New Zealand universities of the future

REPORT TO THE TERTIARY EDUCATION COMMISSION

18 September 2007

This report was prepared independently for the TEC to help promote discussion about the future of New Zealand's university sector. As such, the report does not represent government or TEC policy or points of view.

Executive summary

1. Universities more than any other part of the tertiary system need to be seen as part of a global network of education providers. Universities are being shaped by powerful global forces characterised by increasing international students, global rankings, increasing competition for academic staff and research students, a growing range of alliances and relationships, the emergence of India and China as powerful players and the prospect of new global rules and regulations.
2. The international standing of our universities will matter and it will be important to be more explicit about the desired international positioning of New Zealand universities. For a small country like New Zealand the overall reputation of the system will be just as important as the standing of a single institution.
3. Universities, while still offering broad based education, must become more strongly centred on their areas of research strength and those strengths need to be assessed in relationship to international benchmarks and standards.
4. Universities in New Zealand are starting to differentiate amongst themselves. This will need to continue and at the heart of this differentiation will be comparative research strengths.
5. This suggests that over time the research intensity across universities will vary – possibly significantly – and across the system the ratio of postgraduate students to other students should increase. It also highlights the importance of each university having a clear strategic view of its strengths and its overall positioning within the system.
6. The emphasis on postgraduate capabilities should be seen as one part of an overall lifting of the qualification profile of New Zealanders to higher overall qualifications as an integral part of raising New Zealand's human capital.
7. A more differentiated system – and within it more differentiated universities –, carries with it the need for more focus on the importance of a strongly networked tertiary and university system. Stronger domestic collaboration will be important in areas such as multiple pathways for students, more innovative ways of designing and delivering teaching, and the development of a more

global and distinctive quality network of university provision that contains elements that are distinctive to New Zealand. This also means that it will be important to encourage the development of "system" leadership and strategies that harness the collective capabilities and strengths of the system to sit alongside those of individual universities.

8. There are a number of influences pointing to the need for increased investment in universities in the future arising from lifting the overall qualification profile of graduates across the tertiary system, a competitive global labour market for teachers and researchers, increasing participation for some groups, and the importance of investment in research.

9. But higher funding by itself will not guarantee higher quality, better outcomes or high access. Ensuring the spending is as effective as possible in delivering key outcomes is central.

10. Improved outcomes in four areas seem essential, namely:

    - improved student learning outcomes
    - high quality research outcomes
    - the International standing of New Zealand's universities
    - increased contribution by universities to New Zealand's future development.

11. In all four areas it will be important to keep working to develop much greater agreement and understandings about key indicators of system performance, how these inform investment decisions at different levels in the system, and how such investment can be expected to lead to better outcomes for New Zealand and New Zealanders.

12. The recent tertiary reforms provide a good framework for focusing on getting better system outcomes and targeting investment onto these. But scope clearly exists to refine policies in ways that can better support and align to the system outcomes being sought. A number of areas for further policy exploration are identified.

Introduction

"The university is no longer a quiet place to teach and do scholarly work.....It is a big, complex, demanding, competitive business requiring large-scale ongoing investment[1]."

13. Universities play a very important role in the development of a country through the development of graduates, their research, their international linkages, and their relationships with different communities of interest.

[1] Skilbeck, M,(2001) *The University Challenged – A review of International Trends and issues with a Particular Reference to Ireland*; Higher Education Council, Ireland I.

14. Globally universities are in a state of change facing unprecedented pressures from:

- rapid growth in the demands for tertiary education
- the globalisation of universities that has seen increased flows of international students, increased international competition for academic staff, international research alliances, and international rankings of universities assuming considerable influence
- changing and rising expectations and demands from Governments, business, families and students
- pressures from government budgets and policy changes
- impacts of new information and communication technologies (ICT).

15. New Zealand has good universities. New Zealand university graduates are internationally well-regarded. Our university system has an international standing that seems commensurate, if not higher, with many OECD countries once the relative size of the economy is taken into account.

16. Universities have responded positively and in a number of ways to this rapidly changing environment. However, standing still is not an option with ongoing change being inevitable.

17. The tertiary reforms require a performance driven system with their focus on quality and relevance. The reforms will allow for greater differentiation between the different parts of the tertiary system and for greater differentiation within each distinctive area.

18. This report considers the future evolution of the university part of the New Zealand tertiary system. It identifies some key drivers shaping this evolution and the links to areas of capability and performance implied by these trends.

19. The report identifies and considers some of the key implications for policy design that arise from these considerations including the different ways in which greater differentiation among New Zealand universities could occur.

20. The report, while identifying some key future choices and options facing New Zealand universities and policy makers, does not look to make firm recommendations. Rather its main intention is to identify some key questions, choices, judgements and trade-offs that lie ahead for policy makers and for decision-makers in universities.

21. In doing this it looks to support a more informed and intensive dialogue with universities over their future evolution, the key aspects of performance that should drive both policy and decision-making across universities and priorities for future investment.

22. The report begins with a brief overview of the evolving global context in which our universities are operating. It identifies issues being grappled with in other countries. It discusses the different ways in which universities, higher education systems and policies are responding to these.

23. The implications of these influences for the future of New Zealand universities are then discussed and some important future characteristics of the New Zealand system identified.

24. Four broad outcome areas are then identified as being important objectives for New Zealand universities, the New Zealand university system and for policy. These are:

- student outcomes
- research outcomes
- the International standing of New Zealand's universities
- contribution to New Zealand's future development.

25. In each of these areas, some more specific outcomes and their implications for policy choices are then discussed.

Global context

The international forces shaping higher education are increasing in their power and influence.

26. Universities are increasingly operating within a global context where globalisation is described by Held[2] et al as a "widening, deepening, and speeding up of world-wide interconnectedness".

27. This is being reflected in both intensified competition and increasing collaboration between universities. Many manifestations of these can be seen in the growing international flows of students, the importance attached to international rankings, the growing numbers and forms of cross-border alliances between universities and the widening range of global research alliances/linkages.

28. Cross-border education has grown rapidly in terms of the numbers of international students studying outside their countries of origin. The OECD[3] estimated that in 2003 the numbers of students enrolled outside their countries of origin exceeded two million, which was 50 percent higher than five years earlier.

29. Vincent-Lancrin[4] observes that partnerships have "boomed over the last decade in the higher education sector". He comments that while academic partnerships have increased significantly, these are hardly new. What is new is the inclusion of a greater number and variety of partners such as other education providers and corporations.

30. Behind these trends are forces relating to the increasing mobility of skilled labour, the impacts of technology, the economic potential of research in a

[2] Held, D., McGrew, A., Goldblatt, D. & Perraton, J. (1999) *Global Transformations*. Stanford: Stanford University Press.

[3] OECD 2006, Higher Education Ministerial Meeting, Athens.

[4] Vincent-Lancrin, S, (2004): *Building Futures Scenarios for Universities and Higher Education: an international approach*; Policy Futures in Education, Volume 2, Number 2.

knowledge age, and the domestic pressures on universities associated with increased participation, increased competition and constrained finances.

The movements of international students across countries will keep increasing.

