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Immigration Research Programme

**Cultivating the Knowledge
Economy in New Zealand**

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TABLE OF CONTENTS

1	EXECUTIVE SUMMARY	3
1.1	Introduction	3
1.2	Research methodology	3
1.3	Participants' definition of knowledge-based industries	3
1.4	The nature of skills shortages	3
1.5	Overseas recruitment	4
2	BACKGROUND	6
2.1	Introduction	6
2.2	Research purpose	6
2.3	Research method	7
2.4	Sample profile of participants	8
2.5	Limitations of the research methodology	8
3	DEFINING KNOWLEDGE-BASED INDUSTRIES	9
3.1	Introduction	9
3.2	Knowledge-based workers	10
4	SKILL SHORTAGES	11
4.1	Introduction	11
4.2	The nature of skill shortages	11
4.3	Perceived reasons for skill shortages	12
4.3.1	Inability to compete internationally	12
4.3.2	Small population size	12
4.3.3	Education system	12
4.4	Strategies to overcome skill shortages	13
4.4.1	Recruitment within New Zealand	13
4.4.2	International recruitment	13
4.5	Strategies to cope with skill shortages	14
5	OVERSEAS RECRUITMENT	15
5.1	Introduction	15
5.2	Benefits of recruiting from overseas	15
5.3	Barriers to recruiting from overseas	15
5.3.1	Inability to fluently speak English	15
5.3.2	Remuneration	16

5.3.3	Other barriers	16
5.4	Barriers to coming to New Zealand	16
5.5	Strategies to retain overseas recruits	17
5.6	Desired Attributes when recruiting from overseas	17
6	DISCUSSION AND CONCLUSIONS	19
6.1	Introduction	19
6.2	Participants' suggestions for improving their ability to fill skill shortages	19
6.2.1	Building a competitive edge	19
6.2.2	Marketing Channels	20
	APPENDIX A: INTERVIEW GUIDE	21
	APPENDIX B: EXPERIENCE AND PERCEPTIONS OF IMMIGRATION POLICY	22
	APPENDIX C: DETAILED SKILL SHORTAGES	24
	IT shortages	25
	Health shortages	28
	APPENDIX D: IMMIGRATION POLICY	29
	Targeted Migrant Categories	29
	General Skills policy objective	29
	Minimum points required	29
	Summary of General Skills Points Table	30
	Work Visa/Permit Policy	31

1 Executive Summary

1.1 Introduction

This qualitative research was designed to define knowledge-based organisations including any perceived skill shortages they may face and any specific attributes that they look for in people when recruiting overseas. In addition, the research also examined the respondents' perceptions and experiences of immigration policy and service in facilitating the filling of skill shortages. A brief summary of those findings is attached as an appendix. The research was commissioned by the New Zealand Immigration Service (NZIS) and carried out in November 2000.

1.2 Research methodology

Twenty-one qualitative interviews were undertaken with key informants from a range of organisations in industries that were identified as knowledge-based. Sources used to define knowledge-based industries were the Ministry of Economic Development website; New Zealand Immigration Service staff; and participants in the SmartNet workshop on the knowledge economy.

Participants were eligible for participation in the research on the basis that:

- they perceived their organisation to be knowledge-based
- the organisation has experienced skill shortages within the last 12 months.

1.3 Participants' definition of knowledge-based industries

- Knowledge-based industries were defined by participants as those that utilise skills and experience to add value and innovation. A wide range of industries were thought to comprise the knowledge economy. However, Information Technology, Science, and Research and Development were most commonly used examples of the knowledge economy.
- Knowledge-based workers were defined as those who are specialists with particular skills and experience who can make a unique contribution to the organisation. These workers are often innovative and leaders in their field of expertise.

1.4 The nature of skills shortages

- All of the organisations that participated in this research reported that they have continuous skill shortages created by a scarcity of people with specialist skills and experience.
- Some vacancies can take up to six months to fill and some vacancies are never filled. In addition to vacant positions, organisations are also constantly on the look out for people who can add value to the organisation; in these instances, recruitment is driven by opportunity rather than a specific vacancy per se.
- A key barrier in overcoming skill shortages in the knowledge economy is New Zealand's inability to compete internationally on remuneration. Other

restricting factors are New Zealand's small population size, the loss of New Zealand graduates who want to go overseas, the type of work that New Zealand offers being – in some instances - less 'attractive' than that offered overseas, and/or New Zealand's education system failing to firstly, produce sufficient numbers of graduates with specialist qualifications and skills, and secondly, offer high level, relevant qualifications.

- Organisations endeavour to fill skill shortages in the first instance by recruitment within New Zealand, and secondly internationally. Strategies used to attract employees include promoting New Zealand as a lifestyle choice, promoting the organisation as a desirable employer, promoting the job content, and/or attracting ex- patriots back to New Zealand.
- Organisations that cannot fill their skill shortages report that they “make do” or try alternative, less desirable, strategies such as training new graduates, subcontracting work offshore, employing contractors rather than full time employees, secondment, recruiting from countries that they had previously not considered viable, and/or turning work away.

1.5 Overseas recruitment

- The primary benefit of recruiting from overseas is having access to greater numbers of people with the skills and experience that the organisation requires. Additional factors are the type of experience that people have gained overseas, multi-cultural approaches which encourage innovation, immigrants being highly motivated, and/or access to the immigrant's international networks.
- One of the main barriers to recruiting from overseas is a potential candidate's inability to fluently speak English. Organisations report that they will not consider employing someone who does not fluently speak English. The other key barrier is the inability of the organisation to compete on remuneration with other countries.
- Other barriers are risk of poor cultural-fit; risk of the immigrant not staying; risk of partner dissatisfaction; difficulty in assessing potential candidates' qualifications and experience; the inability to interview candidates on a face-to-face basis and consequently the difficulty in assessing personal characteristics; lost productivity in the time taken to relocate; expense of recruiting from overseas; lack of New Zealand cultural knowledge; lack of New Zealand experience (for some); and/or length of time taken for NZQA notification of qualifications.
- Employers want to reduce some of their risks by increasing the likelihood of retention. They suggested strategies for retaining staff such as bond agreements between immigrants and the employer, assistance in settling into New Zealand, and/or ensuring that partners can obtain a work permit.
- In addition, candidates themselves are perceived to face barriers in coming to New Zealand such as reduced earning capacity, the type of work being less 'attractive' than that offered by larger multinational companies, uncertainty of obtaining a work permit and partner dissatisfaction if he/she cannot obtain a work permit, and/or the immigration process being slow and bureaucratic.

