



OFFICE OF THE ASSOCIATE
MINISTER OF EDUCATION
(TERTIARY EDUCATION)

TERTIARY EDUCATION STRATEGY 2002/07



ISBN : 0-478-27202-2

© Ministry of Education
May 2002

Ministry of Education
National Office, 45-47 Pipitea Street,
Wellington, New Zealand
PO Box 1666, Tel: 04-463 8000, Fax 04-463 8001
www.minedu.govt.nz

CONTENTS

1. This Strategy: Ministerial Foreword, Hon. Steve Maharey	Pg 4
2. The New Zealand Context: Our Development as a Prosperous and Confident Nation	Pg 9
3. The Imperative for Change	Pg 15
4. The Change in Focus: A Connected Tertiary Education System	Pg 17
5. Six Strategies	Pg 20
Strategy One – Strengthen System Capability and Quality	Pg 21
Strategy Two – Te Rautaki Mātauranga Māori – Contribute to the Achievement of Māori Development Aspirations	Pg 29
Strategy Three – Raise Foundation Skills so that all People can Participate in our Knowledge Society	Pg 36
Strategy Four – Develop the Skills New Zealanders need for our Knowledge Society	Pg 44
Strategy Five – Educate for Pacific Peoples’ Development and Success	Pg 51
Strategy Six – Strengthen Research, Knowledge Creation and Uptake for our Knowledge Society	Pg 55
6. Measuring Progress	Pg 62
7. Conclusion: This Strategy in Action	Pg 65
8. Appendix: Consultation on this Strategy	Pg 66



He Kupu Whakataki

E ngā mana, e ngā reo, e ngā waka, tēnā koutou katoa. E tika ana kia huri o tātou whakaaro ki ngā tini aitua maha e tiraha nei i ngā marae huhua o te motu. Haere koutou ki to tātou piringa i te waahi ngaro, haere, haere, haere atu ra. Tātou e ngā mana e whakarauika nei, e kokiri nei i nga kaupapa mātauranga, tēnā koutou katoa.

Nei ra te rautaki mātauranga kura wānanga mo te rima tau kei te heke mai. He kohikohinga tēnei i ngā tūmanako nui o ngā iwi o te motu. Ko tona whaingā, ko te whakatutuki i ngā tūmanako me ngā hiahia o tera whānau, o tera whānau kia eke ai te iwi Māori ki te taumata e tūmanakohia ana.

E mohio ana tēnei Kāwanatanga, kaore e taea e mātou te whakatukuki i ēnei wawata mehe ka mahi motuhake te kāwanatanga. Engari, ma te mahi tahi ka taea te whakatutuki. No reira e tika ana kia haere tonu ngā mihi ki a koutou katoa i tae atu ki ngā huihuinga, i tuku mai i o koutou whakaaro, tēnā koutou katoa. Ahakoa ngā piki me ngā heke kia u tonu tātou ki te kaupapa. Ko te tūmanako nui ka riro ko ngā hua o ō tātou werawera ki ngā uri whakatipu.

No reira e raurangatira ma, tēnei ra te mihi nui ki a koutou katoa. E ki ana te kōrero, he tirohanga hou, he ao hou.

Tēnā koutou, tēnā koutou, tēnā koutou katoa.

1

This Strategy

Ministerial Foreword

The word 'strategy' has its origins in a military context. Military strategy is about making the best use of one's resources to achieve a desired military objective. And in this sense 'strategy' is an appropriate term for describing the Government's approach to tertiary education. This document is about a set of goals for tertiary education, and it is about how we are going to make the best use of the resources we have to meet them. But more than that, this document is about a set of national development goals – and it is about how tertiary education is going to make its contribution to realising those goals.

This *Strategy* is about a campaign that will last initially for a period of five years, and it is about how we will measure our progress along the way. This is not the kind of strategy that will be launched with fanfare, and then relegated to the far recesses of the bookshelf. This strategy will be a living entity, breathing life into a new set of institutions, and a new approach to setting priorities and funding learning.

The *Strategy* is one for 'tertiary education', and by that I mean all of the learning that takes place in the field of post-school education and training. 'Tertiary education' in this sense includes what is generally known as tertiary education and training. It is as much about what happens on the job as it is about what happens in universities and research institutes. It is as much about foundation education and training which bridges people into further education and training, or into a job, as it is about world-class doctoral study. It is as much about relevance as it is about excellence.

This means that a 'tertiary education organisation' could equally be a university, a polytechnic, the provider of a Training Opportunities programme, or an Industry Training Organisation.

It is vitally important that this more expansive and inclusive definition of what constitutes 'tertiary education' is kept in mind as readers consider the pages that follow, and as the sector – broadly defined – and the consumers and end-users of education and training, engage with the process of the Government's tertiary reforms.

This *Strategy* builds from, and complements, the many things happening in schools and early childhood education to ensure that all New Zealanders develop strong learning foundations, acquire sound generic skills and can follow quality learning pathways.

Tens of thousands of New Zealanders earn qualifications each year and many thousands of overseas students seek part of their education in

New Zealand. Tertiary education enhances the lives of many people by contributing to their general knowledge and understanding, increasing their incomes and standard of living, and widening their experiences and interests.

Our universities employ most of our top academics and house much of our national research investment. They generate new knowledge and contribute to creating a better future for many people. Our polytechnics, colleges of education and private training establishments educate people for many roles in life. Their relationships with key sectors also contribute significantly to innovation and new opportunities.

Our wānanga are creating new and important pathways for Māori. They have been a major factor in the recent increases in Māori participation in tertiary education. Industry Training Organisations (ITOs) play a crucial role in making the links between industry and tertiary education and training providers. Many adults also participate in the learning environments offered by the adult and community education sector. Here opportunities exist for people to extend their interests and skills in many ways.

There is much in this New Zealand tertiary education system at present that is excellent, and many innovative ventures and initiatives that already exist support the vision for a knowledge society outlined here. However, at present our tertiary education system lacks a clear and shared strategic direction. Policies over the past decade have centred on raising participation rather than on building capacity. They have not rewarded quality. They have encouraged and rewarded competition rather than collaboration. They have focussed on individual institutions rather than on the capacity that the system as a whole requires.

New Zealand now needs a tertiary education system that makes a strong contribution to the achievement of our national goals. It needs to be dynamic, outward-looking and strongly linked with the communities of interest that it serves. It needs to equip New Zealanders with the skills and knowledge they, and the nation, need to prosper.

This *Strategy* is intended as the centrepiece of a series of reforms of this very diverse tertiary education system. A key element of

these reforms is the recognition that the tertiary education system cannot be viewed in isolation from other policies and other sectors. The role of this document is to present a vision for the development of the New Zealand tertiary education system over the next five years and to illustrate how this vision is consistent with, and linked to, Government's broader vision for the nation's economic and social development.

The *Strategy* is a high-level document that will be supported by other documents with a shorter-term focus, such as the *Statement of Tertiary Education Priorities*. These should be read in conjunction with documents that describe particular policies or instruments in more detail, such as upcoming reports on charters and profiles, funding, performance-based research, and assessments of strategic relevance.



The intention here is to identify the key aspects of our tertiary education system that must change in order to make a real and substantial difference to New Zealand's future development, and to outline strategies in six key areas in which we will need to lift our performance over the next five years.



This *Strategy* is not about prescribing a 'top down' approach in a detailed manner, nor is it about a rigid plan which will describe everything the system does in the next five years. Instead, this *Strategy* is intended as a framework for thinking about improved tertiary education outcomes and a set of signals that will need to be interpreted in different ways in different parts of the system.

But activities that are to be funded from the public purse will need to be consistent with this overall strategy, and with the goals and outcomes discussed in the pages that follow. This means that tertiary education providers and organisations, such as ITOs, will need to use this document as a guide to their planning in the short-to-medium term.

The Treaty relationship with Māori is a central element of the tertiary education reforms. In preparing this *Strategy*, the Government has recognised that Māori are not just another stakeholder group and has sought to build on the understanding reached with Māori through the Hui Taumata process and to ensure

Government has embarked on a comprehensive programme of tertiary education reforms. These reforms include:

- the development of this *Tertiary Education Strategy* and an associated *Statement of Tertiary Education Priorities*. The *Strategy's* function is to articulate the strategic direction and priorities for the system over a five-year period and to demonstrate how this direction is derived from, and aligned with, Government's broader goals such as those outlined in the employment strategy or the Growth and Innovation Framework. Thus the *Strategy* focuses on what needs to change in the tertiary education system and on areas in need of particular attention;
- the introduction of charters and profiles for all tertiary organisations. These will articulate the strategic direction and activities of providers and show how they will contribute to developing the strategic focus and capability of the system as a whole;
- the establishment of the Tertiary Education Commission to give effect to the *Strategy* through the negotiation of charters and profiles, allocation of funding and building of capability and relationships in the tertiary sector;
- the introduction of an assessment of strategic relevance to determine charter and profile alignment with the *Strategy*, and thus funding approval;
- the development of an integrated funding framework that will support the development of system capability and focus on areas that are important to the future development of New Zealand and New Zealanders; and
- better integration of the Industry Training system, Adult and Community Education and Training Opportunities and Youth Training programmes, within the wider tertiary education system.

that Māori experiences and aspirations have been reflected in the development of this document and the wider reform package. Extensive engagement with Māori has occurred by means of regional hui and with the support of the Ministry of Education's Māori Tertiary Reference Group.

A *Draft Tertiary Education Strategy 2002/07* was released for public consultation in December 2001. 121 submissions were received on the draft document and 50 workshops were held. The feedback received during this consultation process is reflected in this version of the *Strategy* and is analysed in more detail in the Appendix.

During consultation, Māori emphasised the importance of greater regional and national collaboration between providers and Māori communities and stressed the need to improve accountability to Māori at every level of the tertiary education system. It was seen as important that changes were implemented in a manner that supports a strong partnership between the Crown and Māori.

Although this document looks to a five-year horizon, it is not intended as a static plan that will remain unchanged over the period. A key aspect of this *Strategy* is the *ongoing* strategic dialogue which supports it and which will ensure that it remains a dynamic and living document. Effective implementation will require a partnership between Government and a wide range of stakeholders, including the sector itself, and the regions, industries, and communities that it serves.

The Tertiary Education Commission (TEC) will be a key implementation agency for this *Strategy*, but it will not be the only one; nor can any single stakeholder entity succeed in achieving the vision articulated here on its own. Successful outcomes will require co-ordination across a number of Government portfolios, departments, and agencies, particularly between Education, Research, Science and Technology, Social Development, Health, Māori Affairs, Pacific Island Affairs, Economic Development, Labour and Employment.

As these agencies and stakeholders work together to implement this *Strategy*, they will need to find new ways of working together on the key issues facing tertiary education. Changes and refinements of this *Strategy* will undoubtedly arise out of the new forms of cooperation and collaboration the *Strategy* seeks to encourage. And it is essential that we find ways to ensure that businesses and communities, in

addition to providers and local and central government agencies, are part of the partnership that underpins the implementation and refinement of this *Strategy*. In many respects this *process* of ongoing strategy review and development, begun in the consultation workshops and to be continued by the TEC, is as important as this plan itself.

As we work together to create the vision outlined here, we face many challenges. We will need to make some tough decisions at times. As a small nation with low economic growth at present, we will be continually challenged to do more with less and to spend the money we can afford wisely. We will face difficult policy co-ordination issues at both local and regional levels. We will be required to find a new balance between competitive and collaborative forces. We will need to balance a tertiary education system that has very successfully encouraged high levels of participation with the development of niche areas of specialisation and world-class capability. These challenges are also exciting opportunities to be innovative and to improve education outcomes. By working together, by focusing firmly on

the future needs of New Zealand, and by learning from our mistakes, we can create a superb and dynamic tertiary education system which will be the envy of other small nations and which will help us to secure the economic growth we need and the prosperous, confident nation and distinctive culture to which we aspire.

I commend this *Strategy* to you. It represents the Government's commitment to a tertiary education system – broadly defined – that meets the tests of relevance, excellence, and accessibility for all New Zealanders.



Steve Maharey

Associate Minister of Education (Tertiary Education)

Submissions to the Draft Tertiary Education Strategy Dec-Feb 2001-02

“The Strategy highlights the key issue of how we better connect tertiary education to the national economic and social goals and we agree that it is long past time for this to be addressed.”

Submission by Victoria University of Wellington Council

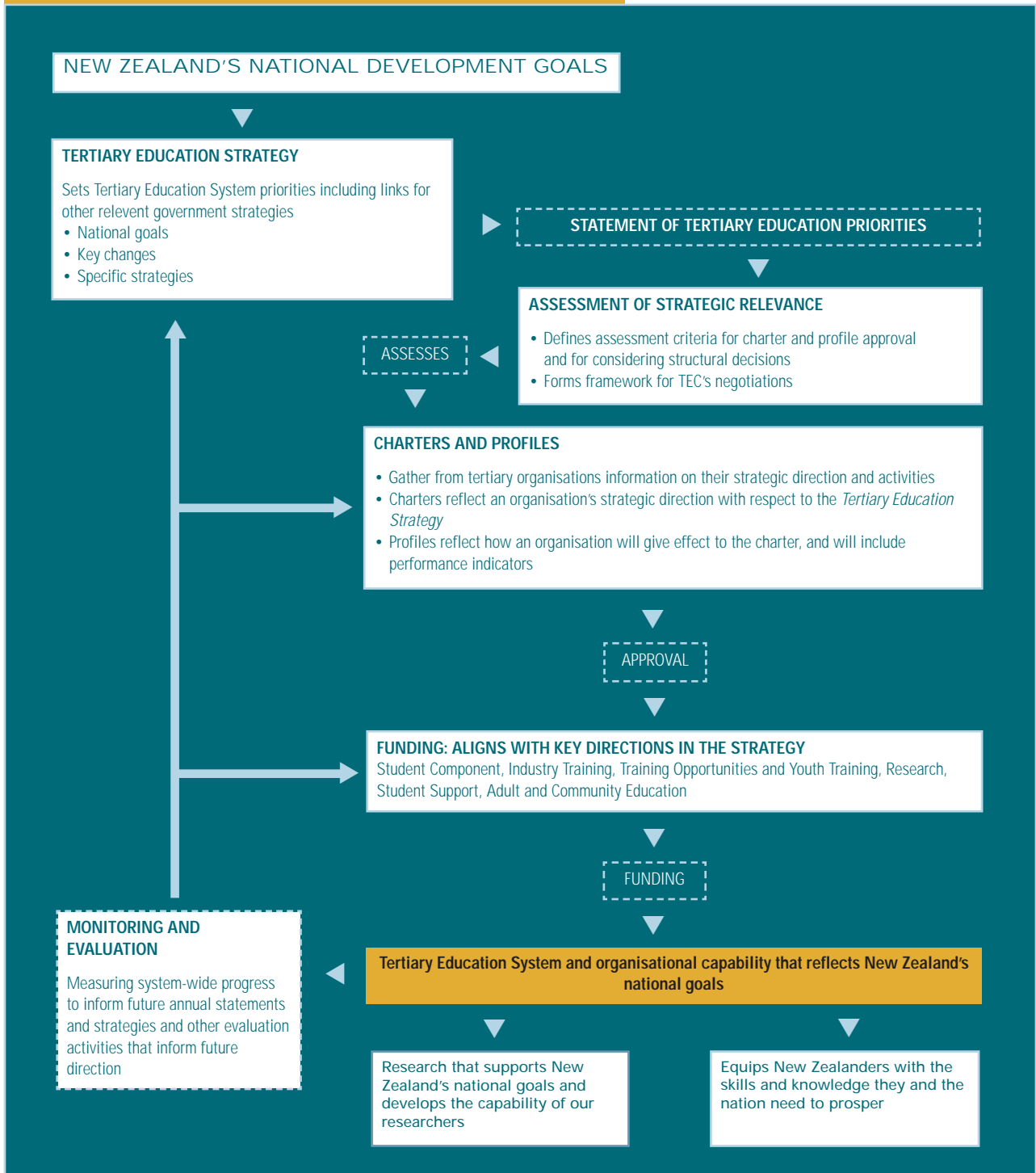
“The importance of a strategy for the New Zealand tertiary education sector is undeniable, as it will establish ... a consensus on the longer-term direction of the sector and thereby help to focus the efforts of the nation.”

Submission by New Zealand Vice Chancellors' Committee

“For me personally, just being involved in this process has made me think beyond our PTE and look at the wider picture that makes up tertiary education.”

Submission by Teacher Aide Educator, Bay of Plenty

FIGURE ONE: THE NEW TERTIARY EDUCATION SYSTEM





2

The New Zealand Context:

Our Development as a Prosperous
and Confident Nation

"This is my vision for this country: that these beautiful islands can be the most creative, daring and innovative country on this planet.

"So much so that the world looks on us in awe and wonder – not simply because of the beauty of our landscape, not simply because of our legendary efficiency and practicality, and not simply because of our warm and compassionate humanity – but also because of our creativity and our courage, and our openness to risk, to experiment, to innovate and to transform.

"And so I see a world in which any exhibition of New Zealand art is a 'must see'; where any performance of New Zealand music or dance is a 'must get to'; any New Zealand poetry, novel or book is a 'must read'; a world where New Zealand products are a 'must have' because of their extraordinary quality, added value and, above all, their integrity; where New Zealand fashion, New Zealand advertising and New Zealand design set the trends for the world scene and cause the globe to marvel because of our boldness and flair; a world where New Zealand businesses are admired and win because they don't just develop solutions for current problems – they create solutions for the problems of tomorrow and open up opportunities that no one had ever thought of. A world where New Zealand researchers and thinkers are revered for their willingness to explore and for their insights and discoveries.

"This is the New Zealand of the future. And it is our only future – if we are to fulfil the dream of being a prosperous, dynamic and socially-harmonious nation."

– Peter Biggs, Chair, Creative New Zealand

The world's economy is undergoing significant change, with an increasing emphasis on the creation and application of knowledge as the foundation for prosperity and social inclusion.

For New Zealand, the development of a prosperous and confident knowledge society must build on this nation's uniqueness and its strengths. To create, market and sell high-value products and services will require a strong focus on the global marketplace, and sophisticated new skills and knowledge. It will also require a culture of continuous inquiry, innovation and improvement – and of risk-taking and entrepreneurship.

The Government's vision for a New Zealand knowledge society is clear. New Zealand will be:

- a birthplace of world-changing people and ideas;
- a land where diversity is valued and reflected in our national identity;
- a great place to live, learn, work and do business; and
- a place where people invest in the future.

This *Strategy* supports the Government's Growth and Innovation Framework, and takes a broad view of New Zealand's development, framed within this section around the six national goals of:

- economic transformation;
- social development;
- Māori development;
- environmental sustainability;

- infrastructural development; and
- innovation.

The *Strategy* outlines how the tertiary education system will help give effect to the Government's vision and goals.

New Zealand in the World

New Zealand's geographic position, its geological and biological evolution, and its history of human settlement all contribute to a unique context that defines how New Zealand's development will differ from that of other nations.

New Zealand is geologically diverse and active, is isolated from other land masses, stretches from the subtropical Kermadec Islands in the north to the subantarctic islands in the south, and is surrounded by the fourth largest Exclusive Economic Zone in the world. This gives us unique animals and plants, and spectacular landscapes and seascapes. It also gives us a diversity of climates, habitats and soils, creating strong comparative advantages for our biologically-based economy.

New Zealand has a low population density, so that large parts of the country remain dominated by native vegetation. This enables New Zealanders to enjoy a lifestyle that is the envy of many countries. Importantly, the comparative advantages that make this land mass a wonderful place to grow plants and animals also combine, with our low population density, to make this country a wonderful place in which to live, and in which to holiday.

These features have led to contrasting factors: on the one hand, to relative isolation, separation and a distinct identity, and on the other, to a nation of people with an outward focus, international linkages and a willingness to learn from other cultures.

However, the world is becoming a smaller place. Communications and transportation are now world-wide and rapid. International trade is expansive. This globalisation brings open and competitive international labour markets, and increased migration. Most activities and endeavours within New Zealand are now exposed to international competition. This is happening against a background



of accelerating technological change, which means it is important to shorten the gap between the availability of new technologies and their uptake within society. Underlying globalisation and technological change places an importance on new knowledge and skills, and their application. The countries that retain or achieve first-world living standards will be those that respond actively to these trends. For New Zealand, there are new opportunities for achieving prosperity by applying our skills and knowledge on the increasingly accessible global stage.