31. Looking ahead, the cross-border flows of international students seem certain to increase further. A number of drivers and influences will be operating, including:

- continuing high demand for places from countries with restricted access to universities, universities yet to reach international standards and the demand for English as the medium of instruction
- universities in advanced economies proactively seeking overseas students and competing, in particular, for top students
- in Europe, the development of a European Higher Education Area is designed to facilitate mobility by harmonising qualifications and quality assurance practices
- access increasing on a global scale with greater differentiation between universities on the basis of quality and reputation, more students actively seeking places at institutions or in countries that will give added prestige to their qualifications
- universities creating enriched learning for their students, as a CoRE part of their "offering" to students, by providing access to teaching and research in other countries.

  For example, National University of Singapore[5] has established overseas colleges in entrepreneurial hubs around the world to nurture the spirit of enterprise and help students develop global outlook and aspirations. One example of this is a university level incubator in California designed to facilitate smooth entry for start-ups venturing into the USA. Some 50 students a year are accepted.

  Auckland University[6] in its Strategic Plan states that it is looking to provide overseas opportunities of at least 2000 students annually.
- globally, many people are currently qualified to enter but unable to access a university. These numbers are probably greatest from developing countries and countries in transition. Duderstadt[7] estimates that in 2000, 30 million fell into this category and by 2010 the numbers could have increased to around 100 million
- India and China's heavy investment in tertiary education is likely to have a huge influence on university education globally.

[5] National University of Singapore: Enterprise Centres.

[6] Auckland University 2005, Strategic Plan 2005 – 2012.

[7] Duderstadt, J.J, (2000); The Future of Higher Education in Knowledge-Driven, Global Economy of the 21st century; Toronto.

32. Offsetting the influences that will increase international flows will be institutional and policy responses designed to encourage students to study in their country of origin.

33. These can be seen in the growth of courses being offered with English as the language of instruction in non-English speaking countries. In China, a priority is being given to increasing access and building modern high quality universities.

34. Nonetheless, all the influences suggest that students will have many more global choices and options open to them with competition for such students being strong.

35. However, it also suggests some important qualitative changes in the nature and drivers of the flows with:

- flows from countries who have been major exporters of education likely to become two-way as domestic students increasingly take advantage of offshore study options
- the quality of learning opportunities, overseas experience, and likely learning success becoming more important determinants of student decisions
- competition for research and postgraduate students likely to increase in intensity. This will tend to drive down revenue earning opportunities and create pressures to extend the "subsidies" available to such students. The introduction of scholarships for top overseas students and the treating of PhD students as domestic are examples of this in New Zealand
- increased flows of students bringing with them a greater focus for curriculum alignment across institutions and alliances along with effective recognition of cross-border learning.

36. Eckel, et al[8] discuss a trend amongst American colleges and universities to leverage their curricula internationally through joint ventures in order to achieve a combination of revenue generation, prestige and academic quality.

- A growing international focus on the "rules" that should govern flows of students seems inevitable. For example the OECD[9] in collaboration with UNESCO has produced "Guidelines for Quality Provision in Cross-border Higher Education". This is also part of WTO and GATs negotiations. At the heart of such developments will be concerns to protect the consumer interests of students.

[8] Eckel, Peter D, Green, Madeline F., Affolter-Caine B; (2004), *Curricular Joint Ventures: a new chapter in US cross-border education?* Policy Futures in Education, Volume 2, Number 2, 2004.

[9] OECD (2005), "Guidelines for Quality Provision in Cross-border Higher Education"; OECD, Paris.

Research

37. With the exception of a relatively small number of elite and well-endowed universities, the vast majority of universities remain highly dependent on public investment as a major source of research funding.

38. Research is becoming more globalised as evidenced by:

    - the increasing mobility of personnel, doctoral students and short-term visits
    - rapid growth of cross-border authorship
    - the growing numbers of English language disciplinary publications
    - mMore research involving collaboration a cross-borders.

39. Internationally, research output and leadership continues to be dominated by the USA. It accounts for nearly a third of the world's scientific papers. Its universities dominate global rankings. It attracts almost half the world's postgraduate students from other countries.

40. However, growing cross-border research collaboration, as Marginson[10] states, is increasingly making the output of such research more of a "global" than a "national" public good.

41. The global labour market for academics, especially for those with good research performance, is becoming more competitive. This implies upwards pressures on the real salaries and non-salary components of such people.

42. Marginson[11] also observes that with every research university part of a single world-wide network the world leaders in a field have an unprecedented global visibility and power.

43. Universities in their planning seem very conscious of this. There is a move away from an emphasis on breadth to one that much more concentrates on strengths.

44. For example Manchester University[12] in its 2006/07 strategic plan states: "While continuing to support all researchers conducting internationally significant research, the University will identify and give priority to fields of research in which it has the potential to develop such international research leadership."

Global rankings will increase in influence as major drivers of university decision-making.

45. While global rankings are seen as flawed, they are having considerable (and increasing) weight and influence. The two rankings that are most influential are those prepared by the Shanghai Jiao Tong University and the Times Higher Education.

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[10] Marginson S, (2004) "*Competition and Markets in Higher Education: a 'glonacal' analysis"*, Policy Futures in Education, Volume 2, Number 2.
[11] Ibid.
[12] University of Manchester(2006), *Towards Manchester 2015, The Strategic Plan of Manchester*, University of Manchester.

46. Both favour English speaking research intensive universities with strengths in sciences. Their emphasis on research performance reflects the fact that comparable research performance is much easier to internationally assess than is the quality and outcomes of teaching.

47. The Shanghai places greatest weight on publication and citation performance. It also recognises the proportion of the 250 to 300 leading researchers in a university as well as the location of winners of Nobel Prizes and Fields Medals in Maths.

48. The Times Higher looks to take a broader view of reputation by undertaking and placing considerable weight on an opinion survey of academics and another of employers – with the employer survey carrying much less weight than the survey of academics.

49. One example of the influence of the rankings is evidenced by the University of Manchester[13]. In its 2006/07 strategic plan two of its key performance goals are:

- clear evidence of improvement in the University's international and domestic standing as measured by reputable international higher education rankings
- the presence on staff of at least five Nobel Laureates by 2015, at least two of whom have full-time appointments, with three such appointments being secured by December 2007.

50. Auckland University[14] in its 2005 – 12 strategic plan emphasises the steps and actions it will need to take to retain its position in the top 50 universities.

51. Marginson[15] makes the point, however, that outside of a small number of high profile universities such as Harvard, Oxford, etc, international reputations are as much shaped by perceptions of the national system as they are by the performance of individual institutions.

Policy responses across countries

52. In many countries, substantive reviews of tertiary and higher education systems have been taking place – Europe, UK, Ireland, Scotland, Australia, USA and New Zealand. All reviews recognise the substantial degree of change that has happened and the extent of future change that will be required.

53. These reviews have been primarily driven by concerns relating to:

- the challenges associated with financing the rapid growth in demand for higher education

[13] Ibid.

[14] Ibid.

[15] Ibid.

- recognition of the universal importance of tertiary education for all the population in developing the human capital necessary for a knowledge economy
- the substantial growth in flows of international students
- the impact of an increasingly competitive global market in education services, research and academic staff
- more complex and demanding public agendas that reflect new expectations on the contributions universities and other tertiary institutions can make to a country's development and competitiveness.