- In terms of specific attributes that employers look for when recruiting overseas people, the principal requirements are specialist skills and/or international skills and experience not available in New Zealand. In addition, the person must speak English fluently, have recognisable experience and qualifications, be able to fit into the company culture, be able to add value to the organisation, have a commitment to New Zealand as the country they want to live in, and/or have the ability to settle in New Zealand.

2 Background

2.1 Introduction

This section of the report outlines the background and objectives of the research.

The main aim of this qualitative research was to provide information that could be helpful in understanding the role that immigration could play in assisting the growth of the knowledge-based economy in New Zealand. The research was commissioned by the New Zealand Immigration Service (NZIS) and carried out in November 2000.

A knowledge-based economy is one in which the generation and use of knowledge is the predominant force in wealth generation and comparative national advantage. “Knowledge is now regarded by many as being at least as important as physical capital, financial capital and natural resources as a source of economic growth”¹

New Zealand’s ability to attract and retain skilled workers will be critical in successfully shifting to a knowledge-based economy. The Government is committed to assisting the transformation of the economy from our current over-reliance on commodity production to the knowledge intensive industries of the future. Since knowledge is not the subject of scarcity like other factors of production, the challenge is to develop and manage it more effectively than other nations.

A knowledge-based economy is characterised by rapid changes in technology, greater investment in research and development, greater use of information and communications technology, growth of knowledge intensive businesses, and importantly, in terms of immigration, rising skill requirements.

Immigration provides New Zealand with an opportunity to attract high calibre people with the skills and qualifications to contribute to the development of a knowledge economy.

An outline of the immigration policy criteria for temporary entry (work visa/permit) or permanent residence entry (the General Skills points system) is appended. Other policies not described include the business categories and family reunification.

2.2 Research purpose

The research summarises:

1. key informants’ perceptions of the key knowledge-based industries in New Zealand;
2. key informants’ perceptions of skill shortages within New Zealand knowledge-based industries; and
3. any specific attributes that businesses would look for in people when recruiting from overseas.

¹ IT and Knowledge-Based Economy Summit. (1997). Canada and the Knowledge-based economy. <http://strategis.ic.gc.ca/SSG/it04360e.html>.

In addition, the research also examined the respondents' perceptions and experiences of immigration policy and service in facilitating the filling of skill shortages. A brief summary of those findings is attached as an appendix.

2.3 Research method

The research included both emerging knowledge-based industries (such as biotechnology) and existing industries that are benefiting from the addition of new knowledge and skills (such as the telecommunications industry). The research technique used was key informant interviews with organisations identified as knowledge-based, with knowledge-based industry sector groups and/or specialist recruitment agencies. A total of 21 key informants were interviewed.

The identification of knowledge-based industries was undertaken in consultation with the NZIS. Further identification emerged through consultation with the industry sector groups, and the knowledge-based organisations themselves. Additional sources of identification were the Ministry of Economic Development website and participants in the SmartNet workshop on the knowledge economy.

Once organisations were identified as potentially knowledge-based, the research contact methodology involved the following process:

- The organisation was telephoned and a request made to speak to a senior person within the organisation who was involved in filling vacancies and specifically overseas recruitment
- The nature and purpose of the research was outlined to the potential participant and further screening was undertaken:
 - That they perceived their organisation to be knowledge-based
 - That the organisation had experienced skill shortages within the last 12 months. Skill shortages were defined as a vacancy for a specialist skilled person that they had been unable to fill in New Zealand
 - That they felt that they were the appropriate person in the organisation to comment on skills shortages, overseas recruitment and/or immigration policy and processes. (The participant was most commonly a human resources manager or held a similar position that deals with overseas recruitment and/or immigration)
- The interview guide was emailed to the participant to outline the topics for discussion, to further confirm the most appropriate person to participate and allow the participant to consult with others in the organisation as they felt necessary.

There was considerable interest and enthusiasm for participation – 100 percent of those who were approached for their involvement in the research study, and, qualified on the basis of skill shortages, agreed to participate. Only one organisation (in the manufacturing sector) that was approached did not participate on the basis that they had not experienced skills shortages in the last 12 months.

A mixture of face-to-face and telephone interviewing was used, with interviews being approximately one hour in length. Regions included Wellington, Auckland, Christchurch, New Plymouth and Palmerston North.

All interviews were conducted by senior researchers from Colmar Brunton's Social Research Agency, from 15 to 28 November 2000.

The interview guide is appended.

2.4 Sample profile of participants

Participants were from the following industries:

- Information technology and communications (E-commerce, Electronics, Programming, Systems Integrators)
- Telecommunications
- Film
- Biotechnology/science research and development
- Health Service Provider
- Employment Consultants
- Industry Sector Groups
- Dairy
- Forestry
- Oil and gas explorer and producer
- Manufacturing technology
- Wool.

2.5 Limitations of the research methodology

The qualitative research approach that was employed (21 interviews) has a limited ability to definitively address objectives 1 and 2, namely to:

1. describe perceptions of the key knowledge-based industries in New Zealand
2. identify any perceived skill shortages within New Zealand knowledge-based industries.

