

March 2011

Report 12

2058

StrategyNZ

Mapping our Future

Workbook

Exploring visions,
foresight, strategies
and their execution

MCGUINNESS INSTITUTE

Project 2058: Report 12

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StrategyNZ: Mapping our Future Workbook

Exploring visions, foresight, strategies and their execution

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For further information	The McGuinness Institute Phone (04) 499 8888 Level 1A, 15 Allen Street PO Box 24222 Wellington 6011 New Zealand www.mcguinnessinstitute.org
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Introduction

This workbook is a collection of concepts, analytics, wildcards, inspirations and brainstorms designed to be a means of triggering ideas and inspiring thoughts.

Background to the workshop

In July 2008, I travelled to the United States to attend my first World Futures Society conference in Washington DC. My curiosity got the better of me. Before leaving New Zealand I had phoned ahead and asked the organiser which pre-conference course I should attend. I felt I knew nothing, and was concerned that without some basic knowledge about future studies I would simply not understand what was being said. The organiser strongly recommended that I attend Dr Peter Bishop's course 'Introduction to Future Studies'. This is the same Peter Bishop the Institute has brought over to New Zealand to run our pre-workshop course on 28 and 29 March 2011. Peter introduced me to a new language and way of thinking.

The reason for holding this New Zealand workshop stems from a dinner conversation between about 20 participants on the last night of that 2008 conference. The conversation, as one would expect, was about the future, but more specifically about countries that could make a difference to that future. As the conversation moved around the table a number of countries were moved off the list. The US was considered to be like an elephant – either too big to change direction or too quick to respond (as in a stampede), neither state being optimal. The United Kingdom was considered to have its own problems to solve, which the participants believed would take years. France and Ireland were just starting to show some economic stress, and Germany was sitting in the middle of the European Union, which had only recently been expanded and was in need of stability and steady guidance. It was agreed that countries that could make a difference were more likely to be developed (in that they had resources, knowledge and time available), democratic (in that citizens would demand change and government would deliver new models and strategies), peaceful, and not be drawn into the problems and challenges of surrounding countries. About four hours later, our group was the only one in the restaurant, and by then the list of countries was down to five – one

country from South America, one from Asia, two Nordic countries, and New Zealand. On my return flight, my mind kept returning to this conversation and the five countries on that final list. It was clear that these people, and possibly others like them, expected New Zealand to be a game changer. I could not help thinking that if they expected us to make a difference we had some work to do.

The birth of 'StrategyNZ: Mapping our Future' grew out of a desire to turn this thinking into action. The shape of this came from some scenario work the Institute had published in 2008: *Four Possible Futures for New Zealand in 2058*. From this work it was apparent that New Zealand's small size meant its future was dependent not only on how well the country managed itself, but on how the world managed itself. The worst-case scenario for New Zealanders in the medium term was if New Zealand managed itself well and the world did not.

This means New Zealand needs to be an active participant in world affairs, even if it is simply to sit in the audience and clap or boo the performance. But equally importantly, it means we have a role to play as an example to the world, to show how things might be done.

It is this last point that we are attempting to explore through 'StrategyNZ: Mapping our Future'. Where do you want New Zealand to go and how do you want to get there? What trade-offs are you prepared to take and what values do you want to ascribe to? I do not have the answers to these questions, but I believe that collectively, solutions do exist. And if I am wrong, we had better implement some effective processes and institutions to help us find them.

Peter Bishop's course 'Introduction to Future Studies' provides the tools for exploring the future, and after Peter, Dale Pearce will hold a one-hour session on Tuesday afternoon. Dale will conduct a brief exercise to familiarise participants with strategy maps. These techniques will then be applied at the workshop. We are also fortunate to have Aaron Maniam, from Singapore's Centre for Strategic Futures, join us by conference call on the Wednesday to offer insight into how other countries

may execute future thinking. However, and most importantly, the focus of the workshop will be on strategy maps.

The creation of strategy maps is a methodology developed by Harvard Business School, and the objective of the workshop is to apply that methodology to a New Zealand context. Although the strategy map is just one small tool used in the development and polishing of strategies, it is a powerful one in that it not only provides clarity, but also enables strategy to be discussed and debated. This means that people buy into the strategy because they understand not just what, but why it delivers the results. In other words, the link between cause and effect is easily apparent (Figure 1 shows the six stages and the distinction Kaplan and Norton draw between developing the strategy and strategy execution).