54. These reviews acknowledge the magnitudes and complexity of the changes involved.

55. Skilbeck[16], in the context of an Irish review, commented on how universities are "changing almost beyond recognition" as they adjusted and adapted to the demands and expectations of the emerging knowledge society, economic growth and changing expectations. .. He describes the shifts in orientation in universities being: *"less the scholar and teacher as the source of canonical knowledge and more the student as learner and client; less the enclosed college, more the wide ranging enterprise."*

56. The USA Secretary of Education's Commission on Higher Education[17] in its draft of June 2006 stated that USA had *"yet to confront how academic programmes and institutions must be transformed to serve educational needs of knowledge economy in terms of globalisation, rapidly evolving technologies, diverse and aging population and market places characterised by new needs and new paradigms*."

57. A European Higher Education Area is being created through the Bologna process. This is developing common degree structures, curricula that are intended to be much more student and employer focussed with a stronger and more harmonised focus on quality and quality assurance. In large part the goal is to support greater labour mobility within Europe through a more harmonised qualification structure and system. But the reforms are also concerned with strengthening research quality and research output – especially as part of a response to concerns about the relative growth of the USA in research and the need to increase the attractiveness of Europe as place for academics to work.

58. An OECD publication[18] comments that *"while the state remains the dominant or core funder of higher education, in many countries the proportion of institutional funding from the state has declined."* This largely reflects the fact that participation has grown more rapidly than funding and greater reliance is now being placed on tuition fees as a source of revenue.

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[16] Skilbeck, M, (2001); "*The University Challenged A review of international trends and issues with special reference to Ireland"* ; Higher Education Authority, Dublin, Ireland.

[17] US Secretary of Education Commission, draft report June 2006, "*The Future of Higher Education"* .

[18] OECD, (2004); On the Edge: Securing a Sustainable Future for Higher Education.

59. After following what were often difficult policy and political processes, most countries now expect students to pay for some part of their tertiary education. Students can finance this in varying degrees though access to loans and targeted grants.

60. Some countries have linked payments to institutions to their performance in relation to student outcomes or student feedback. For example, Denmark[19], in 1999, limited eligibility for funding to 12 terms of enrolment and institutions were paid on the basis of the number of passes.

61. In relation to research funding, performance-based funding has become more common.

62. Marginson[20] argues that policy needs to modernise systems and regulatory frameworks so as to render higher education institutions more globally competent and competitive.

63. In doing this, though, countries are grappling with a number of complex and often interrelated issues, including the following:

- Issues of equity.

  A significant proportion of the population in many countries does not participate effectively in post compulsory education. Here the major barrier to effective tertiary participation is seen to be those students not achieving well enough in the school system.

- Affordability and financial support for students.

  While tuition fees are becoming the norm, countries continue to grapple with issues of affordability for students and the best ways to target such support. Tensions are seen between universal approaches, which are simpler but more likely to be regressive and more expensive, relative to more targeted approaches that are less well understood and more complex to administer.

  The interplay between tuition subsidies, loans and financial grants also creates differing incentives on providers, students and families.

  Hauptman[21] points out: "[The] *Fundamental weakness in higher education financing employed is inadequate co-ordination between funding of institutions, setting of tuition fees and provision of student aid."*

- In varying ways the boundaries across different providers and different classes of providers are changing and blurring – both horizontally and vertically.

  This is seeing greater differentiation between tertiary providers – including some universities emerging as clearly research intensive and others more

[19] OECD, (1999) *Redefining Tertiary Education*, OECD.

[20] Ibid.

[21] Hauptman, A.M (2207); *"Higher Education Finance: Trends And Issues*"; Presentation to Conference.

teaching intensive. In some cases a trend towards greater polarisation between the "research" and "teaching" is an outcome of performance-based research funding which has seen the majority of research funds being captured by a minority of universities.

This presents a challenge for strategy and mission for many universities as to where and how they position themselves in global, national and regional settings.

But it also challenges policy-makers to take account of both the different and more differentiated roles of institutions within a system and, in doing so, encourage the development of many different pathways for students through a system. This is requiring a focus on articulation agreements, standards and quality assurance, and information for students. It has led in some cases to liberalising access to qualifications or the creation of new qualifications or the creation of new classes of institution.

- The nexus between teaching and research is often presented as a tension and area of trade-off.

  The reality is that research is fundamental to being a university and the quality of research defines the international standing of an academic, a faculty and a university. The OECD[22] states that curriculum, teaching and learning should not be treated in isolation from research – research will be high among the factors shaping the curriculum. The report also emphasises the importance of students accessing research and being researchers.

  Universities face the dual tension of both effectively teaching a more diverse and much larger number of students *and* raising the quality of research.

  In practice what seems to have happened is that the emphasis on research performance has led to an academic teaching fewer hours and classes becoming larger.

- In many countries there is acknowledgement that in today's world many university systems are overbuilt and over designed with capital infrastructure often running down. This will create increasing stresses relating to the long-term viability of a number of institutions. System adjustments and rationalisation will be needed at some point in the future.

- The internationalisation of education.

  The rapid increase in international student flows has dominated policy agendas until quite recently.

  However, the international focus is now beginning to shift onto broader issues of quality assurance, regulation of trade and protection of

[22] OECD, *Redefining Tertiary Education.*

consumers. The OECD/UNESCO guidelines provided one example of this. Bologna is another. WTO and GATS will be an important arena for these issues.

- Autonomy and interdependence.

  The relationships between universities and governments have come more sharply into focus. The starting point for these relationships varies quite considerably across states and countries from highly autonomous institutions to those with high levels of state influence and control. Several issues important here:

  - The importance of the state as a funder albeit with funding tending to decline in per capita terms.
  - Demands for improved performance and greater accountability to more stakeholders.
  - Higher expectations on universities to contribute more to economic and social development.
  - The interdependence with governments in underpinning international alliances through broader country to country relationships.

  Responses have seen buffer bodies created or their focus refined. In countries with tighter controls over universities there have been some moves towards increasing autonomy while other countries have looked to clarify roles and relationships within a context of recognising the greater interdependence.

Institutional and system responses

64. While universities face fundamental challenges extending beyond higher demand, Duderstadt[23] still sees the core roles of universities centred on the discovery and transmission of knowledge when he states:

    "knowledge is the medium of the university" through *"discovery, shaping, achieving, transmitting and applying knowledge universities serve society in a myriad of ways – educating the young, preserving cultural heritage, providing basic research.. , training professionals, challenging society .."*

65. The major forces shaping institutional responses by universities are:

    - growth in demand and the diverse natures of these demands
    - globalisation of higher education
    - government policies and especially the tendency for government funding to decease in relative terms.

[23] Ibid.

66. As Vincent-Lancrin[24] says these "*drivers create an urgent need for universities to change but also leave scope for many possible directions."*

67. In their responses, universities are adopting a range of approaches including:

- diversifying and securing alternative sources of income. These sources might link to competition to attract more overseas students, seeking increased support from alumni, increasing the drive for commercialisation of Intellectual Property, or seeking more research funding
- adopting strategies that centre on building from institutional strengths and more deliberate market positioning. This is contributing to greater differentiation; although within systems the responses towards greater differentiation can be muted by those that see "safety in numbers" and as a result a dynamic towards convergence
- reducing costs by closing some uneconomic departments, increasing staff to student ratios, economising on capital and making better use of ICT
- managing risks and creating new opportunities by forging alliances with other providers and industries – domestically and internationally.