Participants have offered their views on the definition of knowledge-based industries. However these views tend to reflect their own industry. Likewise their views on skill shortages reflect the skill shortages within their own organisation (or industry) rather than an exhaustive list of the skill shortages that exist across the entire knowledge-based sector.

3 Defining Knowledge-based Industries

3.1 Introduction

This section of the report outlines the results for the first research objective pertaining to key informants' perceptions of the key knowledge-based industries in New Zealand.

Of note is the fact that all the organisations that were approached for inclusion in the research considered their own organisation, or the organisations they work with on a consultancy basis, to be part of the knowledge economy.

When attempting to define knowledge-based industries, participants tended to describe industries in terms of the application and utilisation of specialised knowledge. The knowledge-based economy is a very broad concept that is not easily defined, but may include some or all of the following elements:

- Organisations that utilise skills and experience to add value and innovation
- Organisations that undertake world ranking projects or developments
- The utilisation of knowledge and innovation for organisations to move forward, grow and develop
- The application of specialist knowledge, skills and experience to provide a competitive edge
- Organisations that utilise very specialist skills
- Organisations that utilise information technology skills.

The knowledge-based economy is not necessarily defined by industry type, but rather by the **application** of specialised knowledge and skills.

“All organisations have to rely on knowledge.”

Industry type is most likely to be used as an example of where specialised knowledge has been applied. Participants feel that there are some 'obvious' examples of industries that use specialist knowledge and skills such as:

- Information technology (IT)
- Developments in science generally
- Any type of organisation or industry involved in research and development.

Examples of other knowledge-based industries may include any of the following industries (although participants were not attempting to provide an exhaustive list):

- Telecommunications
- Film
- Biotechnology
- Health
- Dairy
- Forestry
- Oil and gas explorer and producers
- Manufacturing technology
- Wool
- Horticulture
- Agriculture

- Fisheries
- Engineering
- Teaching
- Employment Consultants working in the knowledge economy.

3.2 Knowledge-based workers

In addition to attempting to define knowledge-based industries, participants were also asked to define knowledge-based workers.

Knowledge-based workers are defined more by the type of people they are, than by the industry sector they work in (although as previously outlined, the IT industry is a common example of the type of industry that employs knowledge-based workers).

Knowledge-based workers are perceived to be specialists with particular skills and experience. Further, they are perceived to be people with high intellect and people who can make a unique contribution to the organisation. They are often innovative and leaders in their field of expertise.

“The knowledge economy is very broad. It’s about anyone whose skills and experiences add value.”

“Knowledge is the differentiating factor. They have intellectual property and they add value to the organisation’s intellectual property.”

“We need skilled people who have understanding and knowledge of the industry. Innovative people, with a strategic view, who can move the organisation forward.”

“For a company like us, a knowledge economy is all about people having the attributes, skills, knowledge, and background and experiences to contribute to designing, and secondly manufacturing, products that make us world beaters.”

4 Skill Shortages

4.1 Introduction

This section of the report outlines the results for the second research objective pertaining to the identification of perceived skill shortages within New Zealand knowledge-based industries. Specifically this section describes the nature of skill shortages in knowledge-based industries, the reasons that these skill shortages have occurred and the strategies that employers use to endeavour to fill skill shortages.

4.2 The nature of skill shortages

As noted earlier, organisations were recruited for participation in this research study on the basis that they had experienced skill shortages in the last 12 months. Only one organisation² that was approached reported that they had no skill shortages.

The nature of skill shortages varies across organisations:

- Some organisations report that they have vacancies that are difficult to fill both within New Zealand and overseas. These vacancies may take up to six months to fill.
- Some vacancies are not able to be filled (within New Zealand or internationally) so the organisation is no longer involved in active recruitment and has adopted other strategies to cope with the skill shortage (these strategies are outlined in a later section of the report). Theoretically, however, the vacancy still exists and could be filled. In effect, these organisations experience continuous skill shortages.
- Some organisations report that they are also constantly on the look out for people who may add value to the organisation (regardless of vacancy).

Therefore, recruitment is driven either by the need to fill a particular vacancy and/or the desire to recruit a person that is available and has the skills and experience that can be utilised by the organisation. In the latter situation, the organisation will create a position around the skill set provided by the person. This is an opportunity for the organisation to employ a valuable employee.

“We are constantly on the look out.”

“We always have vacancies.”

A common theme about skill shortages is the scarcity of people with specialist skills and/or the lack of experienced people.

Organisations also highlight the fact that one person with specialist skills and experience can make the difference to the organisation winning a major tender for work. Therefore, skill shortages cannot be measured by the number of vacancies that exist for that particular skill, but rather the value of that skill to an organisation.

² This organisation was in the manufacturing sector.

A list of skill shortages is appended. However, the nature of the industries that participated means that this list is based on the view of only selected industries and is not an exhaustive list of skill shortages that exist in knowledge-based industries.

4.3 Perceived reasons for skill shortages

When asked why their skill shortages exist and have persisted, participants indicated that there are three main reasons:

- New Zealand's inability to compete internationally
- New Zealand's small population size
- New Zealand's education system not producing the skills that are required.

4.3.1 Inability to compete internationally

New Zealand struggles to compete internationally for knowledge workers in terms of:

- the financial rewards organisations can offer. This situation is perceived to have worsened with the falling New Zealand dollar

“Just not many people in New Zealand. We compete with multinationals who have unlimited money. There is competition amongst employees for scarce resources.”

- for some knowledge-based organisations, the type of work New Zealand offers can be perceived to be less leading edge and suffers from the fact that New Zealand projects can be smaller. An example of this is in the IT sector.

“In IT, New Zealand doesn't do much fundamental research and product development, for example, language development. Those people tend to go to the US. There's no facility for that in New Zealand.”

- New Zealand's lifestyle may not be attractive for some people. Whilst New Zealand can be an attractive location for young families, new graduates are keen to 'do their OE'.