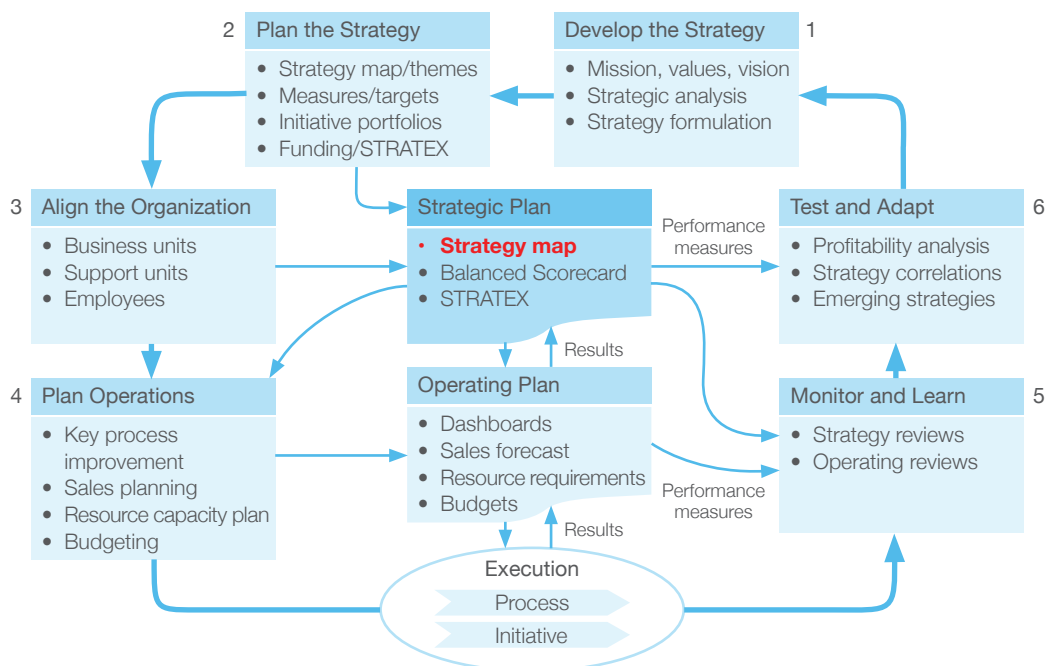
Broadly speaking, Harvard Business School professors are ‘anthropologists of business’, in that they try to define what makes some businesses successful and others unsuccessful. Over the years, and through the eyes of many researchers

and practitioners, they have found a range of ways of thinking and acting that appear to consistently drive success. They have taken these observations, developed frameworks, written and lectured on them, and then tested and checked that they are on the right track. Today, this enables us to tentatively apply a framework that is in reality more art than science, and more applicable to business than to nation states. This being said, other countries are in the process of adopting similar business models.

One example is Brazil, where the Confederation of National Industries (CNI) has led one of the most well-known and complex applications of theme-based strategy maps. Initially, 50 business leaders designed a strategy map for Brazil’s economic development. They then invited feedback, which led to the development of the map shown in Figure 2. The map translates the vision into five tangible results, but does not by itself describe how the strategy is to be executed. To do this Brazil added a further level of detail, as shown in Figure 3. This is a more detailed map for the innovation theme, which shows the linkages and

Figure 1 The management system: Develop the strategy

Source: Kaplan, R. S. & Norton, D. P. (2008), p. 36. © 2008 Harvard Business School [Harvard Business Publishing] and used with permission.



therefore the resulting cause and effect required to execute the innovation theme of the strategy.

Professor Robert S. Kaplan and David P. Norton are two world leaders in developing a comprehensive framework for developing and executing strategy. While this is a complex subject, the detail of which is beyond the scope of a two-day workshop, I believe it is possible to develop expertise in a small part of the process, the creation of strategy maps. It is my view that New Zealanders are great at developing ideas, reasonably capable at collaboration, but poor at execution. New Zealand is not alone in this respect. In their book *The Execution Premium*, Kaplan and Norton note that strategy execution is a significant problem shared by many executives. They quote a 2006 survey of 143 performance management professionals in which 46 percent of respondents stated they did not have in place a strategy execution system.

The workbook puts forward a common language of concepts and terminology to speed up the discussion and collaboration process between participants, and suggests a few interesting issues to think about and research in advance of the workshop.

How to use this workbook

Before you can map a strategy, you need to develop a strategy. The mapping process can be used to test your strategy, and improve it, but you do need to know what success would look like and what levers you would need to pull to get there. This workbook provides a simple process, some key concepts, a little data, a few wildcards and some inspiration to get you started. The workbook has drawn from thinkers in a variety of disciplines who have inspired the team at the Institute. It is definitely not a comprehensive overview; however it will evolve into a more integrated publication in the future. It aims to be interesting, easy to pop in and out of and not too taxing.