68. But a deeper and more powerful shift involves the need for universities to be more open institutions and more connected internally and externally.

69. In today's world they do not have exclusive access to knowledge and need to engage more openly with others as learning institutions.

70. Riel Millar[25] comments on how in OECD economies higher education Institutions have played a crucial role in distribution of knowledge. In the past, they played a dominant role in determining structure and allocation of knowledge through the choices they made about what to teach and what to research. In today's world they can no longer exercise such control and a knowledge-intensive society requires universities to act as both developers and brokers of knowledge.

71. There are strong forces on universities to be both more competitive and more collaborative.

- Competition. This will involve competition for students, research money, academic and research staff,, and international rankings.

- Collaboration. Alliances with other researchers; with other institutions in other countries, with industry, in providing a range of student pathways, etc.

[24] Vincent-Lancrin S, *Globalisation, Market forces and the Future of Higher Education,* CERI expert meeting; Lisbon, 4-5 May 2006.
[25] Miller, Riel (2003); The Future of the Tertiary Education Sector: Scenarios for a Learning Society; OECD-CERI; OECD/Japanese Seminar on the Future of Universities, Tokyo, December 11-12, 2003.

72. Kenway et al[26] in discussing the development of the European Education Area, pick up the theme about the importance of building around strengths through development of research institutes, multidisciplinary linkages, etc.

"...the Sixth Framework Program (2002-2006) of the European Commission, which incidentally seeks to drive 'European research further and faster than ever before' now funds what it calls 'Networks of Excellence'.

It defines them thus: Networks of Excellence are designed to strengthen scientific and technological excellence on a particular research topic by integrating at European level the critical mass of resources and expertise needed to provide European leadership and to be a world force in that topic. This expertise will be networked around a joint program of activities aimed principally at creating a progressive and durable integration of the research capacities of the network partners while, of course at the same time advancing knowledge on the topic.

Networks of Excellence are expected to engage with other research teams and with 'actors beyond the research community and with the public as a whole' in order to 'transfer knowledge' and 'spread excellence' and encourage 'take up activities".

73. Forces are present that could see some universities and tertiary systems "shocked" by the emergence of major innovations in the ways of accessing and delivering education.

74. Such forces could be the outcome of resolving the increasing tensions between the tightening pressures of revenue and the need to respond to much higher and more diverse demands. These create the potential both for radical innovation and major institutional failures.

75. Another force on a global scale could be from the impact on demand and provision from China and India and their huge population bases. Bernd Wachter, director of Academic Cooperation Association, Brussels is quoted as saying[27] "*The pace at which India and China are creating higher-education-institutions is quite astounding. And it's not just quantity, its quality.*"

76. Duderstadt[28], in pointing to the imbalance between demand and available resources, comments that with higher costs, cost containment and productivity will be hard to achieve. He suggests that current paradigms for conducting, financing and distributing higher education may not be sustainable or adaptable enough. Massive restructuring is therefore possible and he points to how rapid advances in ICT could lead to major changes in collaboration and the creation of more open learning environments.

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[26] Kenway J, Bullen E, & Robb S, *(2004) The Knowledge Economy, the Techno-preneur and the Problematic Future of the University;* Policy Futures in Education, Volume 2, Number 2.

[27] Newsweek, August 20, 2007.

[28] Ibid.

77. Others identify the emergence of more corporate universities aligned with the interests of big industries or the demands and the potential for more teaching and learning to occur in workplace and community settings.

78. Some see the potential through alliances for greater separation of curriculum and pedagogical development from actual instruction.

79. In facing the challenges ahead there seems to be a broad consensus around two things.

80. The first is that the strategic options open to universities are greatest for those universities who have a strong and high quality research base along with a strong international orientation. Such good research-intensive universities will potentially have more global options/opportunities and will potentially be more buffered from international forces.

81. The second centres on the quality of governance and leadership.

82. Skilbeck[29] argues that effective responses to the scale of change involved will require difficult decisions and strategic thinking of a high order.

83. Duderstadt[30] sees the most critical challenge facing most universities being to develop the capacity for change and reduce the constraints that prevent them from responding to the needs of a rapidly changing society and (world). He identifies some characteristics needed by institutions for future success that include:

    - the importance of being clear about the key values to look to protect/retain such as educating the young; culture/identity and heritage; global preparation; etc
    - seeing diversity as really important and not just in terms of access to education but about creating multicultural pluralistic societies with new levels of understanding and tolerance
    - with so many potentially disruptive and unpredictable forces, good processes and strategies of experimentation and discovery are needed.

84. Marginson[31] sees it important that universities, in becoming global, are still deeply embedded in their national systems and national distinctiveness. He sees overall national capacity as crucial to the global effectiveness of individual universities.

Building a strategy for New Zealand universities

85. Universities include a significant proportion of New Zealand's intellectual capital. Through teaching, research and their relationships, universities can

[29] Ibid.

[30] Ibid.

[31] Ibid.

make a very substantial contribution to New Zealand's human and economic and social development.

86. The preceding sections highlighted the importance of longer-term strategic approaches that deliberately positioned universities within a global context around their strengths. They highlighted the importance of adaptability in a dynamic and rapidly changing global environment. They also highlighted the importance of the overall perceptions of New Zealand's university system alongside those of individual universities.

87. But they also highlighted how the pressures for change, uncertainty about the future, the system dynamics associated with different policy mixes, or how the controversial nature of specific polices can each work to slow the development of a more strategic system that makes a greater contribution to national development.

88. New Zealand is currently implementing a number of policy reforms that emphasise strategy, performance, distinctiveness and quality within a time frame of several years. This is an important step that should progressively allow both universities and government to engage in the development of more deliberate future strategies and then better align decision-making, policy design and implementation.

89. The development of the Tertiary Education Strategy (TES), the new investment system, the TEC's Investment Guidance, tertiary monitoring, research reports and the strategic plans of universities are important steps in bringing about better alignment and a richer indicator and evidence base.

90. To build from these developments it will be important to develop more explicit understandings about the key outcomes that should be expected from a university system that is performing as well as possible within the resources available. Associated with these outcomes should be indicators of these outcomes that can be monitored.

91. Clearer understandings and agreements on such outcomes and their associated indicators would then enable:

- better decision-making at each university and across the university system, with the design and implementation of government policies also better aligned with these outcomes
- greater clarity to develop around the different roles and autonomy of universities, government and other key stakeholders as well as the interdependencies in these relationships
- key judgements and trade-offs in policy objectives and design to be better understood and made more explicit
- investment decisions at both a system level and at individual universities to be made with increased confidence about the benefits that can be expected to flow from that investment.

What are the key outcomes that are expected from universities in New Zealand?

92. The key outcomes fall into four broad categories:

- Education outcomes for students.
- Research outcomes.
- The international standing of New Zealand universities.
- The contributions made by New Zealand universities to New Zealand's future development.

Education outcomes for students

93. New Zealand's future is dependent on the success of its universities at instilling, in a broad and diverse cross section of New Zealanders, the skills, knowledge and competencies necessary for success in a rapidly changing world.