4.3.2 Small population size

New Zealand's population size means that organisations have a small pool of skilled knowledge workers to choose from. Similarly, New Zealand's small market limits the depth and breadth of experience that people can gain. Therefore, industries that place emphasis on experience search internationally.

4.3.3 Education system

In addition, some organisations perceive that New Zealand's education system fails to:

- produce sufficient numbers of graduates, for example, IT, health professionals
- offer courses that cover the specialist skills that are in demand, for example:
 - there is no Petroleum Engineering degree in New Zealand
 - the telecommunications qualifications offered in New Zealand are not at a sufficiently advanced level

- New Zealand e-business courses are not perceived to produce market-ready candidates.

4.4 Strategies to overcome skill shortages

Strategies that knowledge-based organisations employ to overcome skill shortages are twofold:

- firstly, organisations endeavour to **fill** the skill shortages that they have
- secondly, if endeavours to fill skill shortages prove to be unsuccessful, organisations will then use alternative strategies to cope with the skill shortages that they have.

These two strategies are discussed in further detail below.

The strategies used to fill skill shortages are attempts to recruit within New Zealand and attempts to recruit internationally.

4.4.1 Recruitment within New Zealand

The recruitment costs of employing a New Zealander are lower than those incurred in recruiting an overseas candidate. Additionally, a New Zealander is perceived to have a lower risk of experiencing settlement problems, and they are available to start immediately. Further, New Zealand work experience can be desirable for some employers.

4.4.2 International recruitment

Although many employers would prefer to employ a New Zealander, the skills and experience they require may require a global search (including New Zealand) as the organisation attempts to attract the best possible candidate. Strategies used to attract people include:

- promoting New Zealand as a lifestyle choice, for example, clean, green, crime-free, quality of life for families, minimal travelling time to work and/or out door recreation
- promoting the organisation as a desirable employer, for example, through employee incentives, remuneration packages, working environment, career structure, training and development, assisting with relocation
- promoting the job, for example, as leading-edge, world-ranking, challenging, innovative, and/or unique to the organisation (not available anywhere else)
- attracting expatriates back to New Zealand once they have done their 'OE'.

“We compete on NZ being clean and green, quality of life. We are a unique organisation, we do world-ranking work.”

“It’s about getting the expertise not available in New Zealand. We need the person who’s best qualified for the job. We don’t attract funding if we don’t have the best person.”

Advertising and marketing strategies employed for international recruitment include:

- utilising the networks of international recruitment agencies
- networking with international business partners at conferences, and by word of mouth generally. Some organisations provide incentives for their staff to recruit
- websites which advertise vacancies and which also generate enquiries for positions
- overseas road shows
- advertising in newspapers and journals
- participation in the publication “Working in New Zealand” which is based in the UK
- head-hunting from other organisations.

4.5 Strategies to cope with skill shortages

Organisations that cannot fill their skill shortages report that they then employ various strategies to ‘make do’ or to try and fill the shortage in an alternative (albeit less desirable) way.

The strategies that organisations use to cope with skill shortages over the long term include:

- employing and training new graduates who do not yet have the experience that the organisation requires
- recruiting from countries that the organisation had previously considered too difficult to recruit from (see section on barriers to recruiting from overseas)
- subcontracting projects to overseas partners
- working offshore
- employing contractors in New Zealand to fill positions (the higher contract rate makes the position more desirable than the rate paid to a permanent employee)
- improving pay structures in particular skill shortage areas
- secondment from overseas divisions of the organisation
- turning work away.

“We have had a vacancy all year that we have not been able to fill. We make do and change roles to fit the skills that we do have. We have a graduate recruitment programme to try and grow talent and fill gaps.”

“We sub-contract e-business projects out, sometime offshore, rather than taking on NZ grads and doing it internally.”

5 Overseas Recruitment

5.1 Introduction

This section of the report outlines the results for the third research objective pertaining to specific attributes that business would look for in people when recruiting from overseas. Further, this section of the report outlines knowledge-based organisations' views on overseas recruitment such as the benefits and barriers to recruiting from overseas.

There are benefits to organisations in recruiting from overseas, but there are also barriers and risks. In general, most organisations would prefer to employ a New Zealander if the skills, experience and qualifications were available here. However, in many instances employers perceive that they do need to import the skills they require because the skills are particularly specialist and just not available in New Zealand.

5.2 Benefits of recruiting from overseas

There are a number of key benefits for employers in recruiting from overseas:

- there are greater numbers of potential recruits with the skills, qualifications and experience that is required
- there is a wider pool of experience available, for example, people who have worked on larger projects and/or the latest innovations have a wider variety of experience, or international experience
- a multi-cultural approach encourages creativity and innovation through approaching challenges from different perspectives
- people who come from overseas can be highly motivated and committed to proving their worth to the organisation
- access to other potential recruits and/or customers through the new employee's personal contacts.

“There is a huge pool of people worldwide. They have experience that they can't get here such as working on much larger projects. Cultural difference encourages innovation and creativity.”

5.3 Barriers to recruiting from overseas

In addition to the benefits of recruiting from overseas, organisations also face a number of key barriers.

5.3.1 Inability to fluently speak English

Nearly all of the participants stated that potential candidates' inability to fluently speak English is a key barrier. Fluency in speaking English is particularly important for New Zealand organisations as the people that they recruit must be able to work in a team of people and be able to communicate clearly both verbally and in writing. Not only is internal communication essential, there is also often the requirement to communicate with the organisation's customers. (There are perceived to be very few

‘backroom’ positions that would accommodate people who have difficulty in speaking English fluently.)

5.3.2 Remuneration

Nearly all of the participants stated that their organisation cannot compete internationally with the level of remuneration that can be demanded by people who are in short supply globally. While New Zealand can compete on quality of life, New Zealand’s low dollar means that New Zealand salaries are not competitive when converted to, for example, US dollars.

