre (AFFRIC) which is positioning the region to transition towards more advanced and competitive forms of manufacturing. AFFRIC’s work led to the development of Carbon Nexus, the world’s leading carbon fibre research facility. This has, in turn, secured Geelong as the location for Carbon Revolution, the world’s leading producer of carbon fibre wheels for global export markets. Carbon Revolution is located within the Geelong Technology Precinct and employs over 100 full-­‐time production workers, many from traditional manufacturing trades such as the car and aluminium industries. Other companies are locating to the campus for similar reasons providing the green shoots of a new carbon fibre based industry.

A world class health precinct is emerging in Geelong through development of health training and research facilities at Waurn Ponds and Barwon Health and construction of the new +200 bed Epworth Geelong Hospital.

The development of the innovation precinct at Waurn Ponds has led to the creation of over 1,000 jobs – a clear indication of the value of research in stimulating regional economic growth. Epworth HealthCare and Carbon Revolution’s decision to locate within or adjacent to the Waurn Ponds campus is a direct result of the value of situating an education and innovation precinct in a regional capital.

The next planned phase of development within the innovation precinct aims to accelerate job creation and the commercialisation of research. ManuFuture Geelong will be a state-­‐of-­‐the art product incubator that links Deakin Research capabilities, local industry and the Centre for Advanced Design and Engineering Training (CADET). The University is currently seeking funding support from the Commonwealth and Victorian Governments for this investment that will create 118 direct jobs and another 299 indirect jobs for a total regional boost of 417 ongoing jobs.

**Case example 3 -­‐ Regional health: Regional Post Graduate Medical Training**

There is a continuing and severe misdistribution of doctors in Australia. There are 250 doctors per 100,000 residents working in rural and regional Australia but more than 400 doctors per 100,000 residents working in Australian capital cities, one of the highest rates in the world.



*Medical practitioners: FTE per 100,000 population (Australia’s Health 2012, AIHW)*

Over the last decade there has been a major expansion of Australian medical schools. Graduates of new regional medical and rural clinical schools are now completing internships and the second and third years of postgraduate training in regional hospitals and general practices but the rural and regional workforce shortage persists. This exemplifies the problem regional Victoria faces: it is not a shortage of trained doctors per se but a shortage in regional Victoria. One of the major causes of this shortage is the absence of opportunities for postgraduate medical training. With the exception of general practice, postgraduate training opportunities in regional Australia are extremely limited. Specialty training takes four to seven years to complete and regional graduates who want to train in surgery, internal medicine, psychiatry, obstetrics and other specialties are forced back to capital cities in their late twenties where they marry, buy a house, begin a family and are locked into city life. Their training has a subspecialty focus and they lose the generalist skills needed for regional practice.

Expanded regional general practice training and establishment of regional specialty training programs are urgently required to keep rural and regional graduates where they want to work; the rural workforce shortage cannot be solved without regional postgraduate training programs1.

Undergraduate medical training is in hand – there has been a major expansion of Australian medical schools over the last decade. In 2005 1,320 domestic and 250 international students graduated from Australian medical schools. Projected numbers for 2015 are 3,177 domestic and 555 international graduates. Graduates of new regional medical and rural clinical schools

1

This was a key recommendation of HWA’s Health Workforce 2025, the recent Australian Government Review of Health

Workforce Programs (the Mason report) and the Victorian Department of Health’s Regional Medical Workforce Strategy.

are now completing for internships and the second and third years of postgraduate training in regional hospitals and general practices but the rural and regional workforce shortage persists.

There is a solution…..

Victoria’s medical schools have developed a proposal to work with our primary care and hospital partners to develop high quality, sustainable regional postgraduate training programs in general practice and key medical specialties, the Victorian Regional Medical Training Network. These programs will be based on a hub and spoke model centred on existing Rural Clinical School facilities in Geelong, Ballarat and Warrnambool; Bendigo and Traralgon; and Shepparton and Wangaratta. Regional graduates will be able to complete most or all of their training in regional settings. They will develop and maintain the generalist skills needed for rural general practice, general medicine, general surgery, paediatrics, psychiatry, anaesthetics and emergency medicine.



*Deakin-­‐Monash-­‐Melbourne plan to expand regional postgraduate training places*

## Identify the approach to regional service delivery best able to deliver regional growth and job creation. This will include:

## Aligning education and training to Victoria’s workforce needs

Deakin supports a future skills driven sector that aligns education with the six key growth areas identified by the Victorian Government for economic growth. As skill requirements move from old manufacturing to a knowledge economy, future work requirements can be expected to include network-­‐oriented, project-­‐based and increasingly technology-­‐intensive work.