94. As an OECD publication[32] says of universities "*their graduates increasingly are foremost amongst those who are in the creation and diffusion of ideas and techniques, the invention of new machines and processes and the resolving of complex economic and social problems."*

95. Key outcomes will include:

- the highest levels of educational attainment that should be reasonably sought for cohorts of school leavers and across the profile of the 18 to 65 year old population as a whole
- success with students as reflected, for example, in indicators of completions and attrition, employer and student feedback, and standings in international comparators
- the quality and relevance of student learning including the acquisition of competencies central to lifelong learning
- the range and accessibility of opportunities for students to access relevant and quality learning and teaching from the time they leave school until they retire.

Research outcomes

96. Research is at the CoRE of a university's roles in discovery, teaching and learning. The quality of such research is important not only in relation to teaching and international benchmarks but also in terms of its potential relevance to New Zealand.

97. Key outcomes will include:

- research quality and output in relation to international benchmarks

[32] OECD,(1999); Redefining Tertiary Education

- the ongoing development of areas of particular research that are internationally recognised
- the ways in which the focus of research is informed by, and informs, issues of important relevance to New Zealand such as sustainability
- universities becoming more differentiated on the basis of their comparative research strengths
- development of high quality future researchers
- Shifts in rankings obtained by researchers through the Performance-Based Research Fund (PBRF).

The international standing of New Zealand universities

98. Where New Zealand universities should be positioned in a global setting and the key indicators that reflect such positioning, are important questions.

99. International standing will influence the ability to attract good academics and attract and retain good students. International standing influences the ability to participate in higher quality cross-border alliances and, in doing so, enhances the contribution that universities can make to New Zealand's development.

100. Key indicators might include:

- the proportion of research output that meets or exceeds certain international benchmarks
- the processes and value attached to protecting the quality and integrity of New Zealand degrees
- the relative success of New Zealand students and the performance of the New Zealand system in comparative international surveys and studies
- the attractiveness of New Zealand as a place to come to study, teach or research
- those areas of high quality research, teaching and knowledge that are distinctive to New Zealand and internationally associated with New Zealand.

The contributions New Zealand universities make to New Zealand's future development

101. In addition to student and research outcomes, universities contribute to New Zealand's development through the relevance and uptake of their research, their relationships with government, business and communities and through the ways in which dissemination of knowledge occurs.

102. In a world where access to, and creation of, knowledge is critical to value creation, key indicators would centre on the following:

- ***The quality and depth of relationships and networks*** that the universities are strongly connected with. At the heart of these relationships

and networks is the extent to which knowledge is being exchanged and shared to create additional value.

- The ***openness and accessibility*** of the knowledge held within universities to people outside. This recognises that through a university's research, teaching, scholarship and alliances it holds an immense amount of knowledge that could create value in other parts of the economy and society.
- The ***relevance and uptake of research*** findings in New Zealand.
- An ***outward looking culture*** within universities that proactively looks to contribute to, and learn from, contemporary issues facing New Zealand.
- The strengths of the ***linkages between research and practice***.
- Strength of the ***linkages with Crown Research Institutes (CRIs)*** and other research bodies.

Some characteristics of the future university system in New Zealand

Global competence

103. While the primary concern centres on the value universities bring to New Zealand and New Zealanders, they do operate as part of the global network of universities and the effectiveness of their participation in those networks is important to their domestic effectiveness.

104. In this context being "globally competent" includes:

- having clear understandings of international benchmarks with these reflected in a university's overall strategies, planning and reporting in measureable ways
- universities having international strategies and relationships informed by a good appreciation of global forces, the value they bring to the university and its stakeholders and how the risks and opportunities associated with these can be well managed
- understanding global trends, including ensuring overseas policy developments are effectively monitored so that universities can adapt quickly and effectively to new global developments
- being clear about the distinctive nature of being a New Zealand university within a global setting. This might link to the characteristics of our economy, our society and its diversity or our geographical place in the world.

Global positioning

105. International rankings may be flawed but they will matter in terms of ability to form alliances and attract good staff and students. At the heart of these rankings is research performance – especially in science.

106. Therefore at the heart of the international standing of New Zealand's universities will be the system's research capability and performance.

107. This suggests relative priority needs to be given to building the strength of universities at their postgraduate levels – in terms of academic and research quality and in terms of increasing the ratio of postgraduate to undergraduate students.

108. With the market for academic staff increasingly becoming international, this does imply that the real costs of attracting and retaining academic staff will increase. An important question though, is whether the ability to pay higher salaries should be enabled through general price adjustments or be through mechanisms that are more explicitly performance linked.

A more differentiated system

109. There are a number of ways in which a system can become more differentiated, with such differentiation being influenced to varying degrees by policy settings and the dynamics they create.

110. The key to differentiation is that it must be underpinned by a strong emphasis on quality and effective strategies that build on the things an individual university is good at.

111. While it seems desirable that a system shift towards higher research intensity occurs, this does not mean all universities should have the same research intensity. Rather the research intensity and the postgraduate focus of an individual university should strongly centre on its areas of research strength. This would see differentiation develop that is centred on depth of expertise rather than breadth of focus.

112. The reality of performance-based research funding is that it drives the system in this direction. In the UK and Australia this has created a strong vertical polarisation between the small numbers of universities that access the vast majority of research funding and those that access very little research money.

113. A trend seems to be emerging in New Zealand where universities are becoming more deliberate in their market positioning, and in doing so, are adopting strategies centred on different areas of quality.

114. This is becoming more evident in the New Zealand system in the strategic 2005 to 2012 documents and the annual reports of individual universities. For example:

- Otago University[33] *says "Existing areas of strength provide the foundation for promoting research excellence. These will be nurtured and supported. In areas ...where research is not strong, decisions will be made to invest in improving research performance or reduce involvement or withdraw from the area"*

[33] Otago University (2005); Strategic Plan 2005 – 2012.

- Auckland University[34] strongly focuses on its ranking in the Times Higher Educational Survey
- Waikato[35] emphasises its regional focus
- Victoria[36], its competitive position within the Asia/pacific region
- AUT[37], its applied research
- Lincoln[38], its applied focus on agriculture, physical and biological sciences and their links to commerce and social sciences.

115. What is important to note is that in each case strong research performance is seen as critical to underpinning the areas of strength and strategic focus.

A more federated system

116. There are a number of reasons why it would be desirable for deeper forms of collaboration and alliances to develop across New Zealand universities. These include the following:

- Developing more strongly federated and collaborative elements that look to maximise performance and the international reputation of the system as a whole.

  In international settings, the size of our system will still count against us with the international standing of any one university significantly influenced by the overall reputation of the universities and our education system as a whole.

  This argues for strong collaboration across the system centred on presenting (internationally) a strong and credible collective leadership focussed on how the overall capabilities are being harnessed to raise the overall performance of the university system.

- Alongside a more differentiated system will be the need to develop pathways that provide a rich range of options for students within the system.

  If universities move towards higher postgraduate to undergraduate ratios other parts of the system, notably some ITPs, will need to take more students up to bachelor degree level.

  It has been suggested that in order to protect the requirement that a degree involves teaching by someone actively engaged in research, a case could be made for the creation of an associate degree that eases the research requirement of its teachers.

[34] Auckland University(2006) Annual Report.