5.3.3 Other barriers

Additional barriers that organisations face are the:

- risk of a poor culture fit within the organisation, for example, some cultures, such as people from Asian and middle Eastern countries, are perceived to have very hierarchical organisational structures, whereas some New Zealand organisations have developed flatter structures
- risks of employee not staying with the organisation, that is, by going to another organisation or not staying in New Zealand
- risks of partner dissatisfaction either because they cannot find suitable work for themselves, and/or they fail to establish the necessary networks to feel settled
- difficulty of assessing CVs, skills, experience and qualifications, for example, difficulty in determining the New Zealand equivalent of overseas qualifications
- inability to interview the potential candidate on a face-to-face basis. Consequently, a candidate’s personal characteristics, and how well they are likely to fit into the organisation, are difficult to assess
- lost productivity due to the time taken for the employee to relocate
- expense of recruiting from overseas, for example, advertising, airfares and accommodation for interviews
- lack of New Zealand cultural knowledge, for example, Treaty of Waitangi
- length of time required for NZQA notification of qualifications.

“We get CVs and applications through the web. It’s very hard to assess what quality they are. We don’t know what the qualifications mean or who the companies are. They have to speak English to communicate. It is hard to gauge if they are going to fit into the organisation from a distance.”

5.4 Barriers to coming to New Zealand

People with highly specialised skills that are in shortage have options for positions virtually anywhere in the world. In weighing up their options, there are certain disadvantages in coming to New Zealand versus other countries. The key disadvantage is perceived by knowledge-based organisations to be that people will have a reduced earning capacity in New Zealand (due to the lower salaries and the poor exchange rate).

Another disadvantage is perceived by some to be that the type of work may not be as attractive as that offered by large, multinational organisations. For example, in the IT

industry, New Zealand is not perceived to undertake as much research and developmental work as its international counterparts.

There are also perceived to be some disadvantages in New Zealand's immigration policy such as:

- the uncertainty of getting a work permit
- partner dissatisfaction if he/she cannot get a work permit (they only qualify if the partner has residence)
- the immigration process being slow and bureaucratic.

“There are not many people plus they carry higher remuneration. We have to compete with multi-nationals who have unlimited money. We can't pay market rates.”

“Inconsistency between New Zealand Immigration and London. London was unhelpful, she kept on dealing with different people who gave different advice. It was too hard for her. She nearly didn't come. In the end we paid for an immigration consultant.”

“People do want to come here, but there is uncertainty of getting in, plus it takes time, and there's no guarantee of work placement.”

5.5 Strategies to retain overseas recruits

Employers make the following suggestions for increasing their ability to retain employees recruited from overseas:

- employees to be bonded to the employer for a specified time (to recoup the costs of recruitment)
- assistance in settling in New Zealand
- ensuring partner satisfaction (by helping settle and/or obtaining a work permit).

5.6 Desired Attributes when recruiting from overseas

Obviously, the key criteria for employers is the person's ability to do the job effectively, add value to the organisation, and start work quickly to minimise loss of productivity. The employer will recruit the best person from the potential candidates. When there is a suitable New Zealander available they will often prefer to employ the New Zealander as there is a lower risk factor of the individual not staying, and the person is available to start work almost immediately. When there is no New Zealander available, employers can seek to gain a set of skills and experience that is not available in New Zealand. Employers also seek to minimise their risk by employing someone who has the following attributes:

- fluent English skills (both verbally and written)
- international experience and skills
- specialist experience and skills
- recognisable experience, qualifications and skills (that is, the employer knows what the equivalent standard would be in New Zealand)
- ability to fit into the company culture
- conceptual thinkers (people who can add value and innovation)

- leadership skills
- have energy, enthusiasm and commitment to coming to New Zealand
- interpersonal skills including the ability to work in a team and deal with customers
- 30-36 age group as this age group is most likely to stay in the job as opposed to younger people who are keen to “do their OE” (this attribute was mentioned by one participant)
- family’s ability to settle into New Zealand.

“Compared to overseas, more people in New Zealand are involved in customer-dealing roles than a factory type environment such as Microsoft. New Zealand organisations need both technical and ‘soft’ skills.”

“We’re looking for people with life, people who are dynamic and enthusiastic, they can hit the ground running, and are flexible - they can cope with change.”

“We won’t recruit non-English speaking.”

“Science is developing fast. We want to be the front runners. We need leadership and specialist skills. These skills are not available in New Zealand, otherwise we would get them here. The skills are overseas.”

“People who see technology as a means to an end.”

6 Discussion and Conclusions

6.1 Introduction

This section of the report outlines the key conclusions from participants in terms of facilitating the filling of skill shortages and the growth of knowledge-based organisations.

Participants stated that knowledge-based organisations are experiencing continuous skill shortages which they cannot fill in New Zealand as the skills, qualifications and experience that the organisation requires are not available in New Zealand. Employers would prefer to employ a New Zealander as it would incur less cost and risk, but the scarcity of the skills they require means that employers need to recruit overseas.

Employers want to play a greater role in defining areas of skill shortages and facilitating the entry of immigrants to fill those roles.

The growth of the knowledge economy needs to be encouraged through policy and process changes. Key conclusions are that New Zealand needs to:

- recognise that we need to compete in a global market for scarce resources
- recognise that we can't compete on remuneration and therefore have to gain competitive advantage from lifestyle and ease of entry into New Zealand
- market New Zealand as a desirable lifestyle choice
- identify and constantly update skill shortages in New Zealand
- promote New Zealand's knowledge-based industries overseas
- promote the opportunities for jobs in New Zealand (based on the skill shortages)

6.2 Participants' suggestions for improving their ability to fill skill shortages

This section of the report outlines participants' suggested strategies for improving their ability to compete internationally for scarce resources, that is, people with highly desirable skills and experience.

6.2.1 Building a competitive edge

Participants stress the need for immigration policy to recognise that New Zealand is competing for skilled individuals with many other countries.

"We're competing amongst employers globally for scarce resources."