The education skills nexus will become increasingly important with an interdisciplinary approach to innovation in the workplace and the growing influence of technology central to training and delivery. Greater levels of consultation with industry is essential to better understand future job opportunities and future skill requirements. Models should be developed and incentives provided to foster industry participation.

Building skilled communities begins long before students commence TAFE or university, and regionally-­‐based universities have a particular relationship with the schools in their regions. In Geelong, as is the case in many regional capitals, there is a higher percentage of lower socioeconomic status students and significantly lower retention rates and participation in vocational and higher education. Universities such as Deakin are well placed to contribute to an improvement in participation and the economic benefits that flow from that participation.

Through the Deakin Engagement and Access Program (DEAP), Deakin works with students from grade 4 to year 12 to build aspirations of post-­‐secondary education as both a desirable and an achievable goal. Deakin’s unique community-­‐based Indigenous programs, enable Indigenous students to pursue study without leaving their community for long periods. Deakin is the third largest provider of Indigenous education in Australia and with 715 students, by far the largest in Victoria.

The 2014 report from Australia’s Chief Scientist2 notes that 75 per cent of the fastest growing occupations will require STEM skills and knowledge. Deakin’s Skilling the Bay Successful Students project is designed to increase the capacity of secondary schools and science teachers. The project builds on Greater Geelong’s strengths in research, industry, and technology to leverage Geelong-­‐based world class research centres (Australian Future Fibres Research and Innovation Centre, CSIRO Australian Animal Health Laboratory, CSIRO Materials Science & Engineering).

**Building skilled communities case example 1 – Deakin’s Centre for Advanced Design in Engineering Training**

Deakin University's Centre for Advanced Design in Engineering Training (CADET) will provide some of the best future-­‐focused engineering and design facilities in the Australian university sector and in regional Australia. CADET will enable students to explore endless possibilities through desktop manufacture and computer modelling, virtual reality environments, 3D printing and world-­‐leading rapid prototyping capabilities. Students will gain practical experience in next generation computer controlled manufacturing systems and processes allowing them to experience tomorrow's manufacturing today. The CADET on the Move initiative will take Deakin’s research and learning capabilities to regional Victoria. It will support STEM development and engagement with facilities that are normally well beyond the reach of most SMEs and regional educational institutions, participants will gain practical experience in next generation computer controlled manufacturing systems and processes allowing them to experience tomorrow's manufacturing today.

**Building skilled communities case example 2 – Deakin University’s partnership with the Australian Bureau of Statistics**

The decentralisation of government employees offers a number of opportunities, but as this submission argues, when considered in terms of university contributions to regional resilience and sustainability, the greatest utility of such initiatives lies not so much in short term training opportunities for one or more universities as in leveraging such employment relocation to maximise job security and private sector economic growth.

Equally, the relocation of Commonwealth employees offers equivalent opportunities to state programs -­‐ often the potential gains can be even greater. A case in point is Deakin University's partnership with the Australian Bureau of Statistics, which will be establishing a Geelong facility in the next year. Concentrating on the initial stages of data collection and organisation, this facility and its staff will obviously contribute directly to the Geelong economy. But more significantly in the long term, the research partnerships, the development of new statistical methodologies with international applications and the extension of this partnership to embrace support for statistical and economic modelling in emerging Pacific and Asian states, translating into international

2 Office of the Chief Scientist, 2014, Science, Science, Technology, Engineering and Mathematics Australia’s future. Australian Government, Canberra.

student programs and training, will all precipitate new employment opportunities and jobs growth, with the benefits accruing to ancillary private sector partners.

**Building skilled communities case example 3 – enhancing digital connectivity**

Deakin University understands that digital connectivity is key to boosting both retention rates and preparing regional students for the complexity of future job growth. Deakin has worked with local government, schools and industry to develop two innovative digital connectivity projects to leverage the benefit of the University’s AARNet network and the Victorian Government’s $10M VicFibre investment for Warrnambool through DSDBI.

The University’s e-­‐Solutions Division has consulted widely to design cost-­‐effective Digital Learning Hubs that will operate at greater speeds, lower costs and many years in advance of the National Broadband Network in both cities.

In Geelong, the Hub will connect 40,000 students in 24 local schools and Council’s local libraries. In Warrnambool, 4,000 students in five local schools will benefit. Business plans are currently being developed to seek funding support for both projects through RDV.

The need for innovative new delivery models to prepare for the jobs and skills of the future Developing an educated, nimble workforce is critical to sustaining strong economic growth. New industries are emerging and traditional industries are shrinking. UK researchers Frey and Osborne3 predict that almost 47 per cent of jobs will be computerised within one or two decades, and Deloitte’s 20144 report on global human capital suggests skills will have a half-­‐life of only –5 years.