Workbook model

To ensure the workbook is easy to use, it is organised into four parts, followed by one main exercise and a case study. The four main parts are:

- Vision (which we define broadly as covering terms like 'mission', 'purpose' and 'values');
- Foresight (looking at the past, analysing the present and exploring the future to gain knowledge about the challenges and opportunities ahead);
- Strategy (developing and mapping our preferred future); and
- Execution (the energy and precision that propels that strategy into action and delivers the outputs and desired outcomes).

We see the model as a rocket ship – without having the energy behind the execution, the rest will simply be lost in space (see diagram overleaf).

Changing direction requires a lot of energy and commitment, which perhaps explains why change management is so hard. Consequently, when a moral imperative comes our way, we should think hard not only about whether we should return to the status quo, but how we might use this imperative to significantly improve the prospects of current and future New Zealanders. I am reminded of the economist Milton Friedman, who reiterated this concept in the 1982 preface to his signature treatise *Capitalism and Freedom*, originally published in 1962: 'Only a crisis – actual or perceived – produces real change. When that crisis occurs, the actions that are taken depend on the ideas that are lying around.'

Whether the crisis be the impact of the Christchurch earthquakes, oil prices or climate change, our job is to make sure there are lots of ideas out there and that where possible those ideas are integrated and provide real value for current and future generations. Furthermore, the more strategic ideas – those that are resource-hungry and may have significant impacts – should be presented in such a way that they are clear and able to be debated before being implemented or dismissed.

Figure 2 Economic development strategy for the country of Brazil

Source: Kaplan, R. S. & Norton, D. P. (2008), p. 81. © 2008 Harvard Business School [Harvard Business Publishing] and used with permission.

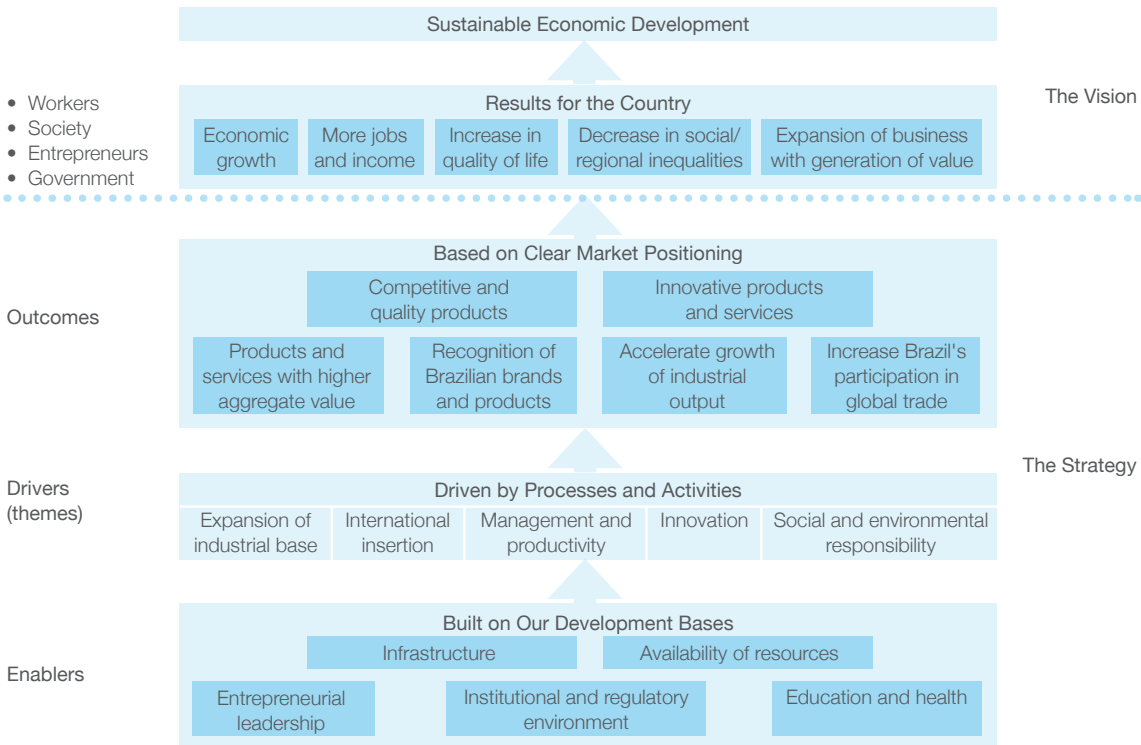
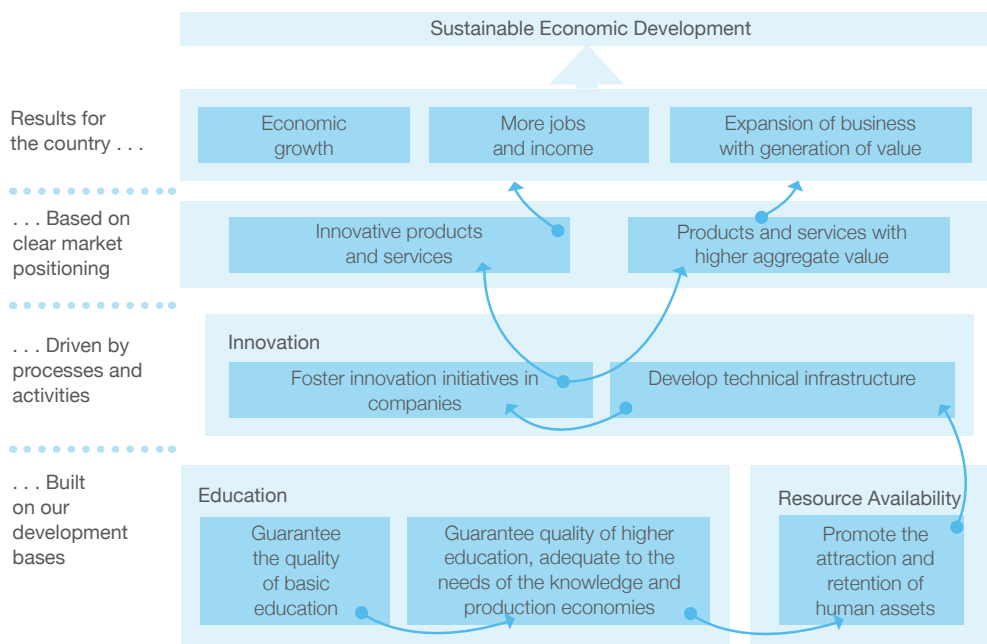