Economic Transformation

The information revolution now complements the earlier agricultural and industrial revolutions. Both computer-based information and communication technologies (ICT) and biotechnologies are part of this information revolution. Our challenge is to adapt this major revolution in information technologies and capabilities for greatest benefit to New Zealand.

Presently the majority of our export products are derived from our comparative advantages in animal and plant growth, natural resources and landscapes. These have enabled us to overcome the tyrannies of small size and distance. Continued research and application of new technologies have maintained high rates of productivity growth and cost competitiveness in food and fibre production. In turn, this has helped position many of our products at the top end of the price range, because we are now deliberately emphasising qualities that command a price premium – products such as lamb, orange roughy, greenshell mussel, fine wool and new varieties of fruit. New Zealand is unusual in achieving first-world living standards from a resource-based economy.

However, not all our products command premium prices and many, in technical terms, remain commodities that embody little ‘information’ and are therefore subject to variable and declining prices over the long term. This poses major risks to our ability to sustain and improve our living standards. In essence, the challenge is one of ‘adding value’, and value will increasingly be based on information. Embodying more ‘information’ – sophistication – into each product will help us distance ourselves from downturns in commodity prices.

The major reason why the information revolution is so important to New Zealand is because the associated computer technologies and biotechnologies allow us the means to embed that sophistication, to ensure the whole economy produces products that sell on image and performance rather than price competitiveness alone.

It is also essential that we diversify our economy beyond its traditional base of food and fibre, not least to avoid risks such as devastating animal and plant diseases, drought and the continued impact of commodity price cycles. There will be three complementary paths to successful economic transformation.

Firstly, we will need to **reinforce existing strengths** by applying new knowledge, skills and technologies (especially ICT and/or biotechnology) to our major *existing* sectors such as food, beverages and fibre, manufacturing, tourism and ‘export’ education. To accelerate the transition to sophisticated food, textile, manufactured and tourism products and services will require a substantial increase in the education and training of the existing workforce, including a focus on basic literacy and numeracy, so that all New Zealanders can apply new technologies in the workplace.

Secondly, we will need to **build upon these existing strengths** by identifying opportunities to develop new sectors from existing sectors. We must do so by using research and development and creative skills such as (art, design and marketing), to create genuinely different, valuable opportunities from *existing* sectors. For example, our current biological industries are beginning to form the base for an entirely different range of products such as pharmaceuticals associated with healthcare and robotics for processing industries.

Thirdly, we will need to **create new strengths**. These new strengths will be found in wholly new industries underpinned by a broad set of creative skills – arts, design, engineering, science – and harnessing startling new technologies. The new technologies include telecommunications, software and computing technologies, intelligent decision-making systems, optoelectronics, advanced materials, nanotechnologies, biotechnology and associated medical technologies, and new technologies that integrate these.

In essence then, for New Zealand to achieve its vision we need to create:

- a nation that has a unique, complex and enduring identity around which creative knowledge industries and businesses can focus, where the humanities, arts and sciences each make substantial contributions to the creation of a knowledge society, and where Māori and Pacific peoples make original and distinctive contributions;
- an enduring focus on creativity, invention, innovation and entrepreneurship, underpinned by high levels of literacy and numeracy and intensive levels of lifelong education and training, in particular within the existing workforce;
- a comprehensive set of educational pathways to cater for modern lifestyles and employment patterns, informed by vastly better links between employers, unions and the tertiary education system;
- an increased focus on products and services that are too small for multinationals to compete in yet are too technically sophisticated for developing nations, especially where this builds on our existing strengths;
- the development of clusters and webs of organisations in which the value created is more than the sum of the parts. Such clusters and webs will often transcend national boundaries. Tertiary providers will have a key part to play, alongside businesses, research institutions and central and local government agencies;
- a prosperous modern economy in Auckland, a city that is largely independent of, and quite unlike, the biological mainspring inherent throughout the rest of New Zealand; and
- the traditional barriers between different disciplinary areas, including those between the arts and the sciences, are being broken down. As Creative New Zealand Chair Peter Biggs has noted, the creativity and imagination which are intrinsic to the arts, are a critical part of New Zealand's competitive advantage. Our ability to imagine and reflect our distinctive cultural identity is what will set us apart internationally.

Social Development

Social development¹ is vital to creating a knowledge society. Recent work on what an inclusive economy might mean for New Zealand emphasises the links between productive capability, social capability² and well-being. The central challenge is to ensure New Zealanders, in all their diversity, are valued and included as part of our knowledge society. We cannot afford and must not tolerate waste of human talent.

Social well-being has a wide range of dimensions that affect people at individual, whānau/family, community and societal levels. Key issues are: longevity and quality of life; physical security; relationships in the family, community and wider society; material standard of living; rewarding work; personal time and leisure; knowledge, skills and education; culture and identity; social, economic and political freedoms; and natural and constructed physical environments.³ In particular, five major trends are likely to affect us.

- Our population is ageing, with the exception of some groups such as Māori, Pacific and Asian populations. This will influence the nature of work, retirement and leisure, and will require a greater focus on educating an older, existing workforce.
- Current birth and immigration rates suggest that New Zealand will become a nation with a predominance of Māori and Pacific peoples. This will influence national identity, and make the increased participation of Māori and Pacific peoples in higher levels of tertiary education critical to our future.
- Social organisation has changed rapidly with the fragmentation of families and communities, and economic transformation may continue this trend. This endorses the need for a more inclusive economy.
- Social change also requires a heightened focus on access to education, and implies remediation of the current 'digital divide' and other barriers to inclusion.

1 Including the social, health and cultural dimensions of well-being.

2 The Treasury, *Towards an Inclusive Economy*, May 2001, p. 13.

3 Ministry of Social Policy, *The Social Development Approach*, June 2001, pp. 3–4.



- Globalisation is raising issues about how we retain our identity as New Zealanders while being part of a global economy. As people move more freely between nations, so it becomes increasingly important to imbue New Zealand with a unique sense of place and a secure and confident identity.

Māori Development and Advancement

It is of great importance to New Zealand that Māori development is enabled by opportunities and resources. As a nation, we need to enable Māori to live as Māori, to be active global citizens and to improve their social well-being. The Crown and Māori must support these aspirations through a variety of different pathways.

Māori are a young and expanding population. The contribution by Māori to New Zealand's identity and future prosperity is of increasing significance. Goals for Māori development will be advanced through:

- preservation and promotion of Māori culture;
- development of an asset base owned by Māori;
- nurturing of the entrepreneurial and innovative talent within Māori communities; and
- Māori leading change.

Environmental Sustainability

As we move into the twenty-first century, New Zealand faces significant environmental challenges at both the national and international level. The large majority of our community remains unaware of the ecological impact of humans on our environment. Our ecosystems are under substantial stress from a high rate of change caused by deforestation followed by the extensive spread of biological industries and introduction of plants and animals. Maintaining our status as a 'clean and green' nation requires us to ensure we have the research and skills to:

- contribute to international understanding of climate change and reduce local impacts of these changes – our position in the southern ocean gives us a key role;
- sustain our biodiversity, which is under threat from habitat

destruction and introduced pests – the uniqueness of our native plants and animals places on us a considerable stewardship responsibility;

- manage biosecurity risks – to both our biological industries and indigenous ecosystems;
- manage changing patterns of use of the land and sea – both changes to more intensive use (e.g. aquaculture, dairying) and less intensive use (e.g. farming on marginal hill country) require new knowledge and skills; and
- help all New Zealanders develop an awareness of the environment and the impacts economic and social activities have on it – here we can also draw from Māori community traditions of environmental management.

Infrastructural Development

Successful development of a knowledge society depends on a modern 'infrastructure' and its supporting laws and institutions. Infrastructure facilitates markets for goods and services, supports the work and skills of people, and enables the diffusion of ideas and knowledge. Infrastructural issues facing New Zealand include:

- changes in settlement patterns affecting urban infrastructure, especially international migration into Auckland, with the city's relatively low population densities making for small economies of scale and stretching the physical infrastructure beyond capacity;
- demographic trends, particularly the growing numbers of retired people and of young Māori and Pacific peoples, require different planning for our cities and settlements to cater for more community diversity, reflect changing lifestyles, and attract and retain talented people;
- emerging knowledge-intensive enterprises are locating within urban centres, creating the need for a new dimension in settlement planning that supports desirable lifestyles;
- broad band internet access is important throughout New Zealand if our biological industries, centred rurally, are to adopt

the information revolution;

- our modern society and economy have yet to experience major volcanic eruptions and earthquakes and the ability of our infrastructure to withstand such disasters has yet to be seriously tested; and
- development of the regulatory infrastructure, (public policies, legislation and regulations) that is consistent with international norms and will provide for the operation of a modern business sector and a knowledge society.

attitudes of our people. All New Zealanders will need to view themselves as part of an economy and society that plays a vital role on the world stage.

Innovation

To develop a knowledge society, New Zealanders will need to create and apply fresh knowledge and skills to their activities, across all parts of society. We will need a more multi-lingual, fully literate and numerate society, one that is confident about its distinctive identity, achievements and place in the global 'village', and one that is imbued with a sense of discovery and experimentation. Bringing together Māori and western knowledge traditions will provide the basis for New Zealand's distinctive innovation capability. This implies that our tertiary education system must operate to world-class standards at all levels, and be world-leading in areas of existing and emerging strengths. It also implies wise use of our nation's scarce resources.

As we presently undertake only 0.1 percent of the world's research, most of the knowledge that is applied in New Zealand will not be created here. We must take full advantage of fresh knowledge wherever it is generated, and ensure that we have ready access to the international pool of knowledge. Yet we must always generate our own new knowledge in areas where we, as a young nation, can make a significant contribution to the world as a whole, as this builds our capability and standing in the international research community.

Central to this process of national transformation will be highly-skilled and adaptable people and institutions, who collaborate and network to act globally. Ultimately our successful development as a prosperous and confident knowledge society will depend on the



3

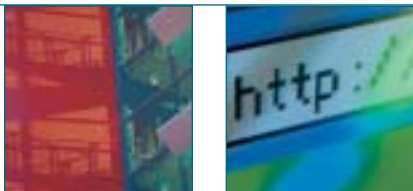
The Imperative for Change

“Five frogs are sitting on a log; four decide to jump off. How many are left? The answer is five. Why? Because there’s a difference between deciding and doing.”
— A riddle.

Our tertiary education system already delivers major benefits to our economy and society through the development of skilled and adaptable people, and through the new ideas created by research and scholarship. However, if we are to achieve the national vision and goals outlined in the previous section, and respond to the challenges of globalisation, accelerating technological change and the increasing importance of knowledge, the tertiary education system will need to play an even greater role and one that differs in focus. Two sorts of change are required.

Firstly, we need to shift away from an approach centred almost exclusively on raising participation at least cost, to one that recognises the capabilities of our tertiary education system as key national development assets. The focus in future needs to ensure that the tertiary education system and key sectors and communities in New Zealand are better connected. This is essential if New Zealand is to build from its existing strengths while also developing new strengths.

Several **key changes** have been identified through consultation with the tertiary education sector and its stakeholders. All relate to increasing the relevance, connectedness, and quality of the system. They are discussed in detail in the next section, and in summary are:



- > Greater alignment with national goals
- > Stronger linkages with business and other external stakeholders
- > Effective partnership arrangements with Māori communities
- > Increased responsiveness to the needs of, and wider access for, learners
- > More future-focussed strategies
- > Improved global linkages
- > Greater collaboration and rationalisation within the system
- > Increased quality, performance, effectiveness, efficiency and transparency
- > A culture of optimism and creativity

Secondly, the tertiary education system must significantly raise the skill levels of all New Zealanders so as to ensure they are adept at creating knowledge, transferring knowledge, and applying that knowledge through all parts of the economy and society. This requires a set of **specific strategies** related to the development of skilled and knowledgeable people, the creation of research and scholarship and the organisational capability needed to support these.

Widespread consultation with system stakeholders has strongly endorsed six specific strategies for the development of the tertiary education system in the period 2002–07. They are discussed in detail in the later sections of this *Strategy*, and relate to skill development, research and capability as follows:

> **Strategy One: Strengthen System Capability and Quality**

National goals cannot be achieved unless we enhance the strategic capability and robustness of the tertiary education system as a whole.

> **Strategy Two: Te Rautaki Mātauranga Māori – Contribute to the Achievement of Māori Development Aspirations**

We need to recognise the unique position of Māori as Treaty partners, and the huge significance that learning and education has for Māori communities. This strategy addresses issues related to skill development, research and capability-building for Māori.

> **Strategy Three: Raise Foundation Skills so that All People can Participate in our Knowledge Society**

Improving foundation skills (literacy, numeracy and other basic skills), will ensure that more New Zealanders are able to participate effectively in the economic and social benefits of our vision for national development.

> **Strategy Four: Develop the Skills New Zealanders Need for our Knowledge Society**

This strategy recognises that we will need high-level generic skills in much of the populace, and more highly-specialist skills in areas of comparative advantage, for New Zealand to accelerate its transformation into a knowledge society.

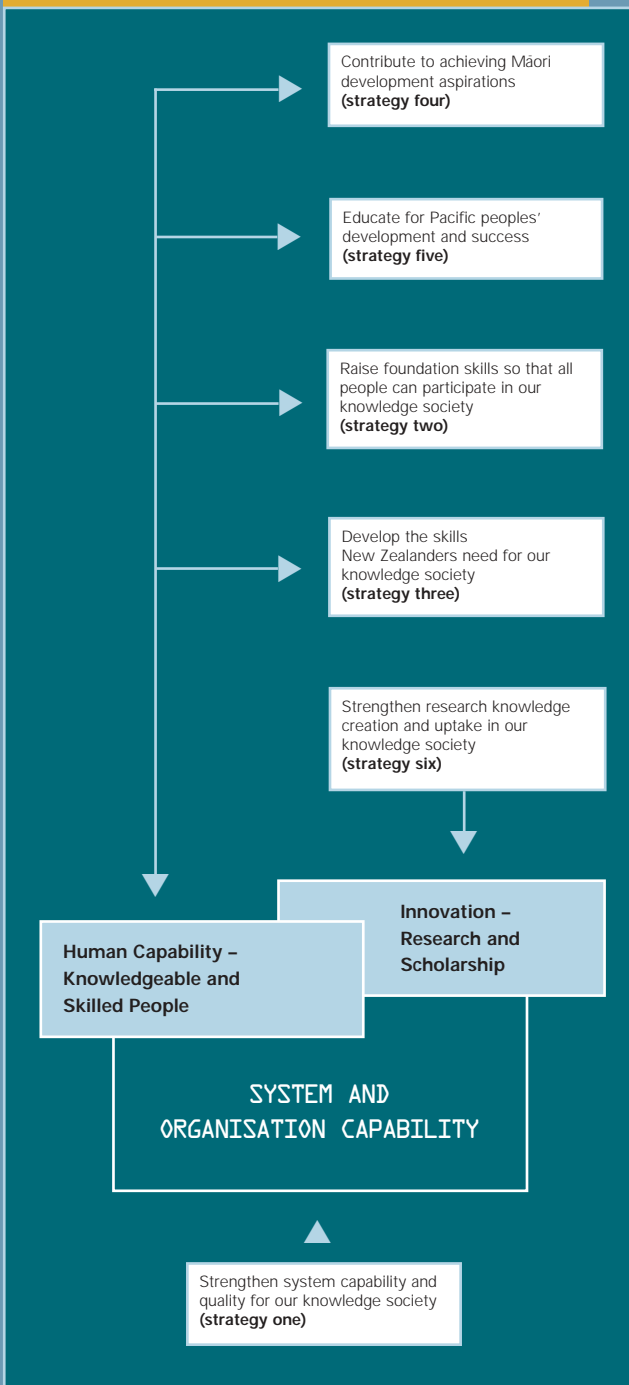
> **Strategy Five: Educate for Pacific Peoples' Development and Success**

Pacific peoples represent a significant and rapidly-growing proportion of New Zealand's population. This strategy addresses issues relating to Pacific peoples' capability needs and skill development that will ensure their success and development.

> **Strategy Six: Strengthen Research, Knowledge Creation and Uptake for our Knowledge Society**

This strategy recognises that research and innovation are key drivers of modern economies, and also that the broader application of new knowledge will enable the achievement of social, environmental and infrastructural goals.

**FIGURE TWO:
STRATEGIES FOR TERTIARY EDUCATION**



4

The Change in Focus:

A Connected Tertiary Education System

New Zealand needs a tertiary education system that is outwardly focussed, able to meet the needs of learners and the future development needs of our nation, and which is distinctively 'New Zealand' in its approach. The key changes outlined below are those needed to reposition the system so we can fulfil our vision of developing into a confident and prosperous nation.

The current tertiary system comprises many talented and dedicated people who have the skills and capabilities to contribute effectively to national development, and parts of the system are already performing well. However, the system as presently organised does not have the capability to deliver the lift in knowledge, skills and innovation that New Zealand's future requires. The key changes needed are as follows:

Greater alignment with national goals

Education and training providers and ITOs will need to ensure that, amongst them, the courses and programmes they offer, and their research activity, align more closely with the priorities and national goals outlined in the previous section. This will ensure the tertiary education system is aligned with national goals and achieves these goals as efficiently as possible.

Stronger linkages with business and other external stakeholders

We must ensure that the tertiary system is more responsive to the skill needs of the labour market and the needs of communities. Tertiary providers will need to build stronger relationships and networks. Increasingly, these interactions need to involve the development of shared strategies that reflect stakeholder needs, and the shared development of learning pathways and workplace learning. This should include the development of joint strategies for upskilling the existing workforce, including more workplace learning

and the inclusion of a strong workplace component into courses and programmes. The mobility of skilled people between the tertiary system, the research sector, the business sector, and other communities of interest should also become commonplace.

Effective partnership arrangements with Māori communities

The tertiary system must meet the educational needs and aspirations of Māori communities. Partnership and autonomy expressed in the Treaty of Waitangi must be given effect through the Government, Māori and the tertiary education system working together to produce success in terms meaningful to Māori. This should provide opportunities to recognise and accommodate Māori development aspirations through tertiary education. In the development of charters and profiles in particular, providers should work in partnership with local Māori communities to determine where opportunities exist for tertiary education to contribute to, and benefit from, Māori development of their cultural, intellectual, and physical assets.

Increased responsiveness to the needs of, and wider access for, learners

We must build on the vision of educationalist Clarence Beeby for a broad and generous education that is widely accessible. In a knowledge society, all New Zealanders will require enhanced access to relevant education and training (and career and academic advice and guidance) throughout their lives. This will result in increases in participation, especially through the upskilling of the existing workforce, and increasing Māori and Pacific participation in higher levels of tertiary education. This creates a challenge for providers to deliver learning in innovative ways that meet the diverse needs of learners. This will require a shift to more diverse but interconnected learning pathways. Tertiary education organisations in the system must focus not only on ensuring that programmes and courses form part of an effective skill acquisition pathway, but that they are fully integrated with other educational pathways in the senior secondary school, the wider tertiary education system, the workplace and with learning within



businesses and communities. This is critical so that the learning acquired on one pathway can easily be built upon or complemented by learning on other pathways.

More future-focussed strategies

Increasingly, providers and ITOs will need to work with their external stakeholders to develop joint strategies that look ahead and focus on developing the skilled people New Zealand will require in the future, not just on the skills needed for today. This improved strategic capacity and future orientation will be required for all parts of the system, including a focus on knowledge creation in areas of strategic importance to New Zealand, which will be underpinned by the broad fundamental research base that is a strength of the tertiary education system; a recognition of global developments in tertiary education and the proactive development and application of new learning approaches and technologies within New Zealand; and the development of the more generic and technological skills that will be required within a knowledge society.

Improved global linkages

Increasingly, providers and ITOs will need to look outward at the world for examples of best practice, for programmes and qualifications, for students, for relationships and networks, for both teaching and research linkages, and in order to prepare their students to operate in a global economy in which many will be mobile. Students must be encouraged to learn from the world's best, no matter where they may be, with this learning integrated into New Zealand qualifications, programmes and research endeavours. This will require our providers to forge links and relationships with international education providers so that New Zealanders can access world-class qualifications, teachers and learning resources.