We can expect to see an older cohort as students re-­‐enter education multiple times to keep pace with changing workforce skill requirements. Education must be sufficiently flexible to meet the needs of mature age students juggling work and family as well as school leavers from diverse backgrounds and with divergent interests and skills.

We can expect to see an increasing demand for a high skill, postsecondary qualified workforce with reduced numbers of low skill jobs. The McKinsey Global report5 tells us the world faces a potential shortage of 38-­‐40 million high skill workers (13 per cent of demand) and a potential surplus of 90-­‐95 million low skill workers (10 per cent of supply).

Deakin is exploring new tertiary education models with Bendigo Community Banks, TAFE partners and local governments to provide flexible alternatives to traditional campus based education.

Deakin’s ‘cloud campus’ provides personalised interactive learning wherever students are located and on multiple devices (mobile, tablet and laptop) – education at your own pace and in your own place. Whole of community regional education plans are being piloted in Buloke/Loddon regions along with local councils, TAFE and industry groups, while a pilot place-­‐based model is being developed in Bendigo with the Bendigo Manufacturing Group, AIG, Community Foundation for Central Victoria, Bendigo City Council and Bendigo TAFE.

Deakin’s partnership with TAFEs are providing seamless pathways between TAFE and university. Over 2,000 students commenced at Deakin with a TAFE award in 2014, up from 1,800 in 2013. The combination of TAFE and university study provide a mix of vocational and higher education

3

Frey. BF & Osborne. M A 2013 *‘The Future of Employment: how susceptible are jobs to computerisation*? Oxford Martin

programme on the Impacts of Future technology. Oxford September 17

4 Global Human Capital Trends 2014: Engaging the 21st century workforce Deloitte 2014

5 India’s Tech Opportunity: Transforming work empowering people<http://www.mckinsey.com/insights/high_tech_telecoms_internet/indias_tech_opportunity_transforming_work_empow> ering\_people

skills highly regarded by employers. It facilitates a staged approach to learning much valued by ‘second chance’ learners as well as school leavers requiring additional support.

Deakin University’s Teach for Australia pathway is a Federal Government initiative designed to recruit and train talented graduates from industry to teach in disadvantaged communities. It is a benchmark for quality school-­‐based teacher education with benefits both for the industry/education nexus and for its ability to bring top teaching talent to regional areas that might otherwise struggle to attract teachers.

# Conclusions and recommendations

Universities are catalysts for innovation, creativity and productivity, they foster jobs growth and new business opportunities; and they provide industry with the skilled and productive workers necessary to capitalise on the opportunities of the future. Strengthening collaboration between Victoria’s regional universities, government and industry is integral to achieving the outcomes which will drive jobs, investment and growth in regional Victoria.

Deakin University recommends that:

* + 1. The Regional Economic Development and Services Review incorporates Victorian universities with a strong regional presence and commitment into strategies for regional growth and job creation.
			1. That this be achieved by including universities in any governance structure adopted for the delivery of such strategies.
		2. Any program or authority established by the Victorian Government should make specific provision to facilitate collaboration between universities and regional industry to facilitate innovation and job creation.
		3. Any regional governance model or mode of delivery be required to establish a transparent, regular methodology to ensure that strategic targets are being achieved and that the appropriate level of collaboration between regional partners has been established.
		4. Universities be included as eligible applicants for funding under any regional support or jobs growth program established by the Victorian Government.
		5. In regard to provision of medical services, that the Victorian Government work with existing Victorian university medical schools (Deakin, Melbourne and Monash) to establish a program of collaboration between these universities and their primary care and hospital partners to develop sustainable regional postgraduate training programs as a means of improving the retention rate of doctors in regional Victoria.
		6. Support be provided to universities developing innovative regional skills delivery in areas of the economy important to Victoria’s strategic interests i.e. manufacturing, health and education services.
		7. When considering the relocation of public sector agencies to regional Victoria, the Victorian Government include universities in this planning to ensure that the economic and educational benefits of such transfer are maximised. Universities’ involvement should extend beyond the relatively low value services such as the provision of additional staff training and instead, focus on the integration of such state agencies and jobs within a comprehensive educational, economic and social framework.
		8. The Victorian Government pilots the development of an educational precinct on a university campus in a sub-­‐50,000 regional city (such as Warrnambool) to model one pathway from school to university including vocational training. This model will connect all students and institutions physically and digitally deploying traditional learning and premium cloud delivery with a focus on the skills and jobs of the region.
			1. These regional educational precincts, in collaboration with universities, will develop strategies to enable the development of platforms for the delivery of “cloud campus” services to small regional and remote communities.