Figure 3 Cause-and-effect relations for Brazil's innovation theme

Source: Kaplan, R. S. & Norton, D. P. (2008), p. 83. © 2008 Harvard Business School [Harvard Business Publishing] and used with permission.



Workbook Model



Case study: Revisiting Julius Vogel

The workbook finishes with a brief 'back of the envelope' exercise in strategy development. We take a closer look at a strategy proposed by Julius Vogel in 1870, then ask you to describe New Zealand's current strategy, and ideally propose some possible and preferred strategies.

Acknowledgements

I want to acknowledge Peter Bishop (Future Studies) and Dale Pearce (Palladium), who have both agreed to provide brief course notes at the pre-workshop course. Furthermore, the guidance of Roger Dennis has ensured the workbook has remained high level and strategic. A full list of acknowledgements can be found at the back of this workbook.

Feedback

The team at the Institute look forward to meeting you soon. As we want to deliver you the best workshop, please send us your insights from the workbook so that we can work hard to improve future workshops.

I look forward to seeing you there.

Wendy McGuinness
Chief Executive
Sustainable Future Institute

Icons used in this workbook

The following icons are used to indicate the type of content to be expected in each section:



Concept is a broad, abstract idea or a guiding principle that is usually generally understood by the general public but is often expressed in terms of a parable or well-known example.



Analytics is relatively new in scope in that not only does it include traditional analysis such as data management, reporting or performance analysis, but goes further to include advanced analysis. In the workbook, analytics includes reviewing past data and questioning what additional data or estimated information it would be useful to know.



Wildcard refers to an unexpected event (low probability) which, if it happens, has significant impact (high magnitude). Examples are pandemics, war or volcanic eruption.



Inspiration is a poem or piece of prose that fits nicely with the workbook model and acts as a full stop to one of the four sections. It can also be insightful to consider when the item was written, and by whom.



Brainstorm is the freedom to list thoughts or ideas on a topic without having to think whether they are right or wrong; simply putting them on paper is enough. We also use this outline to indicate where you might like to respond by asking and answering questions.