Greater collaboration and rationalisation within the system

If New Zealand is to make best use of its limited resources to achieve all of the Government's goals, the overall mix of courses offered will need to shift to reflect New Zealand's future needs better. This requires much more collaboration and co-ordination

among providers and ITOs within the tertiary education system in order to reduce unnecessary duplication, including where they are developing similar qualifications and course materials, delivering similar programmes, delivering support services, and investing in new overhead structures. This means a much greater recognition of other providers' areas of particular expertise in teaching, research and management. Opportunities for rationalisation include shared management and other services; mergers and joint ventures; new and innovative links among tertiary providers to build critical mass around areas of strength, aligned with national goals; and joint research programmes between tertiary providers, Crown Research Institutes, and research associations.

Increased quality, performance, effectiveness, efficiency and transparency

All parts of the system need to continue to strive for continuous improvement in the effectiveness and efficiency of delivery, while increasing the quality of provision and learning outcomes. The new charters and profiles requirements will increase the consistency and transparency of information. This will enable learners to make better decisions, provide a better basis for greater connectedness within the system, and ensure external stakeholders are better connected to the system. The availability of benchmark information against which providers and ITOs can assess their own performance, and of best practice examples, will assist management to make strategic decisions and will increase awareness of collaborative and cross-system opportunities.

A culture of optimism and creativity

The strength of the contribution from the tertiary system will ultimately depend on its ability to create a culture of action, creativity, innovation and optimism, and one that is unique to New Zealand. This means ensuring the attitudes of providers and organisations in the system are characterised by:

- a focus on achieving results and outcomes, and a 'can-do' approach;

- a willingness to take risks and to accept and learn from failure;
- a culture that encourages and rewards creativity and success and in which the best ideas emerge and are supported;
- embracing diversity, leading to success through difference;
- a strong identification with New Zealand's unique culture and its natural environment; and
- an acceptance of continuous change, and the need to form and dissolve alliances to pull together the right resources and people to capitalise on emerging opportunities.



5

Six Strategies

Strategy One:

Strengthen System Capability and Quality

“The race is not always to the swift, nor the battle to the strong – but that’s the way to bet” Damon Runyon



Where do we want to be by 2007?

By 2007, the quality of learning and research outcomes from our tertiary education system will have significantly improved. The financial viability, strategic capacity, leadership and international orientation of our tertiary education system will be stronger. The system is presently too fragile in many respects to support strategic changes of the extent necessary to give effect to our national vision as a knowledge society. By working together to develop a more robust and capable system, we will be better positioned to respond to the key changes outlined above and to implement the other strategies outlined in subsequent sections.

The adult and community education (ACE) sector will have become more cohesive and will be better connected to the rest of the tertiary education system. Local and national ACE collaborative networks will have developed, will be effecting a more strategic approach to provision. All providers will better address the professional development requirements of ACE workers.

Career Services will have continued to build its capability to provide improved information and guidance to learners, to parents and to other professional ‘influencers’ such as teachers or caseworkers. Better information about skill requirements, skills matching, personal returns to tertiary study and the relative performance of providers against system indicators will be disseminated.

Industry Training Organisations (ITOs) will play a key role in brokering connections amongst providers and industry stakeholders. They will

play a leadership role in identifying and meeting future skill needs in their industries, and in promoting training to employers and employees in order to meet these needs. They will arrange training for a significant portion of the New Zealand workforce. There will be fewer ITOs, a significant increase in collaborative partnerships between ITOs and improved integration between ITOs and the rest of the tertiary education system.

Private provision of tertiary education will continue to be a part of the system, and, as is the case today, not all of these providers will access public funds. Many PTEs will have addressed the capability issues arising from small size and duplication of provision by forming regional and national collaborative ventures, both amongst themselves and with tertiary education institutions (TEIs), ITOs and iwi.

By 2007, this process of change within the system will be underpinned by a genuine partnership between the Crown and Māori, based on Treaty of Waitangi principles. Kaupapa Māori provision will be a vibrant and essential dimension of our tertiary education system. All Māori will have a choice of quality learning pathways, including kaupapa Māori learning environments.

While academic freedom and the role of providers as autonomous entities will be respected, all tertiary organisations will be encouraged to operate as contributors to the national effort to improve New Zealand’s prosperity and confidence as a nation. Although the values of the traditional university will continue to be relevant, all providers that seek public funds, and particularly those



Shared Management Services

The University of South Australia and the Flinders University of South Australia have been participating in a project exploring the benefits of shared administrative services. The consultancy undertaken by Deloitte Touche Tohmatsu recommends streamlining administrative operations, to maximise the level of quality of administrative service and to achieve cost savings. The processes reviewed were in areas such as finance, procurement, human resources and property management. The universities established a Memorandum of Understanding to facilitate any future collaboration, and were to consider the recommendations of the report for further merging of services. The important factor is to strike a balance between maintaining independence for strategic and competitive advantages, at the same time minimising costs and achieving greater efficiency.

that manage and govern significant infrastructural investment by the Crown, will be required to demonstrate both strategic capacity and alignment with national goals if their activities are to continue to be supported from the public purse.

OBJECTIVE 1

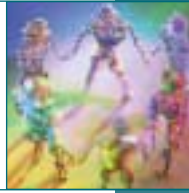
Improved strategic capacity and leadership at both governance and management levels

Better governance and leadership will be illustrated in more effective and robust institutional strategies. These will have a much greater focus on building quality and organisational capability. Decision-makers will focus on ensuring that students succeed rather than on simply increasing student numbers. Financial performance across the publicly-owned part of the system will be sufficiently healthy to maintain both organisational and system viability. Risks will be more effectively managed through investment in strategic alliances within the system as well as beyond. This will be evidenced by effective long-range strategic planning processes, strategic challenges being met in creative ways, and tertiary educators being encouraged to innovate in core teaching and learning activities.

Managers and governors will be investing energies in understanding the needs of community, region and nation and in forming value-creating connections of all kinds, both within the tertiary education system, and beyond it. Managers, councils, and boards will be committed to the development of internal provider cultures that are characterised by a 'make it happen' ethos.

These decision-makers will have access to improved system performance information (including benchmarks, sector averages and national and international best practice exemplars) to assist them in the preparation of high quality charters and profiles. The TEC will play a key role in encouraging the development of strategic vision and innovative leadership on the part of tertiary education providers and ITOs.

All tertiary leaders will be regularly encouraged by the TEC to take a fresh look at their distinctive strengths, at their contribution to national goals, and at the opportunities for providing learning differently and in more connected ways.



OBJECTIVE 2

Increased differentiation and specialisation across the system

All providers accessing public funds, whether public or private, will, with the support of the TEC, be making prudent and strategically-driven investment decisions as they position for excellence in areas of distinctive strength which reflect regional and national needs.

By 2007, there will be a variety of strategic alliances and relationships within the tertiary education system and between it and other sectors and communities of interest. Business will increasingly see the tertiary system as an investment partner. This greater collaboration will be supported and encouraged through funding policies, the work of the TEC, and the work of other transformation agencies such as FRST, Industry New Zealand, Trade New Zealand and the Teachers Council.

This emphasis on increasing system connections will have led to some rationalisation of the number of stand-alone providers. A growing number of TEIs, PTEs, ACE providers and ITOs are likely to be sharing programmes and services and may be delivering common programmes across regional and national alliances and distribution networks. They will have alliances with each other, with Crown Research Institutes, with iwi, with community and regional groups and with industry.

All providers and ITOs will have analysed their distinctive competencies and as a result the system will be characterised by greatly-increased differentiation and specialisation. The focus on system capability will have created a system that is driven by the need to build quality and strategic relationships, in order to make the best of scarce human and financial resources. The TEC will encourage greater co-operation in the development of qualifications and course materials, in the delivery of programmes and in the delivery of management or support services.

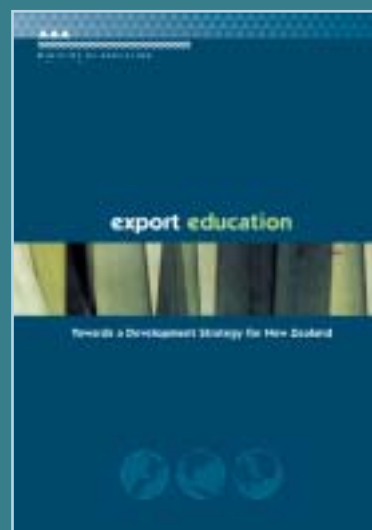
OBJECTIVE 3

Greater collaboration with the research sector, the creative sectors, industry, iwi and communities



The Tertiary Alliance

The Tertiary Alliance between Bay of Plenty, Northland, Tairāwhiti, Taranaki, and Wairariki Polytechnics, and the University of Waikato aims to collectively provide the greatest possible access to tertiary education in the regions. Together the institutions have developed programmes that reflect their co-operative approach to education. The Unitech Certificate, for instance, allows students to study for a qualification offered jointly by a polytechnic and the University of Waikato. Another particular benefit is the agreed recognition of each other's qualifications, providing students with a much greater level of flexibility within their tertiary education.<http://tta.ac.nz>





Ngāi Tahu Partnership

Te Tapuae o Rehua is a joint venture between Ngāi Tahu Development Corporation and five tertiary institutions (Christchurch College of Education, Christchurch Polytechnic Institute of Technology, Lincoln University, University of Canterbury and the University of Otago). Its core role is to facilitate and support the provision of high-quality education opportunities for Māori and to encourage scholarship, personal development and leadership by drawing on the collective skills and resources of partner organisations. Te Tapuae o Rehua aims to:

- improve Māori participation, retention and achievement in tertiary education;
- ensure quality of course content, delivery and environment for Māori;
- provide Māori intellectual leadership, scholarship and research in Te Waipounamu;
- establish a national and international reputation as a tertiary education facilitator for Māori.



International Connections

The University of Auckland has become a member of Universitas 21, an international association of 18 leading research-led universities, which has created a framework for international collaboration, capitalising on the established reputation and operational reach of each of its members. The aim of its collaborative initiatives is to minimise unnecessary duplication and generalise good practice. For example, a sophisticated electronic catalogue has been developed to facilitate the sharing of multimedia and courseware materials on a restricted licence basis and the development of new materials. <http://universitas.edu.au>

Providers within the system will be developing more effective collaborations and linkages to other aspects of economic, social and environmental development. The Vote: RS&T output classes and the Centres of Research Excellence (CoREs) will build cross-organisational and cross-disciplinary capability in key areas. Collaborative ventures of all kinds between universities, polytechnics and CRIs will be in place. All providers will be connecting at both national and regional levels with their stakeholders and communities of interest. ITOs will create more strategic links with enterprise and unions and will connect more effectively with the work of Industry New Zealand, and with regional and local government agencies and initiatives.

Tertiary providers will also be committed to preparing their graduates for work in a global marketplace. They will have established relationships and connections with international education providers in order that New Zealand can access qualifications, teachers and learning materials with a global flavour, while at the same time ensuring that a distinctively New Zealand element is a part of all programmes of study. Providers will facilitate international student exchanges and internships, and ensure the professional development of teaching and research staff by means of exchanges and sabbaticals. The TEC and providers will measure their activities against international benchmarks, and will in many areas be exceeding them.

OBJECTIVE 4

Sustainable growth of export education capability centred on a reputation for quality teaching and pastoral care

Trade in education services and the movement of skilled labour will have increased significantly. Underpinning New Zealand's success in attracting students will be a growing reputation for quality and the pastoral care of students. Providers will have collaborated to enhance and protect New Zealand's image and will have growing links with international providers. These will be increasing opportunities for New Zealand students as well as increasing revenues to New Zealand from export education. These development strategies are more fully outlined in *Export Education in New Zealand: A Strategic Approach to Developing the Sector*.

OBJECTIVE 5

A stronger system focus on teaching capability and learning environments, to meet diverse learner needs

Providers will invest, through strategic human resource planning, in the recruitment, retention and professional development of their teaching and research personnel and will reward innovation and excellence.

By 2007, global trends in e-learning will have enhanced both 'richness' (in terms of potential for individual customisation, and responsiveness to different learning modes) and 'reach' (in terms of remote, virtual or community-based provision) for learners and providers. As described in *Highways and Pathways: Exploring New Zealand's E-Learning Opportunities*, such developments will not be viewed narrowly as a 'distance education' development, but as a paradigm shift in core delivery which has the potential to improve quality, to increase participation by particular groups of learners, to change cost structures, and to change distribution and delivery methods. Providers may be realigning cost structures to invest less in traditional classroom delivery methods and more in student support services such as personal learning plans and career guidance. In view of the significant costs involved in online curriculum development, providers will be co-operating both nationally and internationally to purchase or develop shared programmes.

OBJECTIVE 6

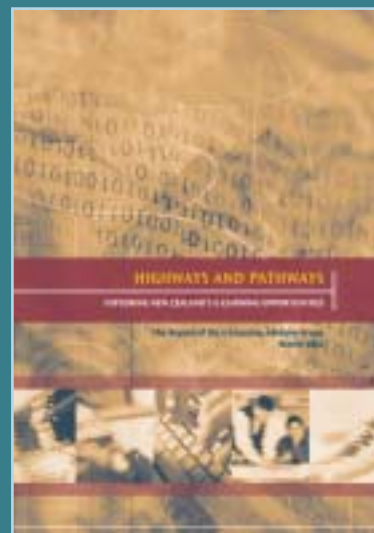
Learners and the wider public have confidence in high levels of quality throughout the system

The New Zealand Qualifications Authority (NZQA) will be continuing to refine, develop and enforce quality assurance measures and benchmarks, while facilitating innovative responses to changing needs. NZQA will have developed a strong working relationship with the TEC in order to ensure effective communication with providers regarding quality management and assurance issues.



Open Polytechnic

The Open Polytechnic of New Zealand is the country's specialist provider of open and distance learning at tertiary level, teaching over 30,000 students a year, offering over 130 programmes and 1300 courses. Open learning means that innovative techniques are used to meet the needs of learners. Enrolments are taken at any time for most courses, student numbers are not limited and no previous qualifications or experience is required. Course materials and assessments are sent to the home or workplace, enabling students to determine their own study schedule according to the demands of their work or personal life. A freephone service also provides instant access to lecturers for study support. The value of such flexible tertiary courses is evident in the fact that over three-quarters of the polytechnic's students are already in paid employment, and are nevertheless able to study part-time to enhance their career opportunities. 74% of students are over the age of twenty-five. <http://www.topnz.ac.nz>





Centre of Assessment of Prior Learning New Zealand

Otago Polytechnic, Christchurch Polytechnic Institute of Technology, Universal College of Learning and Manukau Institute of Technology have assumed a leadership role in the implementation of Assessment of Prior Learning (APL) in the country. The Centre for Assessment of Prior Learning New Zealand (CAPL NZ) has been established in response to the needs of adult learners with experience in their chosen field, who wish to gain qualifications.

APL is a process that uses a variety of tools to help learners reflect on, identify, articulate and demonstrate past learning. This has been acquired through study, work and other life experiences and is not recognised through formal transfer of credit mechanisms. Past learning is evaluated against established academic/unit standards so that credit can be awarded and qualifications achieved. The benefits of the programme are three-fold. Candidates benefit from the recognition of their past learning in the form of actual qualifications, employers are provided with measurable results, and the community is rewarded by the promotion of a lifelong learning culture in the workplace and increased connectedness between polytechnics and employers.



University of Waikato

The University of Waikato is taking advantage of the benefits of e-learning. April 2000 saw the graduation of the first students to gain their Bachelor of Teaching through papers taught by interactive media in the Mixed Media Programme. The students were the first in New Zealand to graduate with a 'cyber-degree'. In July of the same year, the University launched its Bachelor of Electronic Commerce degree. This is New Zealand's first degree in electronic commerce and one of only a few in the world. In recognition of the e-learning breakthroughs achieved by the University, Waikato was awarded the Telecommunications Users Association of New Zealand Award for 'Excellence in innovation, customer satisfaction and demonstrated need in terms of telecommunications applications'.

By 2007, students will have high expectations of teaching quality, will expect choices with regard to learning contexts and forms of delivery, and will require quality support services. Providers will be responsible for meeting the learning needs of many different audiences. Tertiary educators will be actively exploring flexible delivery modes. They will be encouraged to adopt and replicate international best practice in teaching and learning whether in an institutional setting, or in workplaces or communities. They will be active in exploring pedagogical innovation, and in understanding distinctive pedagogies which meet the needs of Māori learners. Educators will be using innovative approaches to enhance the retention and success of Pacific students. Providers will also have developed support services that are designed to assist students with disabilities to participate and succeed in tertiary education.

OBJECTIVE 7

A coherent and reliable system of qualifications, learning recognition and credit transfer

These new modes of access and delivery will have caused us to re-examine ways to measure, recognise and provide credit for learning. Assessment centres, diagnostic and recognition of prior learning (RPL) devices, credit transfer arrangements and credit recognition registers will make it easier for learners to build from their knowledge and skills base and will enhance portability of qualifications.

NZQA will work with tertiary education organisations and stakeholders to develop and extend the reach of the Register of Quality-Assured Qualifications. The Register will become the central and authoritative source of information on qualifications. It will be the basis for the development of improved systems of RPL and credit transfer.

It will be important to ensure that the information content of a qualification has integrity in terms of the information it conveys about the learning that has been demonstrated. A proliferation of qualifications that simply reflect the desire of providers to market themselves relative to competitors will be discouraged.



While the successful (public or private) tertiary system provider, agency or ITO of the future will take many different forms, a number of critical success factors will be common. Successful tertiary education organisations in the New Zealand knowledge society of tomorrow will, amongst other things:

- > have clearly-articulated and focused individual missions and strategic visions;
 - > be financially and academically viable, including the generation of financial 'buffers' for strategic reinvestment;
 - > understand their niche strengths, and focus on areas of distinctive advantage to their region and for New Zealand;
 - > be aligned to business, unions, industry, science sectors, communities and regions in terms of curricula, research, innovation and careers;
 - > be a vital part of economic, social and environmental development regionally, nationally and internationally;
 - > continually maintain international standards of excellence in teaching and research;
 - > not rely on Government alone to make the difference;
 - > take responsibility for improved outcomes for Māori communities;
 - > take responsibility for improved outcomes for Pacific learners;
 - > be involved in strategic alliances, partnerships and networks of all kinds;
 - > diversify revenue streams;
 - > prioritise continued investment in technology and teaching/research capability;
 - > demonstrate and embrace new teaching modes that recognise different styles of learning;
- > have staff who are experimenting with discovery-based and inquiry-based approaches, in institutional and in workplace or community settings;
 - > have students and staff who are making innovative use of new learning technologies;
 - > view technology as a way to achieve strategic goals rather than as a general resource;
 - > have high standards for delivering on their missions;
 - > be actively involved in research where they are providing degree-level education;
 - > serve as the R&D arms of economic clusters where they have a research focus; and
 - > be continually evolving to meet the challenges of a global educational community transformed by technology in a new global economy.

Submissions to the Draft Tertiary Education Strategy Dec-Feb 2001-02

"We welcome the endorsement of visionary leadership and future-focussed strategies, having taken many initiatives in new and applied research, diverse modalities of teaching delivery and more travelled pathways of stakeholder communication. We have strengthened greatly our system of governance and management to be ready for the new challenges."

Submission by Massey University

"Governance needs teamwork, morality, mutuality, conscience and integrity. It needs a 'working together for New Zealand' perspective rather than the parochial, empire-building competitive perspective which has been very wasteful of resources in the recent past."

Submission by Terry and Jenny McGrath

"Currently tertiary education has relatively low visibility within the region and yet it is apparent that there is significant need for high quality, leading edge tertiary education bundled around the sectors supporting the key competitive advantage. Tertiary education must be inclusive of the development of culturally-inclusive skills and understandings, which not only support the 'knowledge economy', but are pre-requisites for personal and social well-being, healthy civil society and strong national identity."

Submission by Ministry for Culture and Heritage Te Manatu Taonga

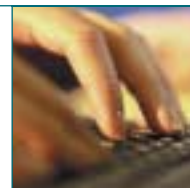
"Participation by industry, employers and employees is critical to achieving a tertiary education system that is able to contribute to the

continuing growth and success of that particular industry. The tertiary sector will only understand and be responsive to the requirements for education in the primary industries if industry is involved at all levels of education. Federated Farmers acknowledges that industry must also ensure that it has the willingness and capability to be involved in this way... Developing and improving the accountability of tertiary providers through active and on-going stakeholder involvement and monitoring by the TEC is key to transparent and efficient use of Government funding."