[35] Waikato University (2005); Strategic Plan 2005 – 2012.

[36] Victoria University (2005); Strategic Plan 2005 – 2012.

[37] Auckland University of Technology (2005); Strategic Plan 2005 – 2012.

[38] Lincoln University (2005); Strategic Plan 2005 – 2012.

- Not only will it be desirable to develop depth of expertise and excellence centres within a university, but there will also be considerable potential in considering how even greater value might be gained from developing strong linkages between different areas of strength within the system.
- The combination of fiscal and revenue constraints will be a reality. This needs to drive improved efficiency and effectiveness at all levels of the system. This suggests:
    - innovation in teaching and development of pathways across the system will be important. These will need to recognise demands for:
        - more personalised learning
        - use of ICT
        - different methods of delivery.

Governance and leadership

117. Universities are being asked to move from a system where student volumes mattered to one that is strongly centred on strategic positioning within a more federated system and a complex and rapidly growing international environment.

118. This will place a premium on the qualities of governance, strategic leadership and management.

119. Also, developing greater system leadership to sit alongside that of individual universities represents a huge shift in culture and practice from what has been the case in the past.

New Zealand: Issues/ directions/implications for policy

Outcomes for students

120. National competitiveness centres on the ability to use and create knowledge to solve problems or create new value faster than others. In this world, networks of relationships matter and are integral to these value adding processes. This means New Zealand's population not only needs to be more highly qualified with expertise in a wide range of fields but it also needs to be characterised by high level competencies that include:
    - the ability to keep learning
    - multiple literacies
    - problem solving and creativity
    - the ability to work and participate across national, cultural, discipline boundaries.

121. This has implications for both the overall level of qualifications that might be expected in a very successful economy and what is important to learn.

Future demands for university places

122. Notwithstanding some credential creep, it is likely that over the next 10 to 15 years greater economic and social success will be associated with:

- a higher proportion of the New Zealand population with bachelor degrees
- a higher proportion with postgraduate qualifications
- many fewer New Zealanders with only Level 4 or lower qualifications.

123. This suggests that both the demand for, and desirability of, a university level education is likely to increase further reflecting:

- A labour market premium attached to higher level qualifications.

  Ministry of Education research[39] points to graduates with bachelor degrees continuing to command a significant earnings advantage over those with qualifications below a degree. This suggests that despite the supply of university graduates increasing rapidly, demand is rising at a comparable rate to the growth in supply.

  With respect to postgraduate achievement, the research indicates that the salary advantage continues to build over time, implying that the skills, attitudes and competencies associated with completions at these levels are increasingly valued in the labour market as time goes on.

- Success in reducing under-achievement amongst school leavers and more students leaving school with University Entrance will increase the proportion of 18 to 25 years participating in tertiary education will lift demand for university places.

- A high-skilled and high performing economy will be associated with high investment in up-skilling by adults in the workforce. This will create both different and higher demands on universities as well as a range of other providers.

  Higher demand pressures will have the greatest implications for the greater Auckland region where the strongest population growth is occurring. It is also an area with a young population. This suggests more specific attention will need to be given to how both supply and demand issues are to be best met and managed in this region.

More New Zealand students can be expected to undertake some part of their study offshore.

124. While it may not be large in absolute terms, it is likely that an increasing proportion of New Zealand students will undertake at least some part of their study abroad. For example, many of New Zealand's universities strategic documents' make reference to creating more such opportunities.

[39] Ministry of Education (2006) *How do graduate earnings change over time*.

125. The nature and duration of such study could be quite varied – the range could include students who decide to undertake an entire programme of study overseas to students who might study overseas for one semester, students who access overseas institutions while domiciled in New Zealand or postgraduate students who go overseas.

126. There will be several influences working to increase the numbers of New Zealanders undertaking some part of their study abroad, including:

- Overseas universities competing for our top students as part of strategies to attract overseas students.

  Some Australian universities are already actively looking to recruit New Zealand students as undergraduates.

- Increased international competition for research students.

  As is argued elsewhere in this paper, the weight being given to research performance is going to increase international competition for good postgraduate students. Therefore top New Zealand students can expect to be highly sought after.

- The creation of offshore study opportunities by New Zealand universities as a CoRE part of the learning experiences that they are creating for New Zealand students.
- The perceptions of students about the comparative quality and benefits of studying overseas relative to studying at New Zealand universities. This will also link to perceptions of the comparative international standing of New Zealand universities.
- The financial support available to New Zealand students who study abroad from either domestic or international sources.

Significant numbers of overseas students are to be expected but the numbers are not assured.

127. As has been argued earlier in the paper, the number of students studying away from their countries of residence is likely to keep increasing. The demands from overseas students to study in New Zealand and their willingness to pay fees are likely to be influenced by a combination of different influences, including:

- the demands from students in countries where access to universities is limited or their quality has yet to meet international standards
- the demands for study in English as the language of instruction
- the ability for New Zealand to successfully compete for top academic and research students

- the overall strategic positions adopted by New Zealand universities in terms of the balance between revenue and volume objectives and qualitative objectives
- the flows that might be associated with alliances that New Zealand universities form with universities in other countries that provide cross-border learning pathways
- The overall international standing of New Zealand universities – both in general and in specific disciplines and fields.

128. In terms of planning, while the trend may be upwards, the revenues gained from international students are less assured and potentially quite variable. This judgement is made on the following basis:

- New Zealand will continue to be seen as a less preferred location for studying relative to the larger and better known systems of the USA, UK and Canada.
- Flows of many international students are sensitive to cost considerations.
- To compete on the basis of quality as opposed to price, the "industry" needs to adopt such an approach centred on quality. We seem to have a way to go to do this across the "industry". If we did, it would, for example, suggest more rigorous and/or an increased investment in a range of academic, language and pastoral supports to underpin higher levels of student success.
- To attract top students there will be pressure to reduce the costs to such students studying in New Zealand (such as the treatment of overseas PhD students on the same basis as domestic).

The effectiveness of teaching will become more important

129. A successful university graduate will be expected to have a good knowledge base and a range of higher level learning competencies such as those discussed at the beginning of this section.

130. Postgraduate students should be expected to have not only a greater depth of skill and knowledge in specific areas, they should have also developed higher level research and problem solving capabilities.

131. The tertiary system as a whole (including universities) however, faces the challenge of needing to succeed with a growing diversity of students. This diversity will take different forms:

- Age. Universities have amongst their students a wide cross section of the adult population studying for a variety of objectives. They range from 18 year old school leavers with high levels of technological literacy and different approaches to learning, to mature students that reflect the importance of up-skilling and the need to remain in the workforce longer.
- The growing cultural diversity of the population. There will be greater expectations that education will be responsive to different cultures and

values. With high levels of participation, successful outcomes will be more dependent on being able to adapt and find the best ways of teaching different students. Educators will also increasingly be expected to build into others tolerance towards, and understanding of, diversity.

- Demands from students for different combinations of study options and at times and locations that work for them.
- The academic preparedness of students. For example, with anyone over the age of 20 able to attend university, not all will have the necessary academic readiness or study skills to succeed.

Higher Demands for more personalised and tailored options and services.

132. The diversity of interests will create wider demands from the population for more personalised and tailored services. This may increase demands for greater innovation in course design and modes of delivery.