New Zealanders' thoughts on Vision

n.d.	Proverb	Waiho i te toipoto, kua i te toiroa. Let us keep close together, not far apart.
1879	Premier Sir Julius Vogel (Orsman & Moore, 1988: 659)	'I have an absorbing affection for New Zealand, and it is intolerable to me to see its prosperity marred and retarded. – The Statesmen of New Zealand should remember that their work is the heroic one of Colonization – Questions of Whigs and Tories liberals and conservatives are comparatively of little moment to them compared with the one main question of how they can settle in the colony a large happy and contented community.'
1900	Journalist Stella Allen (McGill, 2004: 10)	'We are a special people, assuredly a little superior to others, and destined to guide the world in the path of social reform.'
1922	Short story writer Katherine Mansfield (Murry, 1927)	'Warm, eager, living life – to be rooted in life – to learn, to desire to know, to feel, to think, to act. That is what I want. And nothing less.'
1934	Poet Arthur Rex Dugard Fairburn (McGill, 2004: 90)	'Shall I make you a prophecy? In 50 years' time N.Z. will be an American colony or protectorate.'
1937	English anthropologist Geoffrey Gorer On Frances Hodgkins (McGill, 2004: 108)	'The fact that she is a native of New Zealand may perhaps account for her originality and the freshness of her vision. We in Europe ... are so saturated with the tradition of two thousand years that our eyes are fogged by remembrances of the past: in the New World it may be that people's eyes are still innocent.'
1973	Prime Minister Norman Kirk 29th Prime Minister of New Zealand (Hayward, 1981: 170)	'The aspirations of the smaller powers, their fears, their determination to build a world without war, a world where a rule of law prevails, a world where the weaker will not be subservient to the political and economic interests of the strong – these demands cannot be ignored.'
1979	English artist and sculptor Peter Webster (Orsman & Moore, 1988: 673)	'Yet the Europeans also had their vision of a new society, different from that which they had left, and in their vision of New Zealand there were certain Utopian elements in which Jack was to be as good as his master, provided of course he was white.'
1981	Academic Edward Musgrave Blaiklock Chair of Classics at Auckland University from 1947 to 1968 (McGill, 2004: 34)	'I have always returned to this land convinced that it is the most beautiful land in the world ... Let us keep it unpolluted as we enjoy its fragile loveliness.'
1982	Musician Tim Finn Pop song 'Six months in a Leaky Boat' (McGill, 2004: 94)	'Aotearoa, rugged individual, glisten like a pearl At the bottom of the world.'
1984	Professor James Duncan (Duncan, 1984: 218–219)	'Providing we have as a society done our best to satisfy our collective and individual consciences we need have no fear of the outcome, and can make this country into a world leader in all aspects of endeavour – social, economic, technical, etc.'
1991	Broadcaster Gordon Dryden (McGill, 2004: 79)	'If we want to build a nation where our kids are going to beat us up when they grow up, we're going the right way about it.'
1993	Maori leader Dame Whina Cooper On her 98th birthday (Barber, 1994)	'Before I close my eyes, to see our Maori people understand the two races in New Zealand will love ... that's what you want, that love between two people.'
1999	Novelist Ian Cross (Weir, 2007: 63)	'We are a diverse and divided little country, uncertain of our future, doubtful about our past.'
2002	Governor-General Silvia Cartwright (Cartwright, n.d.)	'We can survive as a population only if we conserve, develop sustainably, and protect the world's resources.'
n.d.	Ophthalmologist Fred Hollows New Zealand born, and Australian of the Year (Hollows, n.d.)	'To my mind, having a care and concern for others is the highest of the human qualities.'

1. Vision

What is the problem that we are trying to solve? It is critical we develop a clear purpose for what we are trying to achieve and an understanding of the values and ethics that will shape our thinking and actions.