Submission by Federated Farmers of New Zealand (Inc.)

"Partnerships and collaborations will mean rationalisation of providers or locations of programme delivery."

Submission by Palmerston North City Council



Strategy Two:

Te Rautaki Matauranga Maori – Contribute to the Achievement of Maori Development Aspirations

“If there is respect for the earth and each other, peace and love in our lives and tolerance, trust and the will to understand. If there is forgiveness for past wrongs, diligence and integrity apparent in all our efforts, thence unity of purpose will forever be present within Māoridom.” Te Arikinui Te Atairangikaahu, 2001



Where do we want to be by 2007?

The next five years will mark the beginning of a transformation within the tertiary education system. Māori communities have high expectations and aspirations for tertiary education. In the coming five years the reformed tertiary education system will begin to respond to these aspirations as never before.

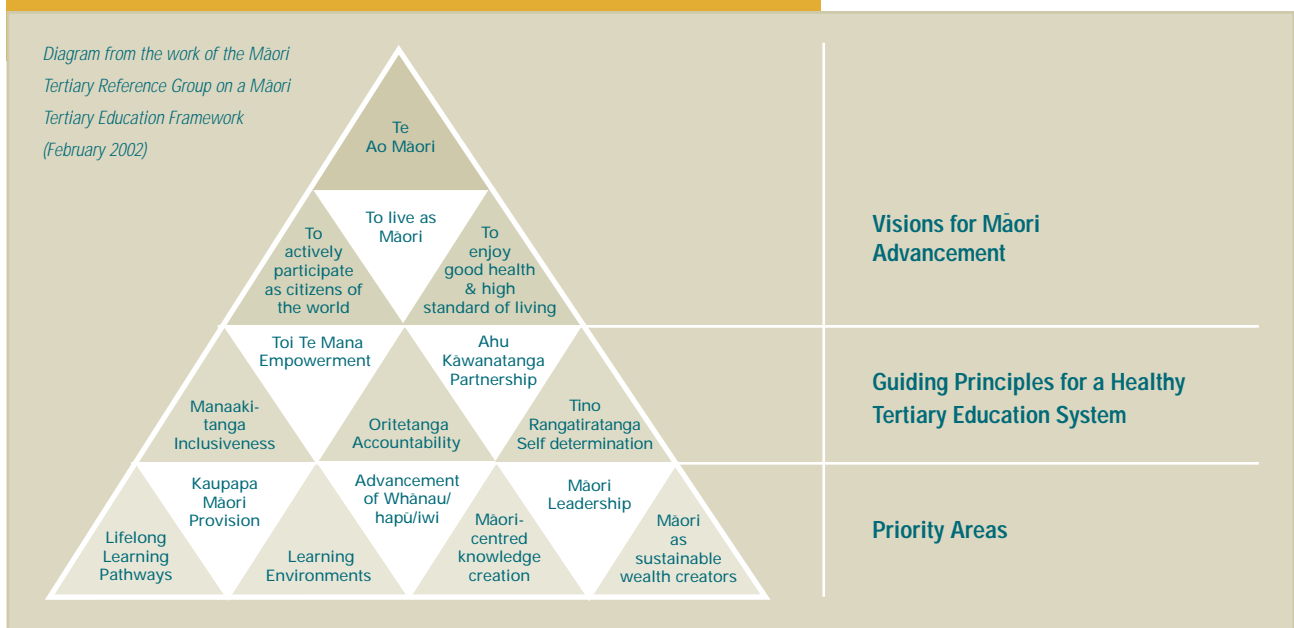
In 2007, consistent with the Treaty of Waitangi, Māori will exercise greater authority and responsibility within a tertiary education

system that is working increasingly in partnership with Māori communities. The system will take greater responsibility for the success of Māori students and be more accountable to diverse Māori realities. Māori communities will increasingly engage with a tertiary education system that is more supportive of Te Ao Māori (the Māori world) and which is inclusive of tikanga Māori.

E kore au e ngaro, he kākano i ruia mai i Rangiatea

Māori communities, through the Hui Taumata Mātauranga,

FIGURE THREE: MĀORI TERTIARY EDUCATION FRAMEWORK





Ngā Pae o te Māramatanga (Horizons of Insight) - The National Centre for Research Excellence for Māori Development and Advancement

This new Centre will focus on integrated solutions using a multidisciplinary approach that has the potential to significantly address social outcomes for Māori in New Zealand. The Centre will focus on research in education, health and science to improve outcomes for Māori. Many leading Māori researchers will be involved in the Centre and it is the first time such a large group of Māori researchers has collaborated in this way. It involved a partnership of two Wānanga, four universities, and one Crown Research Institute. It is planned to extend these collaborative links in the course of the Centre's development.



Tūranga Ararau

Improving access to tertiary learning for Māori is a mission of Tūranga Ararau, a private training establishment run by Te Runanga o Tūranganui a Kiwa. All courses and services provided through this PTE are related to iwi development. One example is the first year of the Diploma in Forestry Management. The aim of the course is to promote Māori into the management and technical areas of the industry. Provision of the course locally provides for the large areas of forest in Māori ownership or on land subject to Treaty claims. It also serves the high percentage of Māori in the industry seeking educational opportunities to reach more challenging and rewarding positions. <http://www.trotak.iwi.nz>

endorsed three goals for Māori educational advancement. These goals were:

- to live as Māori;
- to actively participate as citizens of the world; and
- to enjoy a high standard of living and good health.

A quality tertiary education system for Māori is one that meets these goals. The system will reflect Te Ao Māori and recognise and be inclusive of Māori realities. Space will exist within the system for a diversity of Māori/whānau/hapū/iwi realities as expressed through Mātauranga Māori (knowledge and intellectual tradition that belongs to Māori).

Five years from now, tertiary education will better enable Māori to actively participate as citizens of the world. The tertiary system will be more effectively meeting Māori expectations that tertiary education will enrich their lives and open doors to the knowledge society, to the economy, to the arts and sciences, to understanding others, and to active citizenship.

By 2007, we will have a tertiary education system that is making growing contributions to the good health and high standard of living of Māori, and which is better able to support Māori learners. The tertiary education system will have a greater capability to reflect the 'whole learner' – recognising that, for Māori, tertiary education contributes to a holistic vision of wealth that is cultural, social, economic, environmental, and spiritual.

Providers and organisations in the tertiary education system will be cognisant of, and more responsive to, Māori community values, the additional obligations of Māori learners with young whānau, and groups of Māori learners with particular needs and aspirations such as Māori women, older learners returning to education, and disabled Māori.

OBJECTIVE 8

**Tertiary education leadership that is effectively
accountable to Māori communities**

In the past, Māori communities have been the catalysts for significant



Māori development in the tertiary education system. In the future, all parts of the tertiary education system will share a collective responsibility for ensuring that outcomes are achieved that are consistent with the expectations of Māori communities. By 2007, this accountability will be evidenced through more effective engagement with Māori communities and a willingness by providers to support regional goals that reflect Māori aspirations.

A tertiary education system that is better connected to Māori communities is one that will be consistent with the Treaty of Waitangi at all levels of operation. It will be a system where Māori share authority and responsibility in partnership arrangements and one where Māori are increasingly involved in the delivery of education. By 2007, tertiary education organisations will increasingly have structures and processes of governance that can more effectively meet the expectations of Māori communities. Leaders throughout the tertiary education system will be driving this focus on greater accountability. They will have the understanding and capability to engage effectively with Māori communities.

By 2007, Māori will have a growing capability and capacity to exercise greater authority and leadership in tertiary education. Those in leadership roles throughout the tertiary education system will have created an environment where Māori leadership is nurtured and valued. Tertiary education organisations across the system will have developed strategies to increase their Māori leadership capacity and capability.

The importance of relationships with whānau/hapū/iwi as expressed through the Hui Taumata Mātauranga, iwi partnerships, and through wider Māori community consultation, will continue to be critical. The Government will continue to work with a growing plurality of Māori groups both within, and external, to the tertiary education system. A challenge in the next five years for Māori communities, Government and the tertiary system will be to recognise and build from the capability currently within Māori communities.

Comprehensive information on Māori participation, achievement and completion across all parts of the tertiary system will be readily

accessible to Māori communities. This information will facilitate informed discussion between Māori communities, institutions, providers and tertiary organisations, and the TEC around the performance of the tertiary education system to align with Māori expectations through the charters and profiles process.

OBJECTIVE 9

Strong and balanced Māori staff profiles within the tertiary education system

It is vital that Māori are a key part of tertiary teaching, administration, management and policy, building the capability of the system. A feature of the current tertiary environment in 2002 is the few Māori in positions of authority and decision-making right across the system – from government agencies to providers and institutions. This results in a high workload for those Māori who are working in the system. Also, Māori who are in positions of authority are often expected to assume greater, Māori-specific responsibilities; this should be recognised.

It is incumbent upon Government and all organisations within the system to ensure that workforce development occurs within the tertiary education system that results in a strong and balanced Māori tertiary education staff profile, and ensures culturally-safe working and learning environments for Māori. Professional development and training to promote Māori staff into leadership roles will be commonplace throughout the system and meaningful consultation with Māori communities will be a conventional part of the process when recruiting Māori into representative roles.

It will be vital that the new system enables a collective responsibility. All parts of the system have a role to play to ensure that the system is meeting the expectations of the Māori community. Shared decision-making and effective engagement with diverse communities, a broad range of system players and government agencies will demand people who are able to communicate, engage, deliver and be accountable to Māori.



Māoridom has never lacked outstanding leadership

One such leader was Sir Apirana Ngata who, in the 1930s, through vision, intelligence, and skilled leadership created an impetus for social and economic reform that ensured a place for Māoritanga in New Zealand's tertiary education system.



OBJECTIVE 10

Quality programmes that recognise Te Ao Māori perspectives and support the revitalisation of Te Reo Māori

Ko te manu i kai i te miro, nōna te ngahere, ko te manu i kai i te mātauranga, nōna te ao.

Quality will continue to be central to Māori expectations of tertiary education. By 2007, New Zealand tertiary education will be developing a reputation for excellence against international quality benchmarks. In addition, New Zealand tertiary education will be developing a reputation of excellence in quality for Māori.

The Māori language is the gateway to an understanding of Māori culture and values – of Te Ao Māori. It is an intrinsic part of the Aotearoa/New Zealand personality. It is imperative that Māori be a language of communication across all communities and accessible to all New Zealanders. The tertiary system has a key role to play in the preservation and growth of Te Reo Māori.

In 2007, there will be improved co-operation and co-ordination across the tertiary sector in affordable Māori language provision. Improved linkages between different parts and sectors within the tertiary education system will be supporting Te Reo Māori learners to access provision at appropriate levels, and will recognise prior learning. It is essential that the tertiary system can support fluent speakers of Māori to extend their language, those who are learning Māori as a second language, as well as people who wish to learn through the medium of Māori language.

A key feature of the next five years will be the development of a tertiary education system that strongly supports Te Reo Māori revitalisation. This heightened capability will include improved pathways for Māori language learning in the tertiary education system that are complementary to national Māori language aspirations. Māori language initiatives and developments in the tertiary education system will build on the success of kōhanga reo, kura kaupapa and other Māori language provision. E-learning, community education, distance programmes, Māori language literacy, marae-based delivery and



research will continue to develop and expand Māori language delivery strategies in the tertiary education system.

The demand for early childhood, primary and secondary Māori language teachers will continue to grow. The tertiary education system will have enhanced its capability in Māori teacher training and support, particularly Māori-medium teachers across all parts of the compulsory curriculum. Comprehensive in-service support for Māori language teachers will have developed at a regional level in partnership with Māori communities and will be providing effective pedagogical and linguistic support to meet the needs of these communities.

The tertiary system will continue to have an integral role to play for Māori research as evidenced by a focus on increasing support for developing Māori research capability. Māori understandings of research can be seen from two perspectives – one is around Māori ways of knowing (in all areas of research), and the other is around research about Te Ao Māori. These two perspectives will continue to be developed in the tertiary system, with further nurturing and support provided as required to ensure New Zealand has a strong Māori research base. This research base will contribute to Māori tertiary education goals, to capability building and to Māori innovation.

OBJECTIVE 11

Robust options for kaupapa Māori tertiary education that reflect Māori aspirations

By 2007, more Māori will be participating in tertiary education. A broad range of programmes from foundation to post-graduate level that reflect Māori community aspirations will be in place, and Māori will be participating and achieving in a broader range of subject areas. The range and depth of kaupapa Māori education will be better meeting the aspirations of Māori communities, and in particular will be able to meet the expectations of greater numbers of Māori learners leaving kaupapa Māori compulsory schooling environments.

Specifically, there will be greater numbers of Māori achieving in fields critical to the development of Māori, and the wider New Zealand community, such as natural and applied sciences, information technology, and research based in Māori intellectual tradition. Māori learners who have commenced entry-level study will be supported and encouraged to continue into higher qualifications.

Māori will continue to innovate and challenge through the use of both Māori and western intellectual research traditions. The development of wānanga and a growing Māori research capability (in terms of Māori researchers and Māori research excellence) will mean that Māori will be accessing higher levels of research funding for research relevant to Māori communities, and to wider research communities both in New Zealand and internationally. An increased Māori research capability will also be contributing to raising living and health standards as Māori researchers work with their communities in fields such as public health, education, and the sciences.

The existing three wānanga will be working in partnership with the Crown to provide a growing range of quality learning opportunities and in the development of their research and teaching capabilities. These providers play an important role in supporting strong kaupapa Māori pathways at tertiary level.

These wānanga will have grown and developed further collaborative arrangements with institutions nationally and overseas. The strengths of other Māori providers will be recognised through the work and focus of the TEC and more generally through wider tertiary education policies. Building quality and depth of provision rather than breadth will be a key focus for policy.

Indicators will need to be developed that enable monitoring and evaluation of progress against this goal. Government agencies in particular will be working with Māori communities on quality management and performance indicators for Mātauranga Māori, tikanga Māori (Māori custom) and for tikanga ā iwi (iwi custom). This is likely to include consideration of the best ways to develop effective quality assurance mechanisms for Māori qualifications and Te Ao Māori providers of tertiary education.

OBJECTIVE 12

Increased participation by Māori in both a broader range of disciplines and in programmes that lead to higher-level qualifications

For the past two decades there has been phenomenal growth in Māori participation in tertiary education, particularly of Māori women. In 2007, there will be increasing numbers of Māori participating in tertiary education as a result of demographic trends and of greater numbers of Māori engaging in lifelong learning. Māori learners will be successful in greater numbers, at higher levels, and across a boarder range of tertiary education.

To do this, the tertiary education system will need to build effective accountability relationships with Māori communities, develop effective Māori authority and leadership throughout the system, and be guided by whole-of-government strategies aligned to tertiary education success. The system will need to better understand, and be responsible for, the needs of Māori learners through research that identifies the barriers and conditions for Māori success in tertiary education. In addition, the tertiary education system will raise aspirations for Māori in tertiary educational achievement through communication and interaction with Māori/whānau/hapū/iwi.

Pathways from foundation education into higher levels of tertiary education will be better integrated, and easier to navigate as the parts of the tertiary system work together to facilitate ease of lifelong learning.

Non-public Māori tertiary education providers will continue to provide high-quality education that meets the needs of specific groups of Māori learners. All institutions will be taking greater responsibility for the education success of Māori students. They will also have the staff capability to support the quality teaching of Te Reo Māori and supporting the ongoing development of Māori.

The tertiary education system will have a crucial role in empowering Māori learners through foundation skills education that builds on

recognition of prior learning and recognises achievement through credits on the National Qualifications Framework. The role of kaupapa Māori foundation education will continue to be important in bringing Māori learners into tertiary education and supporting them through to higher qualification levels.

Policies within the compulsory schooling system for many Māori learners will be increasingly equipping and supporting Māori learners to achieve the educational thresholds that are essential to effective tertiary study.

OBJECTIVE 13

A tertiary education system that makes an active contribution to regional and national Māori/whānau/hapū/iwi development

Whānau, hapū, iwi and the wider Māori community have specific expectations and aspirations for tertiary education. Some arrangements, such as Te Tapuae o Rehua and key providers and institutions in the South Island, have specific goals and accountabilities. By 2007, acknowledgement of the economic and cultural variances from region to region will be a feature of tertiary education profiles and charters. Hapū and iwi aspirations will be reflected in governance arrangements and the range of provision from tertiary education organisations within each region.

Māori communities will be working to a greater degree with local and regional tertiary education providers and industry to ensure the success of regional economic development plans. Collaborative arrangements between Māori communities, industries, local and regional government will be reflected in the range of regional tertiary provision. Tertiary education organisations will have entered into collaborative arrangements to ensure regional expectations are being met and will be working closely with hapū and iwi to achieve the goals of their education strategies and plans.

Some providers and institutions will have negotiated collaborative arrangements with Māori communities in a broad range of areas and subjects including foundation education, research initiatives and

governance arrangements. Specific partnerships such as those between the Ministry of Education and iwi will continue to develop on a basis of agreed expectations and goals with dual accountabilities for ensuring success. Māori communities will also continue to develop partnerships with the TEC and other government agencies.

Innovative strategies, including e-learning and marae-based delivery, will enable access to a greater breadth and depth of tertiary education for regions that are geographically remote. Schools and marae will also be key links with the community in regional tertiary education provision. Local and regional Māori communities will be accessing tertiary education that includes their reo-ā-takiwa (dialect) and tikanga ā iwi (iwi custom) and contributes to recognised qualifications.

Submissions to the Draft Tertiary Education Strategy Dec-Feb 2001-02

“The Crown and iwi must work together to develop a strategy for Māori tertiary education that...is inclusive, fully acknowledges iwi/hapū as the Treaty partner and not just another sector group with different needs.”

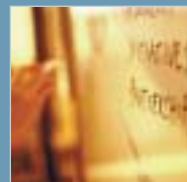
Submission by Te Rūnanga o Tūrangānui a Kiwa

“The fundamental principles of the Treaty of Waitangi will determine the relationship between tangata whenua and the Crown and shape the development of tertiary education priorities for the future.”

Submission by Te Waka Pu Whenua Māori Adult Education Centre

“I support the focus on the needs of Māori learners, particularly the direction to ensure that opportunities and resources are provided for Māori economic and social development. I agree that Māori language, culture and community values make an essential contribution to New Zealand's future.”

Hui participant



Strategy Three:

Raise Foundation Skills so that all People can Participate in our Knowledge Society

"Literacy is a powerful determinant of an individual's life chances and quality of life; overall literacy has a demonstrable effect on the well-being of economies and societies." OECD, 1997



What are foundation skills?

The demands of our contemporary world require learning to be lifelong. Foundation skills are those skills that underpin the ability to learn and to keep learning. Although a precise definition of 'foundation skills' is difficult to confirm, the term generally refers to a bundle of skills such as literacy, numeracy, technological literacy, communication skills, teamwork, 'learning to learn' and self-confidence skills. Literacy (reading, writing and oracy) may refer to both English and Te Reo Māori. These foundation skills are the same core skills that are described by other names in different nations, (for example, 'key skills', 'basic skills', 'essential skills', 'literacy defined broadly') and these names refer to a similar set of identifiable skills that all people require.

Without these skills, people struggle to continue learning, to keep abreast of technological advances that will change the way their daily lives are led, and to adapt to workplace change throughout their lives. These skills provide the base upon which further, higher-level generic and specialist skills can be developed.

Foundation skills are increasingly critical, as businesses which traditionally employ people with limited foundation skills are now demanding basic literacy and numeracy skills in 'factory floor' jobs to meet international quality and safety standards. Many are having to develop foundation skills in their existing workforces,

and struggling to find new employees with the required skills. These needs will become more pronounced in the future.

It is imperative, therefore, that the education system delivers these 'foundation skills' to all citizens to enable them to continue learning throughout their lifetime. The greatest investment in foundation skills acquisition will continue to be in the compulsory education system, and here the strong focus on literacy, numeracy and ICT skills, and on improving retention and achievement before learners leave school, is of critical future importance.