New Zealand needs to build a competitive edge by:

- aggressively marketing New Zealand as an appealing place to live, for example, the lifestyle that New Zealand has to offer
- raising the profile of New Zealand knowledge-based industries as leading edge, world leaders
- identifying skill shortages through a much closer working relationship with employers in knowledge-based industries

- promoting specific skill shortage opportunities in the knowledge-based industries

Employers in knowledge-based industries perceive that the only factor that significantly differentiates New Zealand from the rest of the world is lifestyle. However, the poor remuneration offered in New Zealand may potentially offset the lifestyle gains.

“The biggest sell has always been lifestyle and quality of life, but that’s beginning to wear a bit thin because the dollar is so poor.”

Largely because of New Zealand’s inability to compete in terms of financial rewards, it is critical that our knowledge economy has a high profile internationally and that potential immigrants are aware of the work possibilities that exist in New Zealand.

Employers suggest that the NZIS should work much more closely with the knowledge-based industries to identify and regularly update skill shortages. Employers stress that this would involve regular and ongoing collection of the skill shortages that they are experiencing. However, they also stress that the number of vacancies in a particular area is not necessarily a true indication of the impact of the skill shortage. Employers also stress that NZIS must also have the ability to use discretion to approve an applicant that is not on the skills shortage list but is considered essential by the employer.

The introduction of a comprehensive and regularly updated skill shortage list would remove the requirement for an employer to prove they cannot fill the position in New Zealand and/or the labour market check.

6.2.2 Marketing Channels

The marketing of New Zealand as a lifestyle choice, the promotion of New Zealand’s knowledge economy and the marketing of the skill shortage opportunities within New Zealand would form a complete marketing package. Suggested channels for this marketing and promotion include:

- TV/newspaper campaigns
- road shows
- consulates
- the NZIS website and other communication material.

Appendix A: Interview Guide

Knowledge-based industries

How would you define knowledge-based industries?

How would you define knowledge-based workers?

Skill shortages

What are the positions, roles or skills that your organisation finds difficult to recruit?

What attributes are they looking for? What barriers are there?

What are your views on the reasons that they are difficult to recruit?

What are the time periods that we are talking about for recruitment?

What strategies have you used to improve your ability to fill these positions/skills shortages? Probe: importing skills from overseas, training, pay structures, changing products and service?

What about retaining these skills? Are the issues similar/different to recruitment issues? In what way?

Experience/perceptions of recruiting from overseas

What are the issues for your organisation in recruiting from overseas?

What are the advantages or benefits for your organisation?

What are the disadvantages?

What would alleviate the disadvantages?

What would make it easier to recruit and retain staff from overseas

What has been your actual experience of overseas recruitment? What worked well/not well?

Experience/perceptions of immigration policy

What knowledge and/or experience do you have with immigration policy. Probe temporary work permits, permanent work policy

What aspects of immigration policy assist your organisation in recruiting from overseas?

What aspects of immigration policy make it difficult?

What changes in policy would make it easier to recruit and retain the skills that your organisation needs?

Appendix B: Experience and Perceptions of Immigration Policy

1. Key Informants' Knowledge and/or Experience of Immigration Policy

The level of knowledge and understanding of immigration policy and procedure varied depending on the extent of the overseas recruitment that the organisations had been actively involved in. Participants often spoke interchangeably about temporary and permanent entry and about immigration policy and immigration procedure, making little distinction between the terms.

2. Aspects of immigration policy that assist organisations in recruiting from overseas

Key informants reported that the current immigration policy enables them to recruit some of the 'skill shortage' people that they require from overseas. Specifically, employers like the fact that immigration policy enables people to work in New Zealand without having permanent residence and that residence can be applied for once a work permit is obtained and the person is working in New Zealand. Most of the immigration checks, for example, police and health checks were perceived to be an appropriate means of restricting entry.

3. Aspects of immigration policy that make it difficult for organisations recruiting from overseas

The points system framework is perceived to be appropriate for restricting entry to New Zealand, but not so effective for attracting those with the skills and/or experience needed to fill skill shortages in the knowledge economy. It was noted that there was no separate policy for skill shortages and that the points system did not prioritise the skill shortages that exist in New Zealand.

The key limitations of the work permit policy were perceived to be that:

- it is a vacancy driven process rather than giving employers the flexibility to recruit when they see an opportunity to employ someone who would be an asset to the organisation
- the requirement to advertise is sometimes inappropriate or unnecessary as employers state that their first preference would generally be to employ a New Zealander
- the labour market check is sometimes inappropriate or unnecessary
- skilled people are unable to obtain a work permit until they have a job offer
- some partners are unable to obtain a work permit, which contributes to partner dissatisfaction
- there is a lack of flexibility in the duration of a work permit to match contract terms
- there is no policy for fast-tracking skill shortage applications
- the requirement for employers to register with the Department of Work and Income is inappropriate as skill shortage people are unlikely to register with Work and Income

4. Changes in immigration policy that would make it easier to recruit and retain the skills that organisations need

New Zealand's immigration policy and procedures are perceived to be key areas from which New Zealand can gain competitive advantage over other countries to attract skilled workers. The respondents noted areas in which the NZIS could take actions, such as:

- work more closely with businesses to identify and update information on skill shortages
- remove the requirement to advertise and/or undertake the labour market check
- remove the requirement to register with the Department of Work and Income
- give priority to skill shortages over other points criteria for residence
- be flexible in the duration of the work permit (for example, up to the term of a contract whether that is three years or five years)
- fast track applications that will fill these shortages
- employ specialist NZIS staff to deal with skill shortage applicants and the knowledge-based employers
- work with the NZQA to reduce the turnaround time for qualification assessment.

Appendix C: Detailed Skill Shortages

Skill shortages

The following list illustrates the skill shortages that were mentioned. However, the nature of the industries that participated means that this list is based on the view of only selected industries and is not an exhaustive list of skill shortages that exist in the knowledge-based industry.