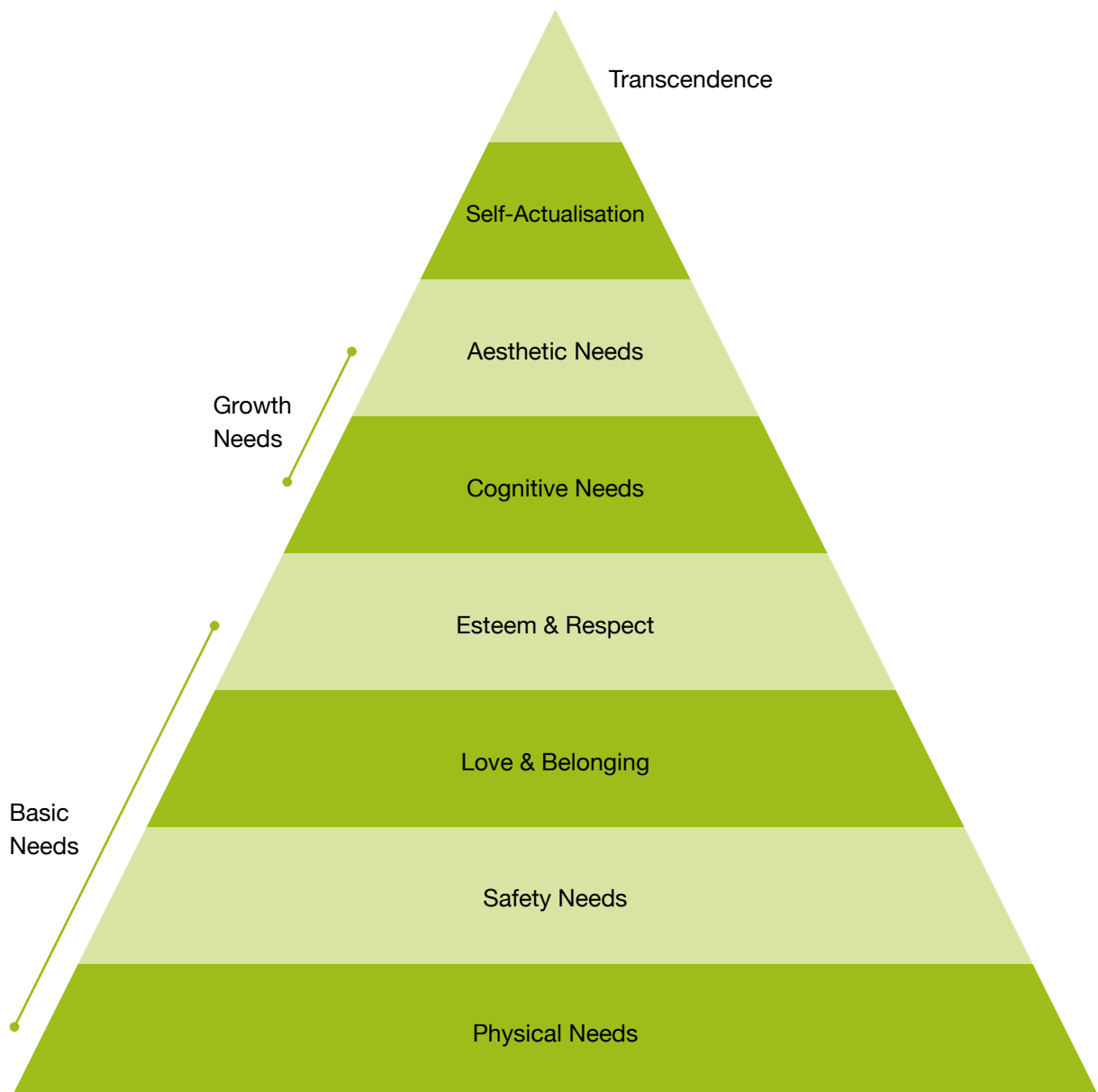
This short section aims to draw a distinction between vision and other aspects of strategy development. In an article published in 1900, Patrick Joseph O'Regan concludes that the reader 'will agree that New Zealand, and indeed the world generally, will be much better as a place of abode a hundred years hence' and that 'our highest aim should be to leave our country and the world better for our having lived'.



Maslow's Hierarchy of Needs

In his book *Strategy 360*, Randall Bell puts forward the following eight-stage model (p. 218).

The purpose of Maslow's Hierarchy is that it gives us a set of values that should be considered when putting together a vision. Maslow's Hierarchy of Needs illustrates one possible hierarchy of human needs. Firstly, basic needs are fulfilled, then higher order needs are addressed. The ultimate need is self-actualisation, where an individual determines, then fills, their ultimate role in life. The model pictured below was modified to include transcendence needs: the need to help others reach self-actualisation.





Rapua te ara whānau
Hei ara whakapiri
I runga i te whakaaro kotahi

Seek the broad pathway that
will unite the two peoples
under one endeavour

– Māori Proverb



One Hundred Years Hence

In 1900 Patrick Joseph O'Regan wrote an article in which he created a vision of what New Zealand would be like in 100 years. The article was published in *The New Zealand Illustrated Magazine* and has been reproduced here.

Patrick Joseph O'Regan was born on the West Coast of New Zealand in 1869, the son of Irish immigrants who came to the West Coast in search of gold. Patrick had no formal education, yet managed to contribute to the local press on labour issues, under the pseudonym 'Horney Hand'. He was clearly very capable, in that he was elected as the youngest member of the House of Representatives when he was just 24 years old. In 1900 he moved his young family to Wellington to begin his legal training at Victoria College. It was at this time, at the age of 31, that O'Regan wrote the following article for *The New Zealand Illustrated Magazine* (Sweetman, 2010).