133. A high level of demand from adults for further study – not for a qualification but to increase their knowledge and skills in a specific area – either for personal or work advancement is likely to continue.

134. Other responses in New Zealand and overseas have seen the introduction of more modular courses, summer schools and the development of different programmes – conjoint degrees, more generic liberal bachelor degrees, greater use of ICT.

Pathways

135. A characteristic of a flexible, adaptable and quality tertiary system capable of providing more personalised and tailored options will be the availability of many different pathways. This is already a positive characteristic of the New Zealand system with the National Qualification Framework and with high levels of articulation in place between institutions.

136. The more differentiated the system becomes, including greater differentiation within the university system, the more important issues of pathways become with the need for good multiple entry and exit points.

137. For example, if universities concentrate more around areas of strength and tend towards higher numbers of postgraduate students (relative to undergraduate) more pathways into university and into different areas of postgraduate study will become desirable.

138. This will require good system understandings of the requirements for different entry points and for the recognition of prior learning.

139. Such issues will also arise internationally as more cross-border alliances develop and more universities seek to provide offshore opportunities for their students. Moves towards greater international harmonisation of quality assurance or consumer protection for students will also have impacts.

The content and nature of curriculum could become a greater focus.

140. A number of national and international factors might require greater system attention to the nature and design of university curriculum. These include:

- A more explicit focus on the expectations of graduate outcomes.

  Dimensions here include:

  - Strengthening the links to labour market requirements and employer needs.
  - A key goal of the tertiary reforms is to strengthen the relationships between employers and tertiary providers. Better meeting the changing needs of employers and professional bodies will have implications for what is taught.
  - Ensuring the development of lifelong learning skills and competencies is of increasing importance in overall learning outcomes.
  - Preparation for the global world. New Zealand graduates need to be confident and competent to work and participate in different countries. Increasingly New Zealand needs people who have deep understandings of New Zealand and other countries in terms of peoples, history, cultures and systems. This suggests a global context to studying in New Zealand universities and increasing the global competency of students will become a more important component of student learning outcomes.
  - Distinctiveness of a New Zealand university education and qualification. In many countries, universities are also seen to play critical roles in maintaining and developing national identity.
  - These questions centre on what areas we would expect New Zealand universities to be good at, given the nature of the New Zealand economy, its society, its history and its place in the world. These might include a focus on applied biological sciences linking to our pastoral-based industries, environment and bio-security; to our indigenous Māori population and wider cultural diversity; to areas of social policy, innovation, practices and values and to our relationships with Australia and the Pacific.
  - Innovation and efficiency. If universities were to give greater priority to developing capabilities and options at postgraduate levels then there may be a case for greater co-operation around the development of some more harmonised and brand-based courses at years 1 and 2 of university study.

Funding for better outcomes

141. There are a number of trends pointing to higher costs – lifting the overall qualification profile of graduates across the entire tertiary system – a competitive global labour market for teachers and researchers, increasing participation for some groups and the importance of investment in research.

142. But higher funding by itself will not guarantee either higher quality or higher access. Ensuring the spending is as effective as possible in delivering key outcomes is central.

143. Several themes are evident from the previous sections:

- It is important that universities focus on long-term strategies centred on providing better and more relevant outcomes for their students and building future capabilities centred on areas of research strength.
- System capacities matter, and effective system strategies and leadership will be important alongside those of institutional strategies and leadership.
- Innovation in development and delivery of programmes, pathways and personalising learning will continue to be important.
- While high levels of participation in tertiary education have been achieved, within the overall levels of participation, getting more students to degree level and above appears desirable.

144. As always, in a context where the goal is to raise the overall level of average tertiary attainment, maintain high levels of access and raise the overall quality of the system, there are questions, not only about levels of funding, but about how funding can be provided in ways that add the most value to the future of the country.

145. The levels of funding available to universities and their students, the incentives associated with different forms of funding, the performance expectations associated with different funding streams and the way in which funding is delivered all influence outcomes.

146. The following section briefly identifies some possible future options for consideration in the design of future funding mechanisms.

Some options and tentative conclusions for the design of future funding

147. To get better value for money and raise the nation's return from the investment in universities, several approaches (and combinations of approaches) are possible and may be worth exploration.

TEO Component v Student Achievement Component

148. The analysis suggests the funding of universities should involve a high TEO Component with less reliance on student numbers.

149. A high Student Achievement Component requires universities to be more strongly focused on student numbers and more driven to increase them relative to investing in quality improvements.

150. A high TEO Component would be more consistent with an approach that is centred on the quality of institutional strategies and how they focus on building and maintaining areas of strong capability and domestic and global market positioning based on those strengths.

151. Determining the TEO Component would still involve judgements about the overall number of students, the expected distribution across different

qualifications and programmes and the balance between undergraduate and postgraduate numbers and ratios.

152. For example, it might be agreed that a university should have the capability to teach X,000 students and that an annual fluctuation around this level of 500 would be an acceptable measure of possible variance within this funding. It might be further agreed that the university should look to increase its postgraduate numbers relative to undergraduate numbers – again with a reasonable allowance for variation.

153. Such an approach would be broadly consistent with that of Auckland University[40], whose stated objective is to sustain its international ranking and in doing this, increase its overall student numbers by 1 percent, but within this overall growth, increase its proportion postgraduate students. A number of other universities also indicated a desire to increase postgraduate numbers.

154. Such approaches would need to be underpinned by explicit indicators of expected student outcomes such as completions, equity outcomes, and student and employer feedback. Performance against these indicators would inform "Investment Plan" decisions and enable future investment decisions in an institution to be sustained, reduced or increased according to performance. Put differently, sustained performance against expectations will provide the greatest assurance for continued funding.

155. A higher TEO Component does not require a cap on numbers. But it does require more explicit attention to overall demand in planning and in how margins are built that explicitly allow for growth, allow variations in numbers to be managed and also look to make better and more cost effective use of the system's overall capacities. This might mean access to some universities is more limited than others.

Developing a "system funding component".

156. The report argues that a desirable future characteristic of the New Zealand university system would be the development a more "federated" element that is focused on system leadership, building system-wide capabilities and capacities and strong networks and pathways within and across the system.

157. The report identifies a number of areas where such an approach might be needed:

- Building the New Zealand system "brand" internationally.
- Linking the strengths of the New Zealand system across universities.
- Developing a network of efficient pathways for students.
- Innovating at a system level in the design and delivery of some courses.
- Collaborating around aspects of curriculum.
- Contributing to the overall management of system demands in ways that maintain a high level of openness and access while also supporting the building of higher quality.

[40] ibid.

- Providing greater system leadership.

158. Moving in this direction does require identifying common system interests. It would represent a significant shift from past practices and cultures. If left to the self-interest of individual institutions, an under-investment in collaborative activities is likely.

159. Investment in alternative and more efficient ways of delivery at a system level can create opportunities for gains in both efficiency and effectiveness. The need for more "system thinking" will be required if demand for more personalised and tailored teaching increases, if the system is to be more successful with the growing diversity of students, and if the system can take more advantage of the potential created by ICT.

160. Funding that is tagged through a "system component" for investment in system innovations and collaboration could overcome some of the barriers.

Allowing for differentiation.