The responsibility of the tertiary education system is to facilitate access to learning foundation skills for those adults and young people who have not benefited from improvements in the compulsory system, or whose skills have become 'out of date'. This is a priority area because the foundation skills sector has traditionally received little attention and resources and the learners engaged in it are often those with the least influence on decision-making.

Where do we want to be by 2007?

OBJECTIVE 14

Significantly improved adult foundation skill levels, achieved through increased access to foundation education in a range of learning contexts

By 2007, New Zealand's tertiary education system will encompass a well-integrated system of foundation education provision, so that a range of clearly-identified pathways is available for learners to acquire foundation skills.

The traditional method of delivery for foundation skills is classroom-based in the school environment. However, a broad range of learning contexts is now available for adults to access foundation education. This includes the workplace, the home and family environment, local community-based provision (for example, evening classes in tertiary providers or schools, adult education providers, churches), and iwi, hapū and whānau-based learning (for example on a marae). Specific programmes are funded through Training Opportunities and Youth Training programmes, foundation and bridging courses at TEIs, levels 1 and 2 education purchased through Industry Training Organisations, and home, work, marae or community-based literacy and ESOL programmes. This breadth and diversity must be maintained and extended in the future to meet the wide diversity of learning needs.

Adults and youth who have not gained key foundation skills through the compulsory schooling system will in future be able to access quality foundation education programmes in contexts and settings relevant to them – including their family, work, an institution, their local communities, schools, churches and marae.

By 2007, we will have achieved improvements in the number and diversity of learners accessing and succeeding in obtaining foundation skills through the tertiary sector, particularly amongst priority groups with lower literacy levels, including Māori, Pacific, migrants, refugees, 'at risk' youth, long-term unemployed, learners with disabilities, and those with few or no qualifications.



Manukau Institute of Technology's Otarā Future Learning Village

The MIT has worked with churches in the local area and their Pacific congregations in a community education outreach programme. The initiative, which included a number of churches throughout the region, focuses on subjects that contain foundation skill elements such as food safety, budgeting, computing and English. Classes were located initially at the churches, moving to MIT when the Institute's facilities needed to be accessed. The programme organisers say that computers were a key to getting many learners into a tertiary institution for the first time in their lives and introductory courses are now delivered in Cook Island Māori, Niuean, Samoan and Tongan. A key to the success of the Otarā Future Learning Initiative is community ownership. MIT firstly worked with church ministers and then took every opportunity to talk directly with the congregations and local Pasifika community groups about their learning needs. The Institute and the churches together are committed to making Otarā the "best education village in the future".



Te Waka Pū Whenua, Taumarunui

Te Waka Pū Whenua is a Māori Community Adult Education Centre that provides learning opportunities and support for around 600 Māori adults a year. The focus is on te reo and tikanga Māori as mediums for lifting foundation skills, using a range of teaching methods. For example, language and oral literacy skills are developed through Māori oratory and creative story telling, people's sense of self worth and identity are developed through studies on Māori values and belief systems. Communication and teamwork skills are integrated into learning about cultural concepts and realities, such as ancient waiata and their associated protocols, and the art of rāranga (flax weaving) and related traditions. Te Waka Pū Whenua is a community-based, learner-driven, Māori-operated ACE provider that is successfully engaging Māori adults in learning and lifting their foundation skills.



Workbase – The National Centre for Workplace Literacy and Language, and Norske Skog Tasman

Te Whare Ako (The House of Learning) is situated at Norske Skog Tasman's Kawerau mill and has operated since 1994. While learning is voluntary, all employees are encouraged to pursue learning opportunities linked to an individualised learning and assessment plan. As with most large manufacturing sites the use of computers is widespread and computer literacy has become a critical learning activity. This has provided learners with an opportunity to call literacy skill development "learning the computer" and so avoid any stigma. Using te reo Māori, which is the first language for many employees, as a medium for learning has been another effective tool.

Given the diversity of communities and potential needs, the foundation education sector must have the capability to offer quality provision in a broad range of learning contexts.

Because of the increasingly knowledge-based nature of the economy, many more employers will regard foundation skills as a sound business investment. Best practice workplace literacy programmes, like the partnership between Workbase and pulp and paper industry giant Norske Skog Tasman, will be commonplace.

OBJECTIVE 15

Clearer accountability for quality and outcomes within foundation education, including a greater focus on assessment

From the disparate provision that typified the foundation education sector in 2002, foundation skills provision will be well-integrated with the wider tertiary system, employers, communities, Industry Training Organisations and the education system in general.

There will have been a transition to funding arrangements that are consistently equitable and transparent, and which recognise the diverse range of learning contexts for foundation skills (such as workplaces, classrooms and communities).

Foundation skills providers will be of high quality, and their programmes will be targeted to priority learner groups with low foundation skill levels, such as Pacific peoples, Māori, disabled peoples, refugees, those disadvantaged in the labour market, and unemployed or at risk of becoming so. These providers will have the ability to identify needs that may exist in all learning contexts.

There will be improved quality assurance systems, widespread demonstration of good practice teaching, and consistent measuring of learner achievement across the foundation education sector. The outcomes, credit achievement and quality provision focus of Training Opportunities and Youth Training in 2002 provides one model for implementing quality systems.



OBJECTIVE 16

A common understanding of the definition of foundation skills and of best practice teaching in this area

Rather than still being a dedicated but unrecognised sector dependent on the commitment of a small number of talented tutors, the efforts of volunteers, and the goodwill of benevolent employers, by 2007, foundation education will have grown into a respected and recognised sector and will be given high priority within institutional and employer policy and practices.

It will be characterised by effective use of diagnostic and assessment tools, clear articulation of learning achieved, and increased capability of teachers. Providers will be encouraged to use innovative and flexible delivery methods to meet the increasingly diverse range of learner needs the system will identify and learning contexts it will provide. Research will form the basis of the identification of learner characteristics and the sharing of good practice between foundation education providers.

By 2007, New Zealand will have an assessment system that identifies and defines the foundation skills critical to participation in society and the labour market, and acknowledges learner progress in these skill areas through the National Qualifications Framework.

It is acknowledged that foundation skills can be acquired by learners without that learning being recognised as a qualification. However, in order to assure learners, employers and other tertiary providers that the learner has obtained the level of skills necessary to rise to the next level of learning, recognition of achievement is important. Foundation skills will be clearly articulated in curriculum and qualification documents, to an internationally-recognised standard. International examples of foundation skills' assessment, national standards and articulation of learning achievements will be utilised by New Zealand practitioners.



ESOL Home Tutor Service

The ESOL Home Tutor Service provides English language tuition to almost 7,000 refugees and migrant adult learners throughout New Zealand. It prioritises refugee learners, and since 1998 refugee intakes have included 80 percent of pre-literate and semi-literate adults from countries with strong oral traditions. Refugee community leaders raised concerns about this situation and their request for support led to the development of a literacy training programme for community members who were unable to secure employment or education here. In 2001, the ESOL Home Tutor Service provided twelve hour per week bilingual classes in West Auckland for learners from Somalia, Ethiopia and Kurdistan. Teachers who can communicate with students in a common language can help them acquire more cognitively-demanding literacy skills that are needed in the New Zealand environment. Initial results from a parallel research study indicate that students made significant literacy gains and that their communities are strengthened to cope with the challenge of resettlement as a result.



Central North Island Forest Management Ltd [CNI]

This company offers pre-employment training, with two of the company's full-time assessors each in charge of a pre-employment training crew. These are people with no previous work experience who are long-term job seekers referred by the Ministry of Social Development. With the exception of a first aid certificate, the six-week course is all hands-on learning and trainees can achieve some basic unit standards in silviculture while they are there. While a few trainees have difficulty with the physical side of the job, for many the biggest problem is that they do not yet have the skills to manage the day-to-day discipline associated with holding down a job. Time skills, self-management, and motivation are sometimes quite foreign concepts to these trainees. Keen trainees are given as much opportunity as possible to acquire these workplace and life skills while they are on the crew. These courses offer a reward system to give trainees an incentive to learn. After two weeks on the course they receive some work equipment, and further rewards are given after four weeks. If they go on to complete the six-week course and are employed by CNI, they receive a full set of silviculture gear (safety gear, chainsaw, etc.), the cost of which the employee then pays back over time. Those who complete the six-week course are encouraged to become trainees or Modern Apprentices.

OBJECTIVE 17

Improved linkages between secondary and tertiary education, and improved staircasing for learners within tertiary education

From 1996-2002, around 10,000 youth annually (approximately 18-20 percent of school leavers in 2000) were leaving school with no qualifications. Over a third (37%) of all Māori youth have no qualification when they leave the compulsory schooling system. Māori uptake of foundation education reflects this statistic. By 2007, fewer young people will be in this situation, as the National Certificate of Educational Achievement and other National Certificates broaden the opportunities for success for learners, as there is improved co-ordination around 'at risk' learners between the Ministry of Education, education professionals, schools and communities, and as the results of the Literacy and Numeracy Strategy in schools begin to be seen amongst youth.

Links from school to work will also be stronger, and the system will attempt to ensure that all young people under 19 years will be engaged in education, training or employment. Programmes such as Modern Apprenticeships, Gateway and Māori Trade Training will be contributing strongly to this goal. The tertiary and compulsory education systems will engage collaboratively in lifting foundation skills, sharing best practice and ensuring all young people have pathways which enable them to engage in education and acquire key skills.

Learners who access the available foundation education opportunities will be able to build on the skills they learn and progress into higher - level qualifications and employment, with the skills necessary to succeed in those environments.

In 2007, higher education providers (such as universities, polytechnics, private providers offering qualifications at level 5 and above, and Industry Training Organisations arranging training at those levels) will either provide foundation skills programmes as a supported transition to higher study, and/or integrate foundation skills components into lower level qualification delivery, and/or have clearly-articulated pathways from specialist foundation skills providers into their programmes.



Universities will respond to this priority area by engaging in research about foundation skills acquisition, training teachers and tutors of foundation skill delivery and assessment, and supporting learners to staircase into their higher-level qualifications through bridging courses or links with foundation education providers. Foundation skills providers will ensure their learners pathway onto further education where appropriate, and will generally pay attention to the post-completion needs of learners and employers throughout the system to get maximum value from the education.

The National Qualifications Framework will build on individuals' previous learning and recognise and transfer credits between qualifications. The best practice partnerships endorsed in the review of Training Opportunities and Youth Training (TO/YT) will have expanded throughout the TO/YT sector to provide strong pathways for learners to build on their foundation skills elsewhere in the tertiary system, and within the workplace. These are described more fully in *Building Futures: The Final Report of the Review of Training Opportunities and Youth Training*.

In future, all tertiary providers will recognise that many of our most innovative and creative New Zealanders had a hard time getting started in education, and did not achieve at school, but made valuable contributions to New Zealand once they had attained foundation skills in other contexts.

By 2007, achieving the goals of the New Zealand Adult Literacy Strategy (see box overleaf) will be within reach, with increased opportunities for adult literacy learning, greater capability in the adult literacy teaching sector, and improved quality to ensure that New Zealand adult literacy teaching programmes and learning environments are world class.



Dunedin Craft Centre & Otago Polytechnic

Dunedin Craft Centre (DCC) and Otago Polytechnic have a close working relationship, and a particular characteristic of this is the alignment of DCC's Training Opportunities course content to reflect the skill requirements of Otago Polytechnic's higher-level qualification in ceramics, craft design and fine arts. As a result, graduates of the TO course can pathway directly onto the Polytechnic qualification. The two providers frequently interact with the Dunedin Craft Centre adapting its course to meet the Polytechnic's needs, and the Polytechnic providing advice and information to prospective students. As a result of this partnership, Otago Polytechnic now considers Dunedin Craft Centre graduates to be well-prepared to succeed at their institution, in terms of foundation skills, craft skills and study skills.



John Britten

John Britten was the New Zealand mastermind behind the internationally-successful Britten V-twin racing motorcycles and was the owner and director of Christchurch property and management company, Brittco Management Ltd. Britten was heralded in New Zealand and throughout the world as a clever businessman with a rare ability to transform dreams into a reality, a "visionary with the handyman touch". However part of the wonder of John Britten's accomplishments is the fact that he achieved so much despite having to overcome a reading disability, which held him back while he was a student at St Andrew's College. Nonetheless, after leaving school he completed a four-year mechanical engineering course at night school, obtaining a New Zealand Certificate in Engineering. One of Britten's greatest triumphs came in 1995 when New Zealand motorcycle rider Andrew Stroud won the world individual BEARS championship on one of the technically-advanced New Zealand-made Britten racers.



Hagley Learning Centre, Christchurch

The aim of the Hagley Learning Centre (located at Hagley Community College) is to provide a dynamic learning centre that provides persons who have left mainstream education with a second chance to achieve education and skill standards necessary for success in further training or employment. The curriculum, which focuses on foundation skills such as literacy, numeracy and computer skills, has a holistic approach to learning. In addition to being assigned an individual learning programme, and working one-to-one with tutors and in small groups, students also have the opportunity to take part in separate activities planned around their own interests. About half participate in classes at Hagley Community College in both mainstream education areas such as maths and English and in electives such as cooking and woodwork. After studying at the Centre, 70 percent of students go on to further training, mainstream tertiary education or a job. One of the key factors of Hagley Learning Centre's success is its commitment to professional development as an ongoing priority.



More Than Words: the New Zealand Adult Literacy Strategy

In May 2001, the Government released *More Than Words: The New Zealand Adult Literacy Strategy*. *More Than Words* provides a way forward to address the urgent priority of lifting many New Zealand adults' literacy to the levels required to function in a knowledge society.

The vision of *More Than Words* is: 'Over the long-term, all New Zealanders should enjoy a level of literacy which enables them to participate fully in all aspects of life – including work, family and the community – and the opportunity to achieve literacy in English and Te Reo Māori'.

The three long-term goals set out in *More Than Words* are:

- increasing opportunities for adult literacy learning;
- developing capability in the adult literacy teaching sector; and
- improving quality to ensure that adult literacy teaching programmes and learning environments in New Zealand are world class.

Much work has been done to implement *More Than Words*, with \$45.3 million over four years additional funding for adult literacy allocated in Budget 2000. Since May 2001, good progress has been made in developing quality standards and sector benchmarks. This work will continue as part of the related work on foundation skills arising out of the *Tertiary Education Strategy 2002 / 07*.



Submissions to the Draft Tertiary Education Strategy Dec-Feb 2001-02

"Foundation skills are not only necessary to enter the workforce or as a bridge to further study. They are usually critical, first and foremost, to enabling individuals to fully participate within society. There are adults in Aotearoa New Zealand who cannot make emergency telephone calls, who cannot hold a pen, who cannot identify with their cultural heritage, who cannot manage a household budget. Deficiencies in these and many more skills carry an economic cost."

Submission by members of the Adult and Community Education Reference Group to the Ministry of Education

"Schools have a vital part to play in the delivery of Adult Community Education in our local communities. We do this through consultation and networking at grass roots level with groups within our community. We provide first step, second chance learning as part of the staircase to the 'knowledge society'."

Submission by Tangaroa College Community Education

"Raising foundation skills so all people can participate in our knowledge society must be a priority."

Submission by Manukau City Council

"Literacy Aotearoa inc. welcomes the focus on foundation education. We understand the concept to refer to literacy provision and see the

emphasis as timely. Literacy Aotearoa inc. supports a whole-of-government approach to foundation education. We welcome the opportunity to explore the provision of literacy foundation education in partnership with other education providers."

Submission by Literacy Aotearoa inc.

"Literacy, numeracy, etc are the foundation skills most often referred to, but there must be awareness that people ... often face far greater obstacles to successful training outcomes and employment than those. Training providers often have to counter problems of drug dependency, ... poor personal hygiene, low self-esteem from seemingly having 'failed' in the secondary system, a pattern of anti-social behaviour, no concept of timeliness, poor physical fitness and a lack of motivation."

Submission from Westport Deep Sea Fishing School

"The sector is emergent rather than fully developed and the quality of provision is patchy. Quality assurance tools specifically relating to best practice delivery of foundation education need to be confirmed and implemented. Providers in the sector will need access to training and development and other support, research information and quality curriculum materials to meet quality indicators of best practice."

Submission by Workbase

Strategy Four:

Develop the Skills New Zealanders need for our Knowledge Society

"Education counts because every element of personal well-being, social progress, and economic development is bound inextricably to knowledge, learning and skills. At the deepest level of the individual and collective lives of all [New Zealanders], education matters." Education Counts – Report of the Special Study Panel on Education Indicators for the National Centre for Education Statistics, USA, September 1991



Where do we want to be by 2007?

New Zealand's continued prosperity and social well-being will rely on the skills and knowledge of its people and how successfully those skills and knowledge are applied to generate economic growth and to secure improved social outcomes. This will require, amongst other things, a good match between the skills demanded in the labour market and those delivered via education and training.

By 2007, the tertiary education system will be delivering a range of skills to benefit individuals, communities, employers, ethnic groups, regions and the nation as a whole. This will require greater connection between the tertiary system and stakeholders such as industry and business. Building on peoples' foundation skills, the critical higher level skills delivered by the tertiary system will be:

- high level and transferable generic skills being demanded by employers and learners, which are vital to achieving technological progress, economic growth and well-being in society; and
- highly-specialised technical skills in appropriate areas, including high priority development areas and in entrepreneurial and management skills.

OBJECTIVE 18

Accurate and timely skills forecasting capability

By 2007, there will be stronger evidence that the responsiveness of the tertiary sector has increased in terms of meeting the country's current and future skill needs. This improved responsiveness will result from more meaningful and effective communication and relationships between providers, ITOs and business.

The strong linkages between providers and ITOs and employer interests will ensure a better and faster match between the skills demanded in the labour market and those developed via education and training.

This will not only reduce the time-lags involved in meeting the economy's need for new skills, but also allow greater responsiveness in curriculum development and flexible modes of delivery. The importance of the tertiary system's role and contribution will be recognised more explicitly by more employers and professional associations, with more formal links with tertiary providers regarding course development. Most providers will regularly survey local industry groups to determine the generic skills they require, and will assess learners to measure the effectiveness of skill development in those areas.

A greater range of providers will be highly responsive to the specific education and training needs of their local regions. They will connect with local, regional, community, iwi plans, and Pacific communities, and they, and the TEC, will work closely with local economic transformation agencies to provide creative solutions to distinctive regional development needs. Such processes will support the development of relevant local specialisations within the overall programme portfolios of providers, or support collaboration



with local government entities, other providers, or provide e-learning options for the workplace or rural locations.

OBJECTIVE 19

Industries are supported in meeting their self-identified skill needs

Providers, in particular polytechnics and ITOs, will have a leading role in identifying the nation's skill needs for the future. This will be an important element in national and local skills-matching efforts. ITOs will have taken strategic leadership roles in their industries and will be planning for the future training needs of their industries and promoting training to meet those needs. Purchasing of skills training and assessment by ITOs will be innovative and flexible, well connected to the rest of the system, and will meet the needs of trainees, apprentices and businesses.

By 2007, the benefits of learning in the workplace will have been extended to employees in as many industries as possible. It will be far easier for small and medium-sized businesses to access workforce development, and industry training will have been extended to industries and enterprises where there is currently no formal training culture. Training, whether off-job learning in a polytechnic or PTE or on-job learning and assessment arranged by an ITO, or provided through institution-style courses, will be highly accessible and will respond to the skill needs of industry and employees. Employers and employees will be more prepared to co-invest in skill development and will see training and upskilling as a natural aspect of employment. This investment will 'pay off', as the workforce becomes more flexible and productive.

OBJECTIVE 20

Equity of access and opportunity for all learners

By 2007, some of the present imbalances in graduate outcomes will be starting to reverse. Women will be participating more in science and technology areas and in industry training. The numbers of Māori graduating at degree level in discipline areas that produce specialist skill sets will have improved, particularly in engineering, information



Accountancy Professional Development

The Institute of Chartered Accountants of New Zealand is this country's only professional accounting body and represents nearly 27,000 members in New Zealand and overseas. The Institute recognises the need for members to be continually updating their skills and knowledge and consequently offers both professional development programmes at a national and local level. These programmes are planned around core accounting competencies including tax, auditing, external reporting, treasury and finance, management accounting and personal and business development and are designed to meet market needs. A distance learning programme caters for more flexible time demands of students. There are courses on tax, project management and a series of modules offered in conjunction with the Open Polytechnic of New Zealand.