O'Regan went on to become known as a working-man's lawyer, and was appointed a judge at the Court of Arbitration in 1937. He died in Wellington in 1947. Rory Sweetman notes in *The Dictionary of New Zealand Biography* that he: 'rose by talent and application. He held firm to his political and religious beliefs whatever temporal disadvantage this involved. Patrick O'Regan called no man master' (Sweetman, 2010).

WORTH THINKING ABOUT:

- What did Patrick get right and wrong, looking backwards over the last 100 years?
- What were the wildcards he did not account for?
- What experiences enabled him to develop his perspective of the future?
- If you were to write 'One Hundred Years Hence', what would the article contain?



One Hundred Years Hence.

BY P. J. O'REGAN.



ALTHOUGH the public is wont to regard predictions with an amount of scepticism, which is natural under the circumstances, there is absolutely no reason to doubt the accuracy of that foreknowledge which comes from reading the past and the trend of current events afloat. Progress cannot be denied, and there is no difficulty in predicting what will happen in the next century if we consider the logical issue of many movements now going on quietly, almost imperceptibly, but none the less surely.

It is certain that our descendants a century hence will look back on a period of marvellous development. We sometimes wonder at the achievements of the present century; but they will pale into insignificance when compared, one hundred years hence, with the realities of the twentieth century. Then will have been achieved universal peace—peace between nations as the complement of domestic and national peace. Armies and navies will have become things of history, and the emblems of war in connection with great functions will be meaningless to those whose memories do not go back to the days of legalised murder. People will wonder why professing Christians so long tolerated war. Just now, when England is in the throes of a bloody fight in South Africa, this may seem a wild impracticable dream. Nevertheless the tendency of the times is all for peace. But in order to realise this clearly we must take a survey of the past. We shall then realise that war will go the way of gladiatorial combats, of duelling, of slavery, and many

other customs once believed to be as unchangeable as the hills. Time was when war was deemed the chief aim of nations. Even virtue was construed to mean prowess on the battlefield. Then trade and industry were considered the baser callings. The "first gentlemen" were those who revelled in military glory. That time has passed forever. Trade is now the road to the highest and most honourable positions, and no form of honest labour is so proscribed that he who follows it may not rise to positions of trust and of high respect. The growth of trade—"the harbinger of peace"—will be marvellous within the next century; indeed, it will be one of its greatest wonders. The international exhibitions and trade congresses will eclipse anything yet attempted. The number of ocean-going vessels will increase beyond the limits of imagination. Ships will be propelled solely by electricity; indeed, steam, as a motive power, whether on sea or land, will be almost obsolete. Fares will be merely nominal, and people who do not travel will be the exception. Of course the result of all this will be to break the barriers of nationality; in fact, it will be difficult to discriminate national origin, at any rate among English-speaking people, a century hence. All this necessarily must promote a cordial feeling of kinship among nations, and it will, therefore, be readily understood with what aversion war will be regarded.

The dream of Isaac Pitman will be so near realisation that complete phonetic spelling will be considered on all sides only a matter of time. This will conduce marvellously to the spread of the English language, and the people of the twentieth century will agree

as its finally becoming the universal tongue.

Slum life in cities will be a thing of the past, as also will that curious paradox of modern life—involuntary poverty. Individual fortunes will not be so large as now. But the aggregate amount of wealth will be much greater—a statement which will be readily believed if the reader bears in mind that every pair of hands, now compulsorily idle, means so much wealth lost to the community, besides which further labour-saving appliances will enormously facilitate production. There will of course be a much greater diffusion of wealth; in fact, everyone will possess exactly what his or her labour produces. Greed is an abnormal quality—due to social conditions based on a false foundation. Men are never greedy of water, or sunshine, or air, because they are always assured of enough of these gifts of the Creator. In the twentieth century men will always be assured of abundance of all they need, and hence they will “take no thought for the morrow,” knowing well that the morrow will provide for itself. With the fear of want selfishness will undoubtedly disappear, and people will work for the love of work, not for mere personal gain.

Trades organizations, conciliation boards, old age pensions, life insurance, and mortgages will be no more, because the need for them will have passed away. There will be no laws for the recovery of debts. People will pay cash for everything, and books will be kept for statistical purposes only. The State will be the sole banker, and paper will be legal tender. All laws of entail and primogeniture will belong to the wretched past. Men will not think of accumulating wealth for their children since, obviously, there will be no need to do so in a state of society where everyone is able to provide himself with abundance. There will be palatial public schools, but a great many people will prefer private tuition, some even engaging teachers in their own homes. On account of the growth of technical instruction, the schools of the next century will closely resemble factories and workshops.