161. Funding through "Investing Plans" can comfortably accommodate greater differentiation. It can enable an increasing relative strength of postgraduate education across all universities and influence the speed of any change. It can fund different targets for each university. It can impose requirements that link to quality criteria and institutional strategies by ensuring greater investment in postgraduate capabilities are centred on areas of clearly defined and proven strengths.

162. The challenge lies more in developing the wider system cultures, practices and capabilities that will be important for high participation and access, greater efficiency and greater effectiveness.

163. It also raises the question as to whether new classes of institutions may be required such as universities of technology or more broadly based research institutions who also teach.

Planning for Auckland.

164. Auckland as the biggest, fastest growing city with a young population will raise specific sets of issues about access and supply.

Research outcomes

165. Research is at the heart of a university's capability with "world leaders in the field having an unprecedented global visibility and power".

166. The global labour market for academics and the international standing of universities and university systems will be driven by research performance and capability.

    Central to this will be the:

    - strengthening of postgraduate capabilities, staff and supervision
    - concentrating research effort around proven strengths rather than spreading effort across too many areas
    - linking across areas of strength

- strong networks and linkages to other researchers in New Zealand and internationally
- development of new generations of researchers who have the ability to link across different fields of research and also see the wider economic and social potential of research
- development of multi-disciplinary centres of research excellence (CoREs).

167. Looking ahead, key outcomes should centre on increasing the research capacity and performance of New Zealand universities. This will be necessary to both maintain and increase international standing .

168. Policy needs to continue to encourage and reward research excellence. This implies resources and effort to shift from lower performing to higher performing areas.

169. As has been said above, this should be associated with a higher ratio of students in the New Zealand university system studying and researching at postgraduate levels relative to undergraduate.

170. At the same time, the postgraduate focus and capabilities of individual universities can be expected to narrow down to areas of proven excellence. This means the research intensity will vary from university to university.

171. It also suggests that funding might need to become more differentiated to ensure that the highest quality research capability attracts proportionately greater research investment than do other areas. Possible categories might include:

- Internationally leading research that meets the very highest international standards.
- Research leadership that utilises best research capabilities in particular fields across the university system and potentially from other research institutes. The CoREs would be an important subset of this group with the added strengths of their internationally leading research.

  This would encourage and reward the development of a high-quality, wider range of collaborative arrangements that might take different forms, including:

  - research institutes
  - research associations
  - CoREs
  - centres of excellent researchers.

  The current funding mechanisms tend to encourage the excellent researcher rather than better outcomes from more collaborative research. This view was reinforced in the recent CoRE funding round where many applicants fell well short of what existing CoREs were achieving.

  At the same time they did demonstrate a potential that was not being tapped into or encouraged by other funding mechanisms such as PBRF, Marsden and HRC (by them not placing much weight on the potential being offered through more collaborative and cross disciplinary research).

At the heart of this potential is good leadership and the vision of such leadership about the quality and the potential of such research. This is clearly evident in the best of our CoREs and it is at the heart of the successful research institutes and associations.

- Supporting research that is globally competent but not internationally leading.
- Supporting research capabilities – but at a lower level that may be central to a university offering a breadth of disciplines. This may be more about recognising the importance of scholarship than the international calibre of research. But this may also be about recognising the potential to develop international excellence in any part of the system and for this to be recognised and rewarded.

International standing

172. International rankings may be flawed but they will matter in terms of ability to form alliances and attract good staff and students. At the heart of these rankings is research performance – especially in science. Size also matters.

173. Good research intensive universities will potentially have more global options/opportunities and potentially buffering from international forces. For a country like New Zealand this suggests a move towards a smaller number of universities that have high overall research intensity.

174. But, with system reputation important, it is also about how the collective capabilities of the system are used to greatest effect. This requires a strongly networked (which is different from concepts of a hard-wired network) and a globally competent system.

175. This argues for the importance of developing strong, collective, internationally-facing system-leadership across the universities alongside the leadership that is also required at an individual institutional level.

176. It will be important to get agreement on key indicators of system and institutional performance and align policies and their implementation to reinforce these.

- For example indicators of research outcomes will be important and supporting these may be a range of more input orientated indicators such as academic salaries that are necessary to performance.
- A focus on collective university performance and the quality and international standing of New Zealand degrees is likely to become more important.
- The overall branding of New Zealand universities in terms of the “New Zealand” distinctiveness.
- Demonstrating the comparative international performance of the achievement of New Zealand students.

Contributing to economic and social development

177. At the heart of the value a university can add is the knowledge it is able to access and share and its ability to create new knowledge value through its ability to research contemporary problems.

178. Riel Millar[41] described a "learning society" as one where there is a significantly higher knowledge intensity of everyday life. In *The Connected Republic*[42] the power of new technologies is seen to lie in the ability of communities to congregate around areas of common interest and in the power of distributed networks to make it easy in many different ways to connect people and ideas. Marginson[43] writes about how research has increasingly become a global public good.

179. These are two ideas of central importance to a higher value-adding relationship between universities and society.

180. The first is the concept of increased openness. Universities are huge repositories of knowledge. While they cannot be expected to know the potential value of different areas or components of knowledge, the more that others can access that knowledge base the greater the possibility of others creating value from it.

181. The second and related theme centres on universities being characterised by the strength of their participation in many different networks in ways that more deeply contribute wider problem solving and value creation by connecting their knowledge and perspectives to the different knowledge and perspectives of those different communities.

182. Both highlight the importance of universities in a knowledge society seeing themselves as important brokers and facilitators of knowledge transmission that might be accessed by others through the many different avenues that characterise distributed and open networks.

183. The more universities are able to bridge across their worlds of research to the many different worlds beyond a university, the greater the potential value that can be created. But more receptiveness and openness is also required on the employer/industry side to the contributions universities can bring through the creation of different relationships.

184. Finally, several other areas seem important here. New Zealand needs capabilities in universities that inform and contribute to issues of national importance. Examples here might include sustainability, bio-security and biodiversity.

185. Some COREs see a key output being the creation of a new generation of researchers. These researchers not only have a depth of focus and expertise but are also being expected to frame research questions in ways that access

[41] ibid.

[42] Cisco Internet Business Systems Solutions Group (2007) "The Connected Republic 2.0: Connecting the Pieces: New Possibilities, New Value".

[43] ibid.

perspectives and insights from a range of fields and disciplines. They are also expected to have a better appreciation of societal issues and to be identifying the potential applicability of their research.

186. One point of relevance raised in discussions was the benefits of stronger research and practice links. Health was identified as a good example of connecting research and clinical practice. These facilitate two-way knowledge exchange and knowledge creation.

187. Links with CRIs are clearly important, at the heart of these relationships are effective knowledge exchange and recognition of the need to bridge the understandings gained from academic research and the applied research and understandings of specific sectors or industries. While both sorts of organisations clearly have some overlap, the greatest potential value comes from their different strengths.

188. From a policy point of view, some conclusions related to this section are:

- Encourage greater openness and accessibility to the research and knowledge held by universities.
- Commercialisation is important to universities but increasing accessibility may add much greater value over time.
- Be more deliberate about involving universities more effectively in contributing to issues of national significance from the perspective that the more they can appreciate the policy issues the more able they will be to provide access to relevant research and its possible applicability.
- Encourage stronger research practice links.