Whitestone Ltd, Oamaru

Whitestone Ltd undertakes work on local authority and Government infrastructure. Although the company has always been strong on training (one of their mottos is "training is a benefit, not a cost"), in the late 1990s they made a commitment to link formally with the industry training system. Training became linked to the National Qualifications Framework and was arranged by the New Zealand Contracting ITO.

The company has continued to train to national qualifications. By 2001 very high proportions of operations permanent staff in roading and bitumen were in training agreements with the Contracting ITO. Many of the staff have now completed national qualifications, and a number of others are on the verge of completing. Whitestone's manager became a board member of the ITO. The company has also developed a relationship with the Motor ITO and has begun to explore relationships with the Extractives ITO for their quarrying staff.

Industry Training Review 2001-02

Key improvements sought

The reforms in the proposed Tertiary Education Reform Act build on what has been achieved to date in industry training and seek to:

- improve the extent to which training responds to current and future skill needs;
- extend industry training to more people in a wider range of industries and occupations;
- make the system more responsive to the communities of interests it was established to serve; and
- better integrate industry training with the wider tertiary system.

Key changes in the Act to achieve these improvements

- combining the charter and ITO recognition (and re-recognition) processes to achieve better integration of industry training with the wider sector;
- encouraging stronger ITO performance by strengthening the recognition and re-recognition processes;
 - ITOs will be required to demonstrate evidence of satisfactory performance to be re-recognised
 - the TEC will be required to work with ITOs which are not adequately performing
 - the TEC will take into account the need to avoid fragmentation and facilitate joint arrangements when considering recognition or re-recognition of an ITO;
- encouraging a more strategic focus by requiring ITOs to provide leadership not only in terms of current skill and training needs but future needs;
- increased firm choice of ITOs. Firms will be able to apply to the TEC to have their training managed by a different ITO;
- strengthening the role of employees in ITO decision making; and
- the proposed Act also provides for voluntary training levies on an industry.

technology, physical sciences and management. Pacific peoples' participation and achievement will have improved across the board, but particularly in technology, mathematics and science, and in the study of Pacific languages, cultures and pedagogy. People from low income situations and others who have traditionally faced barriers to participation and achievement in tertiary education, such as disabled peoples, will also be achieving skills and qualifications in greater numbers.

OBJECTIVE 21

Learners are equipped to make informed choices about career and learning options

By 2007, all learners through schools, providers, Career Services and the TEC can expect a higher quality and greater range of information to be available. This will include information about skills in demand in the labour market, the employment outcomes of programmes of study, the personal rates of return on tuition and student completion rates. Information and advice about the employment opportunities and experiences of specific groups, such as disabled people, will be readily available.

In 2007, Māori communities will have increased access to career planning and course information that is 'smarter' in reaching Māori learners and whānau. This information will be impartial and include details about the value individuals can gain from of different tertiary qualifications so that Māori/whānau/hapū/iwi can choose tertiary education options in line with their aspirations.

OBJECTIVE 22

Broader development of skills for active citizenship and the maintenance of New Zealand's cultural identity

High-level generic skills, such as interpersonal skills, adaptability, critical thinking, creative and problem-solving skills, are central to people's participation in and contribution to a knowledge society. Such skills, when built upon basic skills such as literacy and numeracy, create a very strong foundation for lifelong learning and ongoing



personal development. These skills help preserve New Zealand's unique cultural heritage and societal values, and minimise the risks of people's skills becoming obsolete in the rapidly-changing workforce.

International development of 'essential', 'core' or 'key' skills⁴ curricula increasingly also include 'civics' skills for active citizenship in a democracy and can embody a sense of distinctive cultural identity. At some United States colleges, they may also include aesthetics, multi-cultural and ethics skills.⁵

While at present the development of a knowledge society is often interpreted to imply additional investment in the development of scientific or technology skills, these types of high-level generic skills, which stress interpersonal, intrapersonal and 'humanities' skills, and which are often taught as part of a liberal arts curriculum, are just as critical to the maintenance of a healthy democracy, and to the development of engaged and productive citizens.

OBJECTIVE 23

Improved provision of, and better systems of recognition for, high-level generic skills

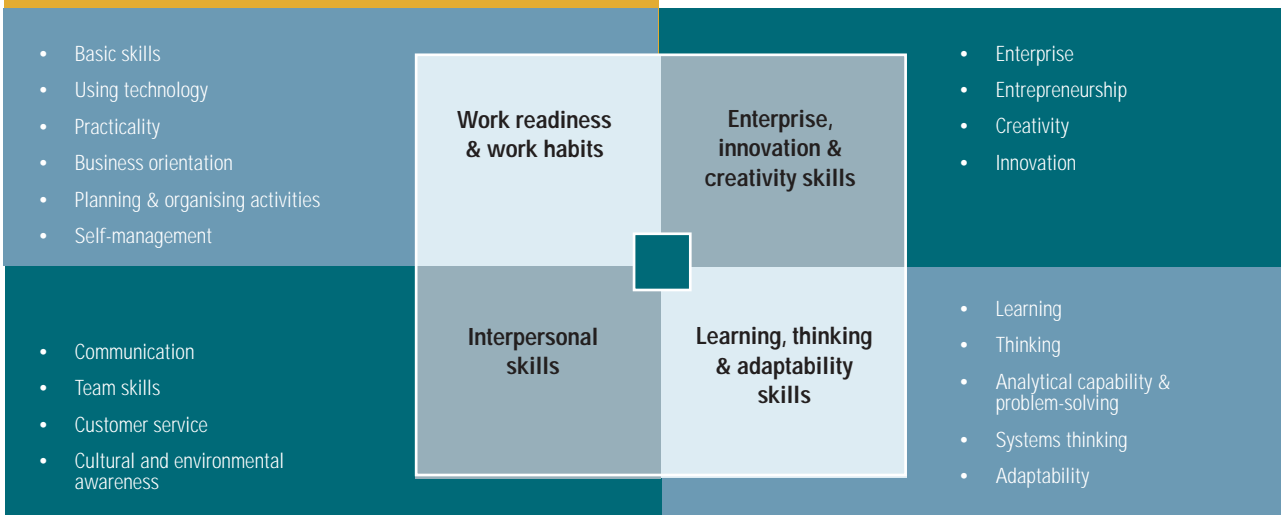
While at present most providers include detailed descriptions of

generic skills, learning outcomes and graduate profiles within curricula (and arguably generic skills provision is one of the core functions of a university in light of its overall purpose to advance, maintain and disseminate knowledge), by 2007, providers will be responding to high-level generic skill development imperatives in a variety of additional and more innovative ways. These will include:

- providing for a generic skills component more explicitly in programmes at both degree and sub-degree level;
- identifying base-line generic skill levels of all students at entry;
- providing individualised learning support programmes, with a stress on generic skill development; and/or
- providing on-line or traditionally-delivered specialist programmes in areas of particular generic skill need.

By 2007, integrated into programmes and qualifications will be a more explicit recognition of the often-articulated requirements of employers for graduates to possess high-level generic and transferable skills. There is much international consistency around the skills that are considered 'generic' in relation to work lives. Recent Australian research⁶ diagrammatically presented the interlinked nature of these skills as clusters, as shown below. By 2007, integrated into programmes and qualifications will be a more

FIGURE FOUR: HIGH-LEVEL GENERIC SKILLS





Alverno College

Alverno College is an independent, Catholic, liberal arts college in Milwaukee, Wisconsin. It was founded by the Sisters of St Francis to provide tertiary education for women. Alverno has organised its entire curriculum around eight 'abilities', including:

- Communication (computer literacy, listening, quantitative literacy, reading, speaking, using media, writing, analysis)
- Critical thinking (considered judgement and problem-solving)
- Valuing in decision-making
- Ethics and the moral dimensions of decisions
- Social interactions and teamwork
- Global perspectives
- Effective citizenship
- Aesthetic responsiveness.⁸

Alverno introduced the curriculum in 1973, and continues to refine it. The eight abilities are used to provide the core of a general education curriculum concentrated in the first few semesters of a four-year degree. All courses are structured so that the abilities are woven into discipline-specific materials. Each ability has developmental levels specified. Levels 1-4 are delivered through general education course components and levels 5-6 are majors. <http://www.alverno.edu>

explicit recognition of the often-articulated requirements of employers for graduates to possess high-level generic and transferable skills.

Research in several jurisdictions has shown that employers are likely to employ graduates, no matter what their discipline background, with attributes such as willingness to learn, teamwork, communication skills, problem-solving skills and analytic ability, flexibility and adaptability.⁷ By 2007 there will be a common understanding of what constitutes generic skills, and providers will be dedicated to ensuring that all learners acquire a high level of these generic skills and to working with employers to ensure that the skills included in programmes are actually being manifested in the workplace. Systems for providing and recognising high-level generic skills will be consistent with international norms, so that New Zealanders who wish to work abroad can continue to do so, with the same prospects of success that we already enjoy, and so that new New Zealanders can fully utilise their skills.

The provision of high-level generic skills will not be limited to the formal institution-based tertiary sector, but will extend to the vocational education and training sector. The workforce at all levels of the system will have to be able to respond quickly to innovations, which means opportunities to develop generic skills will need to be available at all levels of the system, and in a variety of settings including the workplace.

OBJECTIVE 24

Promotion of specialist skills that contribute to New Zealand's development

New Zealand needs a proportion of people who are highly-skilled technical specialists, researchers, entrepreneurs and managers, and who are capable of seeing, creating and implementing the opportunities for improved productivity and innovation in many fields.

⁴ All these terms are used in various jurisdictions.

⁵ See case studies in this section.

⁶ P. Keams, *Review of Research: Generic Skills for the New Economy*, Australian National Training Authority, 2001, p.52.

⁷ Harvey and Mason report on wide-ranging research involving large numbers of employers undertaken through a Quality in Higher Education project in the UK in Harvey, L. and Mason, S. "A Quality Graduate", in J Tait and P Knight (eds.) *The Management of Independent Learning*, London, 1996. A similar study was undertaken in Canada and outlined in Evers, F. Rush, J. and Bedrow, I. "Bridging the Gap between School and Work", *University Business*, April 1999, pp48-53. Another useful resource is Brown, M., "Preparing Students for Career Employment", UNESCO Report on Global Higher Education, Paris, 1998.

⁸ Alverno College Bulletin 1996-8.



These people will be engaged in postgraduate study in many fields, which will include the areas Government has identified as critical to continued economic development, such as biotechnology, ICT and the creative disciplines. We will need postgraduates in a wide range of disciplines and a proportion of talented people engaged in serendipitous research areas (in both 'blue skies' and applied research), who will help to generate new and emerging areas of research specialisation and excellence. Our liberal arts and humanities researchers will continue to contribute to our cultural development, national development, social well-being and economic growth. There will also be an increasing incidence of convergent or synergistic research that breaks down the traditional barriers between the arts and sciences.

Many of these highly-specialised graduates are likely to spend a period of their working lives abroad, and as a result their programmes of study will include an international emphasis. The offshore networks established by such graduates are important to New Zealand's international trade and image, and the regular return of these graduates will be assured by the existence of world class centres of research excellence, clusters and specialist companies in these fields.

By 2007, the quality of postgraduate courses and research skills will have improved, due in part to partnerships between tertiary providers and other sectors. For example, universities will be responding more effectively to the needs of CRIs for specialist researchers.

Providers will ensure improved progression for individual learners within the tertiary system, from programmes providing high-level generic skills into the study of more specialist skills and postgraduate qualifications.



Shove Electrical and the Electrotechnology ITO

Shove Electrical, a long-established family company, employs 13 people. Five of those 13 are apprentices. Electrical apprentices have always been the main source of labour supply for the electrical industry. They traditionally underwent a time-based five-year (10,000 hours) apprenticeship with periodic time out for block course training at a polytechnic. Unfortunately, there was often little co-ordination between the on-job and off-job learning. Under the more recent competence-based system, where Shove Electrical's apprentices acquire industry-determined standards, they still do their off-job training. However, this training is now spread more evenly – one day every fortnight on work time and one evening each week in their own time. This arrangement makes it easier to integrate off-job learning into what happens on the job, because apprentices are more likely to use the skills at the same time as they learn the theory. The Electrotechnology Industry Training Organisation (ETITO) has made it as easy as possible for the company to train its apprentices. It manages all the off-job training arrangements. This includes bulk purchasing of off-job training places from providers throughout the country, allocating training places to apprentices, monitoring and recording their achievements, seeing that their credits are registered, and arranging certification. Shove Electrical's chosen off-job provider is Manukau Institute of Technology.



Dexcel – Dairy Industry Labour Market and Employment Training

Dexcel Limited was established by the New Zealand Dairy Board in 2001 to focus on improving the competitiveness of New Zealand dairy farmers, including playing a pivotal role in achieving the dairy industry's 4% on-farm productivity target. Dexcel's work is centred around networking with other relevant organisations, supporting research and development and addressing wider dairy industry needs. A major concern for the sector is in the area of labour market and employment training. Rural communities continually witness employable people leaving for urban jobs and there was a notable market failure to cater for industry needs in the area of vocational training including environmental sustainability and animal health and well-being. As a result Dexcel now provides training courses to 550 trainees, offering part-time courses in Waikato, Bay of Plenty, Taranaki and Nelson. Dexcel is also involved in industry-funded extension activities. The focus of the training ranges from day-to-day operational farming matters, targeted particularly at new entrants to the sector, to strategic planning classes, which include exploration of new farming practices and research. Dexcel considers co-operation between education providers and industry to be vital to a successful future for the New Zealand dairy industry.

Submissions to the Draft Tertiary Education Strategy Dec-Feb 2001-02

"Skill New Zealand's experience is that generic skills, from foundation skills such as literacy and numeracy to more advanced transferable skills in higher-level qualifications, must be integrated fully into learning programmes, as opposed to being treated as 'add-ons'. All learning programmes should have as a key objective that learners leave with specified generic skills."

Submission from Skill New Zealand Board

"We endorse the call for qualifications developers to explicitly include recognition of generic skills within all qualifications. However, we suggest the tertiary education sector will need to see the list of essential generic skills as being much wider than literacy, numeracy and computer skills."

Submission by Creative New Zealand

"[We] support the emphasis in the TES on the need for high-level generic skills that increase the flexibility and adaptability of the workforce to change, build civic traditions, preserve shared societal values and minimise the risks of people's skill sets becoming obsolete. A liberal university education provides those high-level generic skills."

Submission by Association of University Staff

Strategy Five:

Educate for Pacific Peoples' Development and Success

"But my friends, my brothers and sisters of the Pacific, we know who we are. We carry in our hearts the knowledge that we are the bearers of a proud legacy that surely marks us as a people of strength, of courage and will. We have survived in our aquatic continent through many centuries. We survived the onslaught of the so-called fatal impact, and what became the most wrenching era of change since men and women first walked the earth. And now you, here in New Zealand, and we in the islands, stand at the threshold of the third millennium. And we all ask: how must we chart our course to ensure we keep faith with the generations of the past and those to come?" Ratu Sir Kamisese Mara, Opening Address, Pacific Vision International Conference, 1999



Where do we want to be by 2007?

By 2007, the goals of the *Pasifika Education Plan* will have been achieved, and both the participation and achievement of Pacific peoples will be significantly higher. The tertiary education system will have developed a greater shared sense of responsibility for understanding and meeting the needs of Pacific peoples and will ensure that more Pacific students gain high-level generic and specialist skills, become effective participants in their communities and key contributors to both Pacific peoples' and New Zealand's social well-being and economic development.

Pasifika Education Plan

In 2001, the Minister of Education released the Government's *Pasifika Education Plan*, to increase Pacific achievement in all areas of education through increasing participation, improving retention and focusing on effective teaching strategies. The *Plan* set the Government's goals and targets for Pasifika education, which were accompanied by a range of initiatives and capacity-building strategies to ensure the goals are achieved.

In tertiary education, the focus of the *Plan* is on increasing participation and achievement, improving retention and encouraging higher levels of study. The following goals were set:

- significantly increasing Pacific students' participation

in tertiary education at all levels;

- significantly improving Pacific students' achievement in tertiary education – closing the gaps with non-Pacific students completely in 20 years;
- significantly increasing opportunities for Pacific adults to access adult education and community learning, and specific adult literacy programmes over the next five years.

Short-term targets were also set, to measure progress in achieving those goals:

- Pacific peoples making up 5.3% of TEI students by 2002, 6% of TEI students by 2004, and 6.6% of TEI students by 2006
- the number of Pacific peoples graduating at diploma level and above increases every year, resulting in 5% of total graduates being Pacific peoples by 2002, 5.6% by 2004 and 6.2% by 2006.

OBJECTIVE 25

Pacific learners are encouraged and assisted to develop skills that are important to the development of both the Pacific and New Zealand



Victoria University of Wellington's Faculties of Science and Architecture and Design

Victoria University's Faculties of Science and Architecture and Design have a number of successful and innovative initiatives specifically designed to lift the participation and success of Pacific students. Key strategies include:

- Pacific students enrolled in these faculties are supported through a comprehensive and highly-successful mentoring system, Te Rōpu Awhina Pūtaiao (Awhina) now in its third year. Any Pacific student enrolled in papers offered by these two faculties is allocated a student mentor who keeps in regular contact.
- Targeted scholarships, well-resourced whānau rooms and a supportive learning environment (created by student mentors, staff, career and community mentors) have improved retention, grades and student progression to graduate and postgraduate study. These measures have resulted in an increase in Pacific enrolments at undergraduate and graduate level.
- A Transition Course is offered as an additional entry path for mature second chance learners and career changers into the prestigious new Bachelor of Information (BIT) degree. In 2001, four Pacific participants successfully completed the course and three are now enrolled in the BIT degree. In collaboration with Pacific organisations, VUW will be offering a Transition Course specifically aimed at Pacific peoples. This course will be based in the Pacific community and include a number of Pacific staff and Awhina mentors as tutors.
- For the past year, Awhina mentors attended four science classes a week at Mana College in Porirua to raise pupils' aspirations and to promote areas where Pacific peoples are under-represented as viable career options. The outcomes for both pupils and mentors was overwhelmingly positive and this year, through a Royal Society of New Zealand Science and Technology Promotion Award, the scheme will be extended to include Bishop Viard and Porirua Colleges. All of these schools are low decile and have a high proportion of Pacific pupils who are underachieving academically.

Our tertiary education system will be a key contributing sector to Pacific development, and will be well-positioned to meet the learning needs of the increasing numbers of Pacific young people emerging from the school system and Pacific adults returning to study. Pacific peoples will have a greater choice of tertiary options, as mainstream tertiary education providers will be meeting the needs and aspirations of Pacific peoples, and Pacific communities will be more connected to tertiary providers and engaged in the education being delivered to Pacific peoples.

From a system containing many barriers to access, participation and achievement by Pacific peoples, by 2007 the tertiary system will be an integrated network of tertiary providers that offer opportunities at each level of education, with clear pathways and appropriate mentoring and support for learners. Through the TEC, providers, and Career Services, opportunities for Pacific learners to access quality, appropriate career and learning advice to assist their study choices will have improved. More Pacific learners will be achieving in areas of traditional under-participation (e.g. science, mathematics and technology, and the Modern Apprenticeships programme) and in specialist skill areas that are key to New Zealand's economic development and the preservation and development of Pacific languages and cultures. Innovative and creative learning contexts will be increasingly available as tertiary providers and Pacific communities work together to ensure quality learning environments for Pacific peoples.

OBJECTIVE 26

A tertiary education system that is accountable for improved Pacific learning outcomes and connected to Pacific economic aspirations

By 2007, a much more responsive, inclusive and diverse mainstream tertiary education system will support Pacific students' participation, retention and achievement in all qualification levels and areas of study. The mainstream system's responsiveness will have improved with the guidance of the TEC and the accountability required by profiles and charters.

Within mainstream providers, Pacific teachers will be encouraged to debate and develop ideas about what constitutes Pacific pedagogies of

teaching and learning. Pacific researchers will be engaged in research in areas critical to New Zealand's competitive economic advantage, and to the development of Pacific languages, cultures and communities. As capability in the Pacific research sector increases, a collaborative network of Pacific tertiary researchers will be established.