- Health professionals across the board
- Entire IT area
- Admin/Secretaries
- Consultants in Financial/Professional area
- Software developers
- Specialists in Financial Services
 - Accountants
 - Taxation
 - Corporate finance
 - Auditing
- Application of computer software in design eg CAD operators
- Information Communication Technology
 - Skilled Unix technical support
 - Project Managers/Senior Project Managers
 - Enterprise/Solution Architects
 - Senior Java developers
 - SAP, ORACLE developers
 - Senior technical infrastructure staff
- Information systems
- E-business Solution Architects
- E-business professionals (lower level)
- Industry specific E-business experts
- Programming skills
- Java
- Software programme analysts
- Experienced Science Managers (those who can apply for funding etc.)
- Petroleum engineers (Oil and gas exploration and production)
- Drilling engineers (Oil and gas exploration and production)
- Geo-science experts (Oil and gas exploration and production)
- Electronics engineering

- Sheet metal and tool-making engineers
- Senior quality engineers
- Mechanical design engineers
- Electric design engineers
- Design engineers who use PROE
- Switch transmission technical workers (Telecommunications)
- Information Systems workers (Telecommunications)
- Call centre and admin staff (Telecommunications)
- Radio Frequency Engineers (Electronics)
- Digital Signal Processing Engineers (Electronics)
- High Speed Digital Hardware Engineers (Electronics)
- Software Engineers (Electronics)
- Embedded software experts (Electronics)
- Animatronics (Film)
- Computer Graphics Imaging (Film)
- Production Management and line producing (Film)
- First Assistance Directors (Film)
- Spinning and weaving technology workers (Wool)
- Proteomics science and research workers (Wool)
- Workers in the Genetic area (Wool)
- Textile technologists (Wool)
- Skilled forestry workers
- Management with a forestry background
- Biotechnicians
- Process engineers
- Microbiologists
- Molecular scientists
- PhD scientists with biotech background

IT shortages

We understand that the following list of skill shortages has been provided by ITANZ to NZIS, and is updated on a quarterly basis

ACF2	Data Dictionary
Adabas	Data Modelling
AS400	Data Warehousing
Assembler	Datacommunications
BPCS	Dataflex
BPR (Business Process Re-	DB2

engineering)	
Business analysis	Delphi
Business consulting	Developer 2000
C	EDI (Electronic Data Interchange)
C++	EFTPOS
CA11	Electronic Commerce
CA7	ENDEVOR
Cardpac	Facilities Management
CASE (Computer Aided S/ware Eng.)	Frame Relay
CICS	FTP
Cisco	GIS (Geographical Information Systems)
Client Server	GUI (Graphical User Interface)
Clipper	Hogan
Clist	HP-UX
CAN (Certified Novell Administrator)	HTML
CNE (Certified Novell Engineer)	Hubs
COBOL	Information Mapping
Control D	Informix
Crystal Reports	Ingres
CTI (Computer Telephony Integration)	RAD (Rapid Application Development)
Internet	Rational Rose
ISDN	Real Time
IVR (Interactive Voice Response)	REXX
JAD (Joint Application Development)	Routers
Jade	RPG 111
Java	RPG 400
Kepner Trego	RS6000
Knowledge Management	Sales and marketing
LAN	SAP
Linc	SAS
LINUX	S-Designer
Lotus Domino	Smalltalk
Lotus Notes	SMS Server
Master CNE	SNA
McCormick & Dodge	Solaris
MCP	SQA
Data Analysis	SQL
MCSE	SQL Server
MS Project	SQL*Forms
MVS	SQL*Plus
MVS/ESA	SQL*RPT
MVS/SP	SUN
MVS/XA	SunOs
Natural	Sybase
Netview	TAL

Network Design	Tandem
NFS	TCP/IP
Novell Netware	Tester
Object Modelling	Unisys A Series
Object Star	Unix
ODBC	VAGen
OLE	Visual Basic
OO	Visual C++
OOA	Voice Communications
Oracle	VSAM
Oracle Case	VTAM
Oracle Financials	WAN
OS/2	Windows 95
OS400	Windows NT
PeopleSoft	X.25
PL/SQL	X.400
Power Builder	X-Windows
Pro *C	Year 2000 (Y2K)
Project management	RACF

Health shortages

Nurses (experienced 2 years +)

Intensive Care

Cardiac

Cardiothorasic

Forensic Psychiatry

General Surgery

General medical

Neonatal

Midwifery

Medical – Doctors (SMOs)

Radiation & Oncology

Radiology

Medical Genetics

Psychiatry

Junior Doctors (NMOs)

Psychology

ONG

Surgery

Radiation therapists

MRT (Medical Radiation Technologists)

MRI (Magnetic Resonance Imaging)

Nuclear medicine

Ultra Sonography

- general

- ante natal

Occupational Therapists

Physiotherapists

Speech Language Therapists

Quality experienced administrative staff

Pharmacists

Appendix D: Immigration Policy

This section provides details of New Zealand immigration policy. This information was provided by the NZIS. Described is the General Skills policy and the work permit policy. Other policy include Family Reunification and Business.

Targeted Migrant Categories

The General Skills and Business Investor categories within residence policy enable skilled/business migrants to obtain residence in New Zealand. In addition to other policy eligibility criteria, migrants must meet English language, character and health requirements. The broad policy objective of the General Skills and Business categories is:

- to develop New Zealand's human capability base; and
- foster international linkages; and
- contribute to the development of a culture of enterprise and innovation; while
- maintaining social cohesion.

General Skills policy objective

Migrants are selected on the basis of key human capability indicators and their ability to settle. Applicants in the General Skills category are assessed by a points system. Residence will be declined if the applicant's points total does not exceed the automatic fail mark. An applicant may apply for an open work permit if they are within five points of passing.

