Professor Ian Town, Deputy Vice-Chancellor
Tel: +64 3 364 2542, Fax: +64 3 364 2856, Email: ian.town@canterbury.ac.nz

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Digital Strategy Response from the University of Canterbury

General Comments

1.0 The University of Canterbury is the main provider of tertiary education in the central South Island. It enjoys an excellent academic reputation with a place in the top three Universities in the 2006 PBRF rankings. The University is research intensive and has adopted a number of advanced technologies to improve the learning infrastructure for staff and students.

2.0 Overall the University applauds the investment in a digital infrastructure for New Zealand and welcomes the intent of the next phase as proposed in the strategy document. Considerable ongoing Government investment will be needed to ensure success.

3.0 The University has worked closely with the Canterbury Development Corporation and the City Council to promote a local digital infrastucture that supports both academic and commercial opportunities.

4.0 The University is committed to the intent of a digital New Zealand and will contribute directly and indirectly to its success in a variety of ways through learning, research, postgraduate education, stake-holder engagement and through digital respositories.

The University is also keen to play its part in ecconomic transformation through contributions to the local economy and research and development partnershps with New Zealand companies.

5.0 **On Connection**:

5.1 We note that finally there are robust moves to get more fibre in the ground and to make true broadband available to more New Zealand homes, schools and businesses.

5.2 The University has supported implementation of the Christchurch local fibre loop which will allow connectivity between the University and the CBD.

5.3 E-research in New Zealand is in its infancy but we have a lot to gain. The University has been at the forefront of develoments such as grid computing, e-learning via the Access Grid and the use of High Definition Video Conferencing to support research collaboration. Within New Zealand and increasingly world-wide researchers can collaborate virtually reducing the

need for expensive travel. Middleware solutions for visualisation and data manipulation on-line are required.

5.4 The University is an investing member of KAREN and has supported data storage repositories for the BestGrid project. Through CONZUL the University is at the forefront of the data respository project.

5.5 The University supports the moves towards on-line data base access to publically funded research data, although it should be recognised that considerable resource will be requiered if such an apporach is to succeed.

5.6 The report is insufficiently detailed in regard to grid computing and supercomputing, the latter not being mentioned at all. Grid computing has not realised its promise in New Zealand as yet and is not a substitute for peak computing power required in the lifes sciences and engineering. To address this the University of Canterbury has invested in a multi-million dollar High Performance Computing facility BlueFern™ in partnership with the MacDiarmid Institute and Victoria University of Wellington. To date we have over 80 researchers working on-line via KAREN from throughout New Zealand. As there is no comparable Blue Gene facility in Australia at present we are offering access to Australian reserachers who are able to access the facility via R-net and KAREN.

5.7 The Government needs to to urgently consider subsidising access to the University of Canterbury BlueFern™ Facility which has capacity to support New Zealand researchers in the life sciences, engineering, molecular medicine and bioinformatics amongst others. Such a model would emulate the collegial approach taken at the Victorian Partnership for Advanced Computing in Melbourne.

5.8 Wireless networks should be established at all Universities and within all CBDs.

6.0 **On Confidence:**

6.1 New Zealand remains very short of ICT graduates. The University will be contributing to this through NZi3, New Zeland's ICT Innovation Institute. A new building and five new research themes will increase the number of business savy graduates.

6.2 The University will be developing undergraduate and postgraduate papers in advanced technologies to complement existing computer science offerings. In addition a postgraduate diploma in advanced computing will be offered in 2009. Curiously this initiative does not rate a mention on page 22 which is surprising.

6.3 The University's BlueFern™, facility contributes to confidence and competence of New Zealand researchers by introducing first world levels of High Performance Computing. This benefits New Zealand industry where application of advanced computing and locally developed expertise enables competitive advantage. Two important local examples of national significance

are in the sustainable wind energy sector and the ability to improve value in the wood industry.

6.4 KAREN and BlueFern™ supercomputers builds New Zealand researchers confidence to stay in New Zealand to do their research.

7.0 **On Content:**

7.1 The University applauds the direction towards digital New Zealand content as a rich resource of knowledge for all New Zealanders. The Kiwi Research Information Service is of particular importance to the teritary education sector.

7.2 The University notes the commerical imperative around economic transformation. Graduate profiles will ensure a culture of entrepreneurship pervades science and engineering teaching to ensure that graduates are aware of commercialisation options and the approach to setting up a business. This will be assisted by the Tertiary Education Commission funding to UC through the Encouraging and Supporting Innovation fund.

7.3 We note the major investment made in respect of Right Hemisphere and Nextspace. A more explicit mandate for University collaboration might help leverage that investment along with support for such a facility in the South Island. The University is working with its partner IBM New Zealand to establish a visualisation facility at the University. Again some co-investment by the Government would fast-track this initiative.

7.4 The University welcomes the e-Government initiatives which have the potential to reduce compliance and overhead costs in the teriary sector. The University is supporting the project to establish a single research portal for research applications to various central agencies.

8.0 **On Collaboration**:

8.1 The University welcomes the increasing emphasis on collaboration within the tertiary sector and has made a commitment to this apporach. The resources of KAREN can be harnessed for both teaching and research.

8.2 The Government should be mindful that there will need to be further central investment in KAREN to avoid an undue burden on users which would be counterproductive. The same argument applies to advanced computing where the Governement should look at subsidising the capital and operating costs as a contribution to the knowledge society.

8.3 The University already leverages KAREN to enable collaborative use of advanced computing techniques. Digital technologies now facilitate a community of researchers collaboration on projects that include including Platypus genetics, Antarctic neutrino research and processing millions of laser wood scans to meet demands of overseas export markets. This is how we have put the Digital Strategy into action but it needs further investment to grow.

8.4 Through collaboration between BlueFern™ and REANNZ the University has been able to work with the Government to build a showcase of e-Research for the Asia Pacific Advanced Networking Conference. This will demonstrate New Zealand's successful use of networking and computing skills and disseminate ideas for future collaboration.

Professor Ian Town
Deputy Vice-Chancellor

May 2008