A culture of collaboration will have developed around Pacific tertiary education. There will be increased partnership and collaborative networks between Pacific communities and the tertiary system, between Pacific providers and mainstream providers, between providers and Pacific business, between different Pacific ethnic groups, between the tertiary and compulsory systems, and between New Zealand Pacific communities and international Pacific communities. As a result of improved connections, tertiary teaching and research will be well linked with industry and business needs and developments, in order to create opportunities for Pacific students to gain employment and contribute to wealth creation.

OBJECTIVE 27

Pasifika for Pasifika education services are assisted to grow their capability and enhance Pasifika peoples' learning opportunities

The TEC and the NZQA will be working with Pacific providers to strengthen their capacity and capability to meet the educational needs of their communities. This will include the development of improved networks, the identification and dissemination of effective practices, improved quality of delivery, and the development of supportive relationships with other providers. Pacific communities will be more connected with tertiary providers and involved in building provider capability to meet Pacific learning needs.

OBJECTIVE 28

An increased proportion of Pacific staff at all levels of decision-making in the tertiary education system

By 2007, more Pacific people will be involved in the provision of



Auckland University of Technology (AUT)

AUT has an equity structure that works at every level of the institution, from governance and management to teaching and administration. AUT's Centre for Equity Development has a Head of Centre, Research and Data Analyst, Pasifika Development Manager /Equity Operations Advisor and Centre Administrator. The Centre works throughout the institution to identify problems with learner outcomes, teaching methods and human resource processes, through the collection of data, commissioning of research and engagement with key staff members. By working with all faculties, a clear picture of faculty performance for Pacific learners is being built up, and a collective strategy to support Pacific learners introduced in which lecturers and support people all work with the learner in their programmes to ensure their success is being addressed. As part of an institution-wide response to equity for Māori and Pacific peoples, a new large-scale system of accountabilities and additional resourcing support for individual faculties and Student Support Services (ITMOSS) is being implemented in 2002. This is using the Māori and Pacific Special Supplementary Grant funding, with additional funding being sourced from AUT's institutional bulk grant. The key to such widespread change within a large mainstream provider has been a commitment from leadership, academic and allied staff and the resource of a dedicated equity team at the Centre and in faculties and departments developing solutions from a solid basis of data and research.



Whitireia Polytechnic

The first chair of the Polytechnic Council was a Samoan man, and the first advisory body to be established was the Pacific Island Advisory Committee. Representatives of several Pacific ethnic groups are appointed to the Council by communities, and when new initiatives are proposed for Pacific students, the polytechnic, other local providers, students, staff and community develop them together. Partnership between all parties is a key feature of Whitireia Polytechnic initiatives, for example the Pacific health workers programme was established with funding from local health providers, tutors and facilitators from the Polytechnic, and students and expertise in cultural knowledge from the community.



Target Training Centre

Target Training Centre is a Pacific Island PTE since its founding 11 years ago. Target has become one of Auckland's foremost providers of tertiary education and training to Pacific communities across all regions. In order to achieve its primary objectives of equipping graduates with the necessary skills, nationally-recognised qualifications, and aptitude to gain employment, Target acts not just as an education provider but also as a successful employment broker in a variety of areas including Social Work and ESOL students.

Another success factor has been their participation in the National Literacy Strategy pilot groups. As a result of this participation one of the staff is now a National Auditor for the Draft Literacy Standards and a representative on the Adult Literacy Reference Group.

One of the key factors in the student's successful outcomes is the excellence of the student support services provided, and the holistic, Pasifika learning environment. Each learner is given personalised one-on-one attention to ensure his or her progress throughout the duration of each programme. Winning solutions are found to ensure that each learner achieves his or her goal of either employment or further training.



Pacific Provider Scholarships

The Ministry of Health and the Health Research Council are supporting the advancement of post-graduate study of Pacific Island students by offering postgraduate scholarships to those pursuing work in a health-related field. The Health Research Council will offer support to students pursuing a Masters or PhD by actively negotiating links with an appropriate supervisor and with a research team in a research project that is currently funded. The aim is to guide students towards areas of research that are a priority for Pacific health and ensure that students are well-supported and supervised in their work. Examples of research areas include disability, mental health, child nutrition and drug and alcohol consumption.

tertiary education. These people will strengthen the capability of the system as a whole to better meet the needs of Pacific learners.

There will be greater numbers of Pacific peoples at strategic levels of decision-making, including more Pacific peoples in governance and management positions who are actively engaged in developing innovative solutions to Pacific issues, providing leadership, and who are well-linked to their communities.

Mainstream providers will have recruited, retained and promoted Pacific staff, from a small number of Pacific teachers, administrators and researchers scattered throughout the tertiary sector and concentrated in a few disciplines, to clusters of experienced Pacific educationalists, leading developments and promoting excellence in their fields, and a greater Pacific staff presence right across the sector.

While there will still be further development to take place in the system, by 2007, Pacific peoples will be significant participants and leaders in tertiary education, and Pacific communities will see the tertiary sector as a partner in contributing to Pacific peoples' social and economic development.

Submissions to the Draft Tertiary Education Strategy Dec-Feb 2001-02

"Our expectation is that Pasifika peoples will be leaders and innovators in New Zealand and throughout the world in their chosen career paths."

Submission from Pasifika Staff at Auckland University of Technology

"Collective educational growth is developmentally prosperous."

Niuean participant

"The NZVCC agrees that Pacific Peoples will play a central and increasingly significant role in the economic and social future of New Zealand and that the education system has a crucial role to play in developing their capability."

Submission by New Zealand Vice-Chancellors' Committee

Strategy Six:

Strengthen Research, Knowledge Creation and Uptake for our Knowledge Society

“Research is to see what everybody else has seen and to think what nobody else has thought” Albert Szent-Gyorgi



Where do we want to be by 2007?

By 2007, the quality and focus of tertiary education research, and the strength of the relationships between the tertiary system and other sectors, will be seen in the faster uptake of new knowledge and the widespread recognition that the ongoing growth of New Zealand's knowledge economy depends on our ability to develop and apply new ideas and technologies to create high-value exports.

Universities, in particular, will be seen as key drivers of economic transformation through fundamental knowledge creation and its diffusion within New Zealand's innovation system.

The contribution tertiary research is making to other national goals, particularly to Māori development and advancement, and to cultural and social dimensions,⁹ will also be widely appreciated. This research will contribute to a deeper understanding of ourselves as a nation within a world that is increasingly global — socially, politically and economically. The tertiary system will contribute more directly by providing a research base for new government policy initiatives in these areas and for a more inclusive approach to economic transformation.

The international and national networks of tertiary staff, combined with stronger relationships with other sectors, will see faster and more effective dissemination of relevant knowledge. This flow of knowledge will be two-way:

- other sectors will see the tertiary system as an ally and partner. They will take responsibility for ensuring information relevant to

their sector's needs is available to the tertiary system; and

- the tertiary system will take responsibility for disseminating new ideas and research that could be relevant to other sectors.

OBJECTIVE 29

Excellent research performance is encouraged and rewarded

Priority will be given to the building of research capabilities and the quality of research. The recent decisions to establish Centres of Research Excellence (CoREs) represent one step in this direction. The TEC will also be ensuring, through charters and profiles, that providers are giving attention to building research and scholarship capability, quality and relevance.

This focus will be reinforced by a shift to more explicit recognition and rewards for this through funding structures and in particular the development of a new performance-based research fund. By 2007, this will have increased the quality of research through peer assessment and performance indicators.

Excellent basic research will underpin the tertiary sector's contributions to the creation of new knowledge and understandings, to teaching, to the achievement of national goals, and to supporting the universities' role as critic and conscience of society. Research within tertiary institutions will balance alignment with the national interest with the traditions of academic freedom.



MacDiarmid Institute for Advanced Materials and Nanotechnology – New Centre for Research Excellence

The Centre is a partnership between Victoria University of Wellington, Industrial Research Limited and the Institute of Geological and Nuclear Sciences. Through collaboration with other universities and Crown Research Institutes, most of the leading materials scientists in New Zealand will be involved in the Institute.

An innovative feature is an advisory board comprising some of the world's leading materials scientists. This includes several New Zealanders based overseas, along with the Institute's patron, Victoria University alumnus and Nobel Prize Winner, Professor Alan MacDiarmid. In the programme for postgraduate research, the Centre will be drawing together students in an interdisciplinary approach and developing initiatives for improving Māori participation. Their links to end-users will be well developed.

This interdisciplinary approach will enable the Centre to discover and to understand new advanced materials and technologies to create new products, technologies and industries for New Zealand. Materials and technologies currently attracting world-wide attention that will be addressed by the Centre include nano-engineered materials and devices, opto-electronics, superconductors, conduction polymers, functional materials and coatings, energy storage systems, soft materials, bio-materials and complex fluids.

Ensuring the quality of all tertiary teaching is informed by up-to-date scholarship will also have required new and innovative arrangements among providers. Thus, for degree-awarding providers, ensuring that staff are effectively engaged in quality research will be important and where this is not happening, resources will be moving over time towards higher-quality providers.

OBJECTIVE 30

Stronger accountability and enhanced performance reporting for tertiary education research

New system-wide indicators and measures of comparative research performance will allow the tertiary system's contribution to new knowledge creation and other national goals to be demonstrated more transparently and consistently, and so be better recognised by the community. Indicators and international benchmarking will recognise the development of additional world-class centres of research excellence.

Better information will be available to evaluate the contribution of tertiary education research to national development objectives. This in turn will help inform the focus and priorities for new policies.

OBJECTIVE 31

Increased global connectedness and mobility

By 2007, New Zealand researchers will be even more extensively networked with the international research community. This will be reflected in more joint research programmes, the increased exchange of researchers, and the greater opportunities for mobility of research students within these international networks. Increasingly, for economically-focussed programmes, research-based innovations will be commercialised through such international networks and be linked to enterprise in New Zealand and offshore.

This global connectedness will be ensured by New Zealand's continuing contribution to expanding the national and international pool of knowledge, based on a broad New Zealand research capability.

⁹ Nearly a third of all university research in 1997/98 fell into these areas (Ministry of Research, Science and Technology).



This capability will ensure that New Zealand remains a part of the networks that make up the global research community, with resultant interpretation and exploitation of the global knowledge pool for New Zealand's benefit in all spheres of endeavour.

OBJECTIVE 32

A more focussed tertiary research investment through world-class clusters and networks of specialisation

Because we are a small nation, it is not possible to cover all research areas. By 2007, we will have achieved a balance between the spread of capability required to access global knowledge networks and the achievement of critical mass in areas of distinctive research strength. This will have entailed some rationalisation of research areas among providers, and greater collaboration between research organisations such as CRIs, so as to achieve critical mass, greater depth, and higher quality when measured against international benchmarks. A performance-based research fund will have helped foster greater collegiality and interdisciplinary synergies in key research areas.

Much of the specialisation within the sector will build on the current strengths in the arts and sciences but will do so without undermining the excellent fundamental research for which New Zealand depends on the tertiary education system, and without being so concentrated that it constrains opportunities for serendipitous discoveries.

Our university leaders will have made some tough decisions about investment priorities, and even tougher choices regarding disinvestments and resource concentrations. They will also have in place plans for investment in research infrastructure to support these strategic decisions.

OBJECTIVE 33

Greater alignment of tertiary education research with national goals

While all tertiary research will have increased in quality, a significant proportion will also be more clearly concentrated in particular fields,



Lincoln and Massey Universities

Lincoln University and Massey University have joined forces with WoolPro to maximise technology development and uptake in the sheep industry. The agreement, announced in June 2001, will see WoolPro staff shift to premises on the campuses, where they will work closely with university staff on research and development, technology transfer, education and training. Institute of Veterinary, Animal and Biomedical Sciences head at Massey University, Professor Grant Guilford, is excited about the new relationship which he sees as being a key to the New Zealand sheep industry retaining its position as a world leader. "This partnership brings together the leading agricultural research and teaching institutions with the industry body. The universities will be brought closer to other people in the sheep industry, with WoolPro the go-between."



University of Auckland

The University of Auckland introduced in 2000 research excellence awards to encourage and support research within the university. These included awards for the best doctoral thesis in each faculty and early career research excellence awards of \$30,000 to support emerging scholars.



BLIS

University of Otago scientists' discovery of an anti-bacterial protein with the ability to prevent throat infections was a research breakthrough of major scientific and economic significance. The University was quick to conclude an agreement with BLIS Technologies Ltd to transfer the technology and patent rights to the company in return for substantial payments and a significant share holding in the company of the future royalties. The discovery has been tipped to be one of the most important health discoveries by New Zealand universities in decades – an opportunity to showcase the University and Dunedin as a centre of leading bio-tech research and development.



Tā Moko

Tā Moko, the form of body adornment unique to Māori, is the focus of a research project based at the University of Waikato and supported by a Marsden grant of \$445,000 over three years. The aim is to produce an in-depth account of Māori use of Tā Moko, including its history and social and political issues for the increasing numbers of Māori wearing forms of Tā Moko today. The researchers are currently working in close conjunction with local Maori, and will continue to do so throughout the project.

multidisciplinary teams or providers that are aligned with national goals. This will be largely achieved through Centres of Research Excellence and Vote RS&T funding that recognises not only existing strengths but builds new strengths in areas critical for New Zealand's economic and social development, Māori development, and environmental management. Other research activities will also be organised to reflect particular local and regional needs and specialisations. By 2007, we will have developed a better shared sense of our distinctive competencies that will have begun to lift our relative economic performance in OECD terms and to make significant progress toward other national goals.

Universities will play a much more significant role in the key economic areas of ICT and biotechnology, but will also be contributing to a wide range of areas outside the core sciences. In particular, New Zealand depends on the tertiary education system for research contributing to outcomes for Māori, and for social, cultural and health research. By 2007, this will be more clearly recognised through research concentrations in these areas and by more of this research being explicitly linked to the needs of New Zealand, iwi and local communities.

In 2007, polytechnic-based scholarship and research will continue to support polytechnic degree programmes and focus on making a distinctive contribution in applied research areas. There will be a considerably higher incidence of polytechnic to polytechnic, and polytechnic-university research collaborations, and many polytechnics will work closely with local industry in technology uptake ventures.

OBJECTIVE 34

Improved knowledge uptake through stronger links with those that apply new knowledge or commercialisation of knowledge products

The increased alignment of tertiary research with national goals will mean that providers will have stronger connections with research-users¹⁰ across many areas, especially through the increasing funding they receive from economic, social and environment research output

¹⁰ Users can include government agencies, private companies, iwi, private sector clusters and associations, NGOs and communities. Users can also include other researchers – where this is the case, a vision for how the research will be further developed to implementation is needed.

classes, the New Economy Research Fund, the Health Research Council and from industry and other users.

By 2007, the nature of research uptake will have changed, from the previous linear 'from academic idea to implementation or commercialisation' approach to a much more networked approach, focussed on problem solving.

An improved 'information infrastructure' will be evident, with end-users, providers and government working together to develop future-focussed research strategies. The TEC, in emphasising the importance of networks, will play a catalytic role here, as will organisations such as Industry New Zealand, Trade New Zealand, FRST, ITOs and other sector groups.

This greater connectivity with the end-users of research will have increased the research literacy of users, so ensuring uptake of research results. There will be genuine two-way learning between researchers and users throughout the research process, including the engagement of end-users in research programme design, development, execution, and implementation, and the movement of staff and students between providers and users.

This will involve greater end-user financial commitments to research programmes and students and, for economically-focussed programmes, provider consideration of how the pathway to implementation and the management of intellectual property (for example, via product or prototype development, licensing, and spin-offs) captures benefit to New Zealand. There will be increasing numbers of ventures where new knowledge has been fully commercialised through companies spun-off from tertiary providers or through joint ventures with enterprise.

OBJECTIVE 35

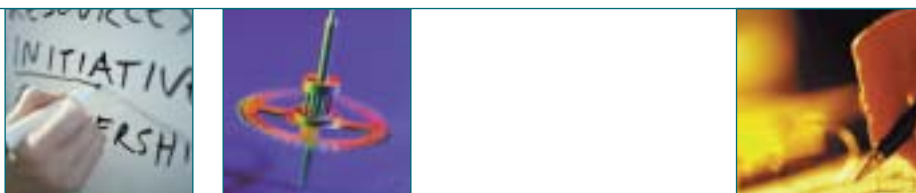
Increased breadth of support for research students and emerging researchers, with a particular focus on the development of Māori researchers

The link between research activity and teaching at degree level will remain important. This ensures new knowledge is incorporated into the



Otago Polytechnic

Research partners Otago Polytechnic, Otago Rugby Football Union, InterLink Electronics, Shock Top Protective Sports Apparel and the Dunedin City Council Economic Development Unit are working together on an exciting project. The aim of the work is to develop an electronic system (force sensitive resistors) to be worn by players in high impact sport – such as rugby – to measure and transmit information about force and impact. It will also generate live tackle and scrum information for television and interactive media. Such force-sensitive resistors are already used in a number of industries including health sciences, computers, general industry and clothing. The challenges for this application however, include the need for the wearer to be able to stretch. Dr Samuel Mann and Phil Morrison from Otago Polytechnic are leading the project, and are being assisted by students from Otago Polytechnic School of Information Technology and Electro-technology and the School of Fashion.



scholarship activities of teachers (for example, into the course content of programmes) and provides a research culture within which undergraduates learn to take a research-based approach to their lifelong educational development. This also provides students with richer learning experiences, thereby increasing their capability. High-quality postgraduate programmes will be delivered effectively in a context where most of the academic staff are doing research of a national or international standard of excellence, as assessed within the context of a performance-based research fund. Postgraduate students will be trained in research leadership and in the adaptive outlook and flexibility of mind needed to utilise new innovations and technologies in the workplace.

Providers will be more responsive to the changing and increasingly complex training needs of those learning to be researchers. In addition to the need to train and mentor researchers within an environment that engenders a spirit of enquiry, coupled with the discipline of rigorous investigation, emerging researchers will be

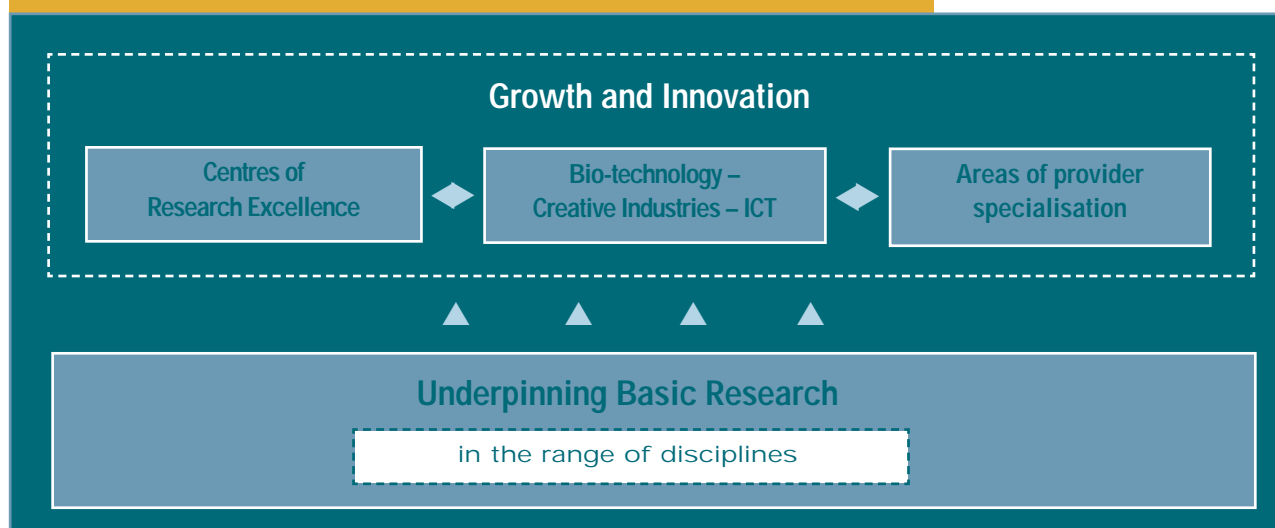
developing other skills. Tomorrow's research and innovation leaders need skills that enable connectivity with users; adaptability, communication, and management skills; and, where appropriate, commercialisation and business skills.