Minimum points required

Applicants in the General Skills category must be awarded a minimum of one point for work experience and 10 points for qualifications (unless a New Zealand qualification). Applicants who fail to attain those levels of points for work experience and qualifications will not be approved.

Summary of General Skills Points Table

POINTS FACTOR	POINTS
QUALIFICATIONS	
1. Qualifications	
Applicants must attain a minimum of ten points for qualifications to be approved under this category.	
Base qualification	10
Advanced qualification	11
Masters degree or higher	12
2. New Zealand Qualifications	
Additional one point awarded for a New Zealand qualification recognised for points, except for qualifications gained with NZODA assistance.	
	1
EMPLOYABILITY	
3 Work Experience	
Applicants must attain a minimum of one point for work experience to be approved under this category, unless they have completed a qualification in New Zealand that is eligible for points and was not gained with NZODA assistance.	
2 years	1
4 years	2
6 years	3
8 years	4
10 years	5
12 years	6
14 years	7
16 years	8
18 years	9
20 years	10
4 Offer of employment	5
5 Age	
18-24 years	8
25-29 years	10
30-34 years	8
35-39 years	6
40-44 years	4
50-55 years	2
56 years of age and over may not be approved under this	0

	category	
	SETTLEMENT FACTORS	
	Maximum points for settlement factors	7
6	Settlement Funds	
	\$100,000	1
	\$200,000	2
7	Spousal Qualifications	
	Base qualification	1
	Advanced qualifications, masters degree or higher	2
8	Family Sponsorship	
	Sponsorship by a close family member	3
9	New Zealand Work Experience	3
	1 year	1
	2 years	2

Work Visa/Permit Policy

These provisions apply in addition to those contained in the **Generic Temporary Entry Policy** section of the New Zealand Immigration Service's Operations Manual.

1. Work policy objective

The objective of the work visa/permit policy is to protect employment opportunities for New Zealand citizens and residents while still allowing:

- New Zealand employers to recruit temporary workers from overseas to meet particular or seasonal skill needs which cannot be met from within New Zealand; and
- New Zealand to meet its obligations, under bilateral agreements negotiated with the governments of neighbouring countries in the South Pacific, to provide opportunities for citizens of these countries to undertake temporary employment; and
- visitors to New Zealand to lawfully work while on holiday provided this does not take away employment opportunities from New Zealand citizens or residents; and
- permission to work to be granted on a reciprocal basis to people entering New Zealand under approved working holiday schemes.

2. Standard work policy requirements

- a) Work visas/permits may be issued to applicants who meet the standard requirements for a temporary visa/permit and who, unless otherwise

specified, also meet the policy requirements for a work visa/permit. The policy requirements are that applicants must:

- i) produce evidence that they are suitably qualified by training and experience to do the job they have been offered, and that they can meet any New Zealand certification or registration requirements if these are required to carry out the job in New Zealand; and have an offer of employment for which there is no suitably qualified and experienced New Zealand citizen or resident available; or
 - ii) meet the requirements as specified in any one of the Special Categories that follow.
- b) All job offers (in i) above) must be tested against the New Zealand labour market unless otherwise specified.

3. Requests for approval in principal to recruit overseas

Requests for approval in principle to recruit temporary workers from overseas may be made by New Zealand employers before the lodgement of applications for work visas by individual applicants. Requests of this nature must include a case for the recruitment of workers from overseas. The case must confirm that there are no suitably qualified and experienced New Zealand citizens or residents available to undertake the work.

4. Funds/sponsorship requirements

Applicants for work visas/permits must have:

- sufficient funds for maintenance and accommodation; or
- sponsorship by a relative or friend in New Zealand. Sponsors must be:
 - New Zealand citizens or
 - New Zealand residence permit holders without requirements imposed under section 18A; or
 - exempt under section 12 (1) of the Immigration Act 1987 from the requirement to hold a permit; or
- a guarantee of maintenance and accommodation by their employer; or
- a proposed salary that is considered by a visa/immigration officer to be sufficient to cover maintenance and accommodation.

5. Onward travel requirements for work visa/permit applications

- a) Applicants for work permits are required to show evidence of the travel arrangements made to leave New Zealand at the end of their stay, such as:

- i. actual travel tickets (confirmed or open-dated) out of New Zealand to a destination in which the applicant has the right of entry; or
 - ii. (only for applicants on arrival in New Zealand) a work visa endorsed to show that the onward travel requirement has been met or waived; or
 - iii. written confirmation from an airline/travel agency that onward travel has been booked and paid for; or
 - iv. sponsorship covering repatriation, which can include a written guarantee of repatriation from the New Zealand employer.
- b) A visa officer may also request the above evidence from applicants for work visas.

6. Maximum currency of work permits

Subject to any special directions to the contrary, where an applicant meets work permit policy, a work permit may be:

granted for the period for which employment is offered, up to a maximum of three years. Further work permits are subject to the applicant meeting the standard requirements and a further labour market test. (This provision does not apply to applicants holding working holiday scheme work permits.)

7. Definition of employment

- a) Employment is defined as any activity for “gain or reward” (section 2 of the Act).
- b) “Gain or reward” includes any payment or benefit which can be valued in terms of money i.e., board and lodging, goods (for example, food or clothing) and service (for example, transport).
- c) A person is considered to be undertaking employment whether the payment or benefit for the activity is being provided by a New Zealand resident or an overseas resident.
- d) Full-time employment is based on a 30 plus hour week.

8. Local labour market test

- a) When policy requires a local labour market test, immigration officers should be satisfied that there are no New Zealand citizens or residents available to do the job offered, by one or a combination of the following:
 - i. the employer making a case for each individual application;
 - ii. NZIS offices in New Zealand and overseas checking an offer of employment through the Department of Work and Income;
 - iii. NZIS offices seeking labour market advice from others in the particular industry.

- b) Depending on the circumstances, the immigration officer will decide in any particular case whether or not one or more or all of the above enquiries are to be made, or whether other enquiries should be made.