The development and mentoring of Māori and Pacific research students and emerging researchers will be a priority for providers, especially through their inclusion within research programmes and Centres of Research Excellence that will enable new researchers to move to research leadership roles.

For Māori this will involve not only programmes of particular relevance to enhancing Māori management of natural, cultural and historical resources, but also those that build Māori skills and intellectual capital in advanced technology and other rapidly-growing areas of the economy.¹¹

¹¹ Foundation for Research, Science and Technology, Strategic Portfolio Outline: Māori Development and Advancement. 1999.

FIGURE FIVE: TERTIARY EDUCATION RESEARCH INFRASTRUCTURE



Submissions to the Draft Tertiary Education Strategy Dec-Feb 2001-02

“Throughout New Zealand we need to have a strong network of links between researchers and end-users. Therefore NZFF and Vegfed would suggest that a high priority be given to the objective promoting connectivity with those that apply new knowledge and improve the management and commercialisation of knowledge products.”

Submission by National Association of Organisations for Fruit and Vegetable Growers

“The results of research need to be disseminated through as many channels as possible to encourage commercialisation and innovation. Supporting technology transfer by encouraging partnerships between industry and research providers should ensure that this can occur.”

Submission by Federated Farmers

“After more than a decade of education policy and reviews in which little or no mention has been made of their distinctive role, it is gratifying to see recognition of the key role of universities and their staff in basic research, knowledge creation and dissemination, the fostering of economic growth and the creation of a knowledge society.”

Submission by Association of University Staff

“We should [not ignore] the growing body of research into the distinctive research culture being developed in the polytechnic sector, and the overall increase in New Zealand's research and capability in professional services that has resulted from this change.”

Submission by Tony Clear

“There has to be an acknowledgement that there has to be close

alignment between the research and knowledge creation components [of the strategy], and the areas where special competitive advantage rests. Marlborough is a good example of this and is the rationale for the MEDT's emphasis on establishing world-leading centres of excellence for viticulture, aquaculture and aviation — each are areas where there is significant competitive advantage already.”

Submission by Marlborough Economic Development Trust

“The draft Tertiary Education Strategy calls for greater specialisation for institutions. It also notes the importance of the nation's development of the education and research on bio-economy, and seeks greater linkages between institutions and industry. None of these thrusts is cost free. Greater specialisation will limit opportunities for institutions to offset losses on high-cost programmes, with the returns from high-margin programmes. The new applied sciences, such as biotechnology, demand substantial investment in high-cost capital equipment and have high operating costs. If they are to be mutually beneficial, collaborations between institutions and industry require solid financial commitments from both partners.”

Submission by Lincoln University

“At a basic level, research activities in the tertiary system and Crown Research Institutes fulfil critical functions in expanding New Zealand's international pool of knowledge. There is some concern among CRIs that their role in producing some of the country's highest quality work in fundamental and applied research is not adequately understood by the general public.”

Submission by The Institute of Geological and Nuclear Sciences

6

Measuring Progress

This *Strategy* sets a range of goals for our tertiary education system and outlines a number of required shifts and changes to reach these goals. We will need some means of determining whether we have made progress towards these goals and whether the strategies and objectives outlined here produce the outcomes we want for New Zealand.

The six strategies and the related objectives outlined here impact on a range of actors, at a range of levels – from individual educators, researchers, managers, and employers, to institutions of all types, ITOs, industries, staff and unions, and government agencies. We will need to monitor the performance of the system as a whole in terms of its capability, operation, connections, and outcomes.

The Government will continue to develop tertiary education indicators of the overall health, and strengths and weaknesses, of our post-school education and training system. This will assist us to evaluate and monitor the *Strategy* and will inform future policy and priorities (including revision of this *Strategy* itself).

Developing indicators in some areas will be a priority. We currently collect little system-level data, if any, in some critical areas such as outcome data around literacy skill levels and generic skill levels. As a result, the development of new indicators and data sources will be needed, subject to the benefits, costs and feasibility of filling these information needs over time.

The process of developing charters and profiles will help build a better understanding of dimensions of quality and the capabilities of our tertiary system, as will the development of indicators of research capability and performance.

An illustrative set of indicators for measuring progress against the *Strategy* is shown below. Included here are indicators that have some acceptance internationally for measuring the state of education. Not every important aspect of the operation of the system is included, but rather the focus is on elements related to the *Strategy*. The best overall measures will need to pick up system-wide effects or changes in significant aspects of the system.

Further development and refinement will be a key priority over the next year and will entail ongoing discussion with a range of experts and stakeholders around the conceptual, policy, and technical issues involved.

	Strengthen System Capability & Quality	Contribute to Achieving Māori Development Aspirations	Raise Foundation Skills so that all People can Participate in our Knowledge Society
Outcomes	<ul style="list-style-type: none"> > Stronger providers and an effective and efficient overall portfolio of provision 	<ul style="list-style-type: none"> > Skill levels in Māori population, including: <ul style="list-style-type: none"> - Improved literacy levels - Improved generic skill levels - Tertiary educational attainment of Māori - Improved capability in specialist skill areas > Skill mix and levels, and research output meet iwi/Māori development needs, including: <ul style="list-style-type: none"> - Improved fluency in te reo Māori amongst Māori > Ability to participate in governance, management and leadership roles 	<ul style="list-style-type: none"> > Improved literacy levels in population > Improved life skills and lifelong learning skills
Measures of Progress	<ul style="list-style-type: none"> > Financial health indicators (including proportion of providers in at-risk categories) > Extent of collaborative ventures and shared services > Characteristics and teaching proficiency of tertiary educators > Investment in professional development > NZQA audit trends > E-learning delivery as proportion of total delivery > Sector income from foreign students and activities 	<ul style="list-style-type: none"> > Participation and completion rates for Māori > Educational attainment by Māori > Labour market trends for Māori > Māori graduate destinations and employment outcomes > Māori employment in tertiary sector > Te reo Māori fluency rate amongst Māori 	<ul style="list-style-type: none"> > Participation and completion rates for foundation education > TO/YT literacy outcomes > Progression rates from foundation education to higher qualifications > Unmet demand for ESOL/English for migrants provision
Key Further Measures to Develop	<ul style="list-style-type: none"> > Regular measure of generic skill levels of graduates/population > Regular measure of literacy levels of population > Regular system-wide graduate outcomes information 		

	Develop the Skills New Zealanders need for our Knowledge Society	Educate for Pacific Peoples' Development & Success	Strengthen Research, Knowledge Creation & Uptake for our Knowledge Society
Outcomes	<ul style="list-style-type: none"> > Skill mix and levels meet labour market needs, including: <ul style="list-style-type: none"> - Improved supply of skills for key industries and reduced skill gaps - Improved generic skills across the population > Improved capability in specialist skill areas 	<ul style="list-style-type: none"> > Skill levels in Pacific population, including: <ul style="list-style-type: none"> - Improved literacy levels - Improved generic skill levels - Tertiary educational attainment of Pacific population - Improved capability in specialist skill areas > Skill mix and levels, and research output meet Pacific development needs > Ability to participate in governance, management and leadership roles 	<ul style="list-style-type: none"> > Improved quality of research output > Tertiary research effort and output focussed in key areas to meet NZ's economic and social needs > Improved knowledge uptake from tertiary system research activity > Improved research training and opportunities > Greater incidence of connection and collaboration
Measures of Progress	<ul style="list-style-type: none"> > Participation and completion rates > Educational attainment > Graduate destinations and employment outcomes > Proportion of RS&T workers in workforce > Investment by employers in education/training > Participation in training by workforce and average duration of job-related training > Incidence of skill shortages > Employer and graduate satisfaction > Search time for jobs and employers 	<ul style="list-style-type: none"> > Participation and completion rates for Pacific peoples > Educational attainment by Pacific peoples > Labour market trends for Pacific peoples > Improved research outputs > Pacific graduate destinations and employment outcomes > Pacific employment in tertiary sector 	<ul style="list-style-type: none"> > Publication and citation rates > PhDs awarded > Value of competitive research contracts > Source of R&D funding in tertiary sector > Value of/income from intellectual property in tertiary sector > Tertiary sector R&D as % of total R&D and GDP Basic research as % of total R&D and GDP > R&D investment of tertiary sector by field and output type > Value of commercial arms of tertiary sector
Key Further Measures to Develop	<ul style="list-style-type: none"> > Regular measure of generic skill levels of graduates/population > Regular measure of literacy levels of population > Regular system-wide graduate outcomes information 		

7

Conclusion:

This Strategy in Action

As outlined above, this *Strategy* is the centrepiece of a very significant reform of the tertiary education system. Its role is to articulate a clear vision of how the New Zealand tertiary education system, over the next five years, can contribute to New Zealand's future development. It has emphasised the importance of:

- the capabilities that are present in the tertiary system and the need to invest in the building of future capability;
- strong relationships and connections between the tertiary system and all the sectors of New Zealand; and
- all New Zealanders investing in education and succeeding in education.

It also recognises the important contribution the tertiary system needs to make to Māori development, and to New Zealand's unique culture and identity.

It is because the tertiary system is one of New Zealand's key strategic assets that it is vital there is strong alignment between the Government's broader vision for the nation's economic and social development.

This *Strategy* is about a new way of thinking and making connections, and as such this is a high-level document. It recognises that a modern economy is far too complex for a Government to develop a detailed or prescriptive plan. However, through the achievement of its objectives, it can ensure that the tertiary system is focused on the things that are really important to the future development of New Zealand and New Zealanders.

For example, if in five years time strong connections exist between the tertiary system and other sectors, then our people will have more relevant skills and organisations and better information and knowledge. This will support innovation and higher productivity.

If in five years time more New Zealanders have access to opportunities to build their generic and foundation skills, they will be able to better participate in society and to contribute more productively through their work.

If in five years time the tertiary system better supports Māori advancement and aspirations, then New Zealand will be a more prosperous and confident nation.

The TEC will be expected to play a key role in shaping the future outlined in this *Strategy* for the tertiary education system. Its role will be to implement particular policies and apply instruments such as charters and profiles, funding, and assessments of strategic relevance.

The new system of charters and profiles will play a key role. These will articulate the strategic focus and capabilities of individual providers and ITOs. They will provide a basis of accountability for performance and the use of taxpayers' monies. They will help contribute to the development of a much better understanding of system capabilities and over time this will inform future policies designed to build new or better capabilities.

These changes will be supported by changes in tertiary education funding policy. This will see a shift from a demand-driven system to a much more strategic approach to funding. These changes will place greater emphasis on building capability and developing strategic relationships between providers and with other sectors. Over time some funding will be more directly linked to performance measured in terms of student achievement and research quality.

Tertiary policy will increasingly involve a 'whole-of-Government' focus that recognises that the capabilities that exist in a tertiary system contribute to a wide range of national development goals.

The dynamics driving our tertiary education system will change quite significantly over the next five years as these changes take effect. The present drive to compete for students will be much weaker. Rather, the focus will be on building quality and strength. The system will become much less atomistic and greater collaboration and connection will become much more evident. This collaboration is likely to be seen in stronger relationships, in fewer providers, in increased specialisation and in greater differentiation and resource concentration.

The challenges ahead to achieve this vision for our nation – and for our tertiary education system – are immense. They can only be met by working together, as we seek to harness the resources of our tertiary education system to realise our shared vision for a prosperous and confident New Zealand.



8

Appendix : Consultation on this Strategy

Analysis of Submissions on the Draft Tertiary Education Strategy 2002-07

Central Steering

- 1 In general, there was widespread support for the need for a *Tertiary Education Strategy*. Many submissions saw benefit in the integration of the full range of tertiary education pathways and a more planned approach to managing tertiary education. The move away from an individualistic, competitive model was supported. The prospect of greater cohesion resulting from an increase in central steering was welcomed.
- 2 However, a number of concerns with Government steerage were raised. A key concern was the potential loss of ability to address regional needs within a more complex system.
- 3 While Government or government-appointed steering was viewed as favourable for tertiary education for the overall system, tertiary education providers strongly submitted the importance of the retention of academic and funding autonomy within institutions. For example, some universities indicated a desire to maintain control over setting staff salary rates.
- 4 Some universities had concerns about the possible implications of central steering on institutional autonomy and academic freedom and emphasised the importance of maintaining a balance between Government intervention and the autonomy of the sector.

Accuracy of the identification of key problems

- 5 The majority of submissions indicated that they thought the descriptions of key problems and challenges facing the tertiary education system were largely accurate.
- 6 Respondents sought more focus on agendas such as literacy, lifelong learning, a seamless tertiary education system and the inclusion of people with disabilities.
- 7 Many submissions also expressed the view that the funding issues of the tertiary education system, and in particular, adequate linkage to TEAC's Fourth Report, *Shaping the Funding Framework*, were wrongly omitted.

The Six Strategies

- 8 The submissions which expressed a view on all of the six strategies indicated that the strategies covered most of the key

priorities for change. While the named priorities were on the whole uncontroversial, it was felt by a large number of submitters that the report lacked detail of the implementation process. Reference to specific actions and the association of vision to funding was strongly recommended. Other respondents suggested that the priority areas should include emphasis on education for refugees and other immigrant peoples, work with communities and local authorities and a focus on people with disabilities.

- 9 There was also some concern expressed that the *Draft Tertiary Education Strategy* suggested that participation issues are resolved yet there is still modest participation from low decile schools and Māori and Pacific peoples.
- 10 Further comments were made that there was not enough emphasis and detail given in the *Draft Strategy* to seamless education links between schools, employers and the tertiary sector. Student need/ support was not an area that submitters felt was dealt with adequately.

Strategic Objectives for the Six Strategies

- 11 *Developing the skills and knowledge New Zealanders need: A focus on developing the skills and knowledge New Zealanders need for our knowledge society* was widely supported amongst submitters. However, a general theme emerged that increased refinement of the definition of 'generic skills' is required.
- 12 Both industry and employer representative submissions and those of Tertiary Education Institutions, were on the whole strongly in support of increasing connectivity within the system.
- 13 In other areas, a very diverse range of opinions on the priorities for increasing skills and knowledge was evident. Universities were generally concerned that while better linkage and co-ordination with current employers was needed, academic content should not be restrained by specific short-term needs of employers. Universities have a vital role to play in anticipating the skill and knowledge needs of wider society. Elements of the university that are not directly implicated in business and industry – such as many humanities subjects – could suffer from a low priority rating. Such key areas are where many generalist and critical thinking skills are nurtured, providing a balance in the overall profile of New Zealand graduates.

- 14 Polytechnics and private sector providers in contrast, were very supportive of the emphasis the *Strategy* placed on stronger links with business and external stakeholders. Many were eager to cite examples of their own future-focussed initiatives.
- 15 Community education groups and local government emphasised the need for a balance to be maintained between public good, labour market need and personal gain in the perceived value of tertiary education.
- 16 Generally the submissions indicated support for a strategy to address Māori needs in tertiary education. There was specific mention of the need to recognise Te Tiriti o Waitangi obligations when considering Māori participation in tertiary education. Many submissions emphasised that Māori development should not operate in a vacuum and that it will be important to improve the interface between tertiary and the compulsory education sectors. There will also be a need to further develop relationships between providers and Māori in the community and to consider and meet the needs of Māori learners.
- 17 Respondents perceived a need for the Government to recognise multiple pathways and all kinds of educational providers. This included the providers which specialised in foundation skills, which are often in the private education sector and which may have a specific focus on Māori students.
- 18 There was a clear argument for the involvement of more Māori in higher levels of policy and management, such as increased representation of Māori on Academic Boards and involvement in sector development. The submissions welcomed the fact that the *Draft Strategy* prioritised this. The need for consultation with Māori via iwi consultation and the importance of iwi involvement in regional development was also noted. Further to this was the need to place emphasis on Māori research goals.
- 19 *Foundation Skills*: There was a general expression for a need of a standardised definition of foundation skills. Many universities felt that foundation skills need to be taught in the primary and secondary school's curriculum and should not be a high priority of the tertiary education system. Literacy and numeracy were identified as essential foundation skills. There be should clearer identification of which institutions are expected to assist in increasing this provision.
- 20 Addressing the foundation skill needs of those already within the workforce was also supported. In particular, the need for development of more innovative and flexible teaching methods and learning support services was discussed. More links to the Adult Literacy Strategy were also recommended.
- 21 Generally universities argued that the emphasis on traditional learning areas should be emphasised in tertiary education and highlighted the importance of raising foundation skill standards prior to tertiary education. Universities also questioned which providers were expected or qualified to address foundation skill needs.
- 22 The private sector and community education groups welcomed the recognition of their role in providing foundation skills. There was particular comment from work-based providers of the need to address the learning requirements of those already in employment.
- 23 *Pasifika Development*: Generally the submissions indicated support for Pacific development being a specific strategy. Many submissions welcomed action being taken to increase the number of Pacific people who enter tertiary education.
- 24 There was agreement that further work needs to be done to address the barriers to participation and achievement by Pacific peoples. Continued engagement with Pacific communities will be central to this. There was also a call for increased recognition that cost is a barrier to Pacific peoples' participation in tertiary education.
- 25 Some submissions urged the integration of a Pasifika voice and throughout all strategies but also commended the inclusion of a specific Pacific peoples' strategy. There was a perceived need for more direct consultation with communities and involvement at a higher level of programme development and in Government policy-making.
- 26 The private sector and community-focussed providers were keen to demonstrate their central role in meeting Pacific needs but request increased recognition of this role within the sector, including financial support. Any halt on PTE development was believed to directly impact on the pursuit of Pacific communities' educational development.

- 27 *Research*: Research was a central focus of many submissions. There was general support, particularly from universities and polytechnics, for the pursuit of research excellence and the benefits of New Zealand producing research at a high international standard. Concerns were raised that the current Student Loan Scheme is a barrier to New Zealand graduates undertaking postgraduate and research positions. The current research funding model was seen to create a competitive environment that resulted in a lack of opportunity and certainty for researchers, particularly Māori and Pacific researchers.
- 28 There was some concern that research undertaken in the polytechnic sector was overlooked and that the suggested changes will disadvantage this area. Polytechnics were generally eager to express their view of the importance of industry links with regard to research. Such connectivity was seen to hold a wealth of potential for future development. In contrast, the universities were more concerned about retaining a focus on more pure academic research. They felt that industry needs should not dictate the highest levels of learning.
- 29 There were clear differences in responses by provider type. Polytechnics felt that the *Draft Tertiary Education Strategy* was inconsistent with the Tertiary Education Advisory Commission's Report Four, *Shaping the Funding Framework* recommendations on the funding of research. They welcomed the emphasis the *Draft Tertiary Education Strategy* places on industry-supported research.
- 30 Universities felt that pure academic research was in danger of being lost to the needs of business and industry. Further, there was concern that liberal arts will lose out to scientific research. Liberal arts in universities were seen to provide many of the identified generic skills.
- 31 *Systems capability*: Many submissions supported the concept of tertiary providers collaborating and reducing the duplication of programmes and courses where necessary. There was a suggestion to co-ordinate funding frameworks in order to co-ordinate collective investment. Many expressed the view that the system should balance competition and collaboration. Effective leadership was perceived as necessary to implement change.
- 32 The universities and polytechnics were supportive of collaboration within the sector. Many providers illustrated how they were currently involved in collaboration within the sector.
- 33 The disability sector highlighted the need for disability consultation within the tertiary education system. They felt disappointed at their lack of voice and consultation. It was highlighted that one in five people has a disability. Many people who attend tertiary providers or feel unable to attend tertiary providers may have a disability.
- 34 The need to improve student feedback and availability to governors and managers about the performance of their organisations and the system as a whole was also recognised in a number of submissions.
- 35 Some uncertainty was expressed about the stated aim of encouraging PTEs to collaborate and cluster to lift capability. Some providers felt that the importance of catering to specific industry or regional needs was not appreciated by the *Draft Tertiary Education Strategy*.
- 36 The endorsement of visionary leadership and future-focussed strategies was also welcomed.

Indicators

- 37 Minimal comment on the value of the indicators outlined in the *Draft Tertiary Education Strategy* was included in submissions. Those who did address this aspect of the report were generally supportive of such tools for evaluating and monitoring the overall health of a system by providing information about outcomes. It was noted that care must be taken to align indicators with the objectives of the strategies. The process should not be reduced to a data collection exercise. Other possible indicators that could highlight progress included those related to building human capability as an important contributor to system outcomes.