Under such happy social conditions, it is no matter for surprise that people should soon realise the utter folly of war. Trade, travel, and education will be the great peace agencies. Already they are at work, but men thwart them with so-called protective tariffs and jealousies.

Suicide will be very rare, because of the absence of that incessant strain and worry which are such marked features of modern life. Crimes against property are chiefly modern. They will be unknown in the twentieth century, and other crimes will be very rare, and will generally be treated as diseases. The span of human life will be much longer, and mortality will be little greater among infants than among adults. Marriage will be early, and unmarried people, except in the cases of people of scientific pursuits or of religious orders, will be so rare as to excite remark. Atheism, scepticism, pessimism, and many allied vagaries will be unknown, and historians will regard them as the eccentricities of unnational and unjust social conditions. There will be no patent laws; indeed, inventors will feel an intense pride in making gifts of their contrivances to their fellowmen. Honour and glory will be the reward alike of the inventor, the man of science, the sculptor, the painter, and the athlete.

The microbe of cancer will be known, as also will that of baldness, and both will be mastered by the men of the twentieth century. The plague, tuberculosis, typhoid, diphtheria, and similar diseases will be so rare that their occurrence will be conclusive proof of insanitary surroundings, and the civic authorities will at once proceed to vigorously eradicate the cause.

Music and painting will be indispensable accomplishments for women, and sculpture will rival Athenian excellence. In the few cases of insanity or deformity the friends of the afflicted will gladly provide for them, and there will therefore be no public institutions for their detention. Evolution will have become a settled principle with certain modifications, chief of which will be

that the struggle for existence will not be held to apply to human life.

Railways, telegraph lines, telephones, and postal services will be free, as are our own public libraries, museums and art galleries. One grand result of all this will necessarily be to do away with the congestion of people in towns; indeed, in the twentieth century it will be very difficult to tell where the town ends and the country begins. The residents of towns will thus be able to get more of the pure air and enjoyment of country life, while country folk will know no more of that monotonous existence to which so many are condemned nowadays. My readers naturally ask, where will the public revenue come from? I answer from the unearned increment of land. Land will be common property, and our descendants will be amazed when they learn that once upon a time there were such institutions as human slavery and private property in land. This change will be affected by gradually remitting all taxes, and taking the revenue by a land tax, so-called from the rent of land. Rent will be found to be ample, especially as there will be no costly Customs taxation, and the functions of Government will have become so enormously simplified. Let the reader imagine how simplified Government must necessarily be when the State is sole land-owner if there are no laws of entail or primogeniture, no Custom House, no laws to recover debt, no State Insurance, or old age pensions, and he will easily see how much cheaper it will be. Aerial navigation will be practicable, but not for the carriage of goods. The functions of local bodies will be greatly extended. The municipalities will own trams, water supplies, lighting, hotels, etc., and the members thereof will be elected by universal suffrage.

There will also be great political changes. Members of Parliament will be elected by the Hare system. There will be no electorates as we now have them, and no polling day. Each voter will receive a voting form through the post, and he or she will fill this and return it within a prescribed time. Ministers will be elected by Parliament, and will be

eligible for election to the Imperial Parliament by the people. Women will be eligible for seats in Parliament, and for all the learned professions. Second Chambers will still exist, but they will consist only of the heads of all the learned professions. Their speeches will be distributed free in order to add to the common store of knowledge. There will be no aristocracy except an aristocracy of merit. The most conspicuous buildings will be cathedrals, churches, libraries, museums, schools, and universities.

Great also will be the changes in the world of science. There will be no idea of force, as apart from matter. The "conservation of energy" will be considered an exploded fallacy. Our ideas of what we call matter too, will be radically changed; indeed, the term will be deemed to include a great deal more than is now comprehended by it. For instance the diameter of the earth will be found to be in reality much greater than is now supposed; in fact, its revolution round the sun will be found to be analagous to the motion of a rapidly-spinning top along a piece of cardboard held stiffly against it. The Newtonian doctrine of gravitation will be upset. The student of the twentieth century will be taught not that matter is constantly tending to motion, but that it is constantly tending to equalisation, which is never obtained, motion, as we call it, being the result. Heat, light, electricity, and magnetism will be regarded as different manifestations of the same principle of excitation, caused by the reciprocal action of matter on matter in its main effort to reach a state of equalisation. On this principle will be explained many vexing problems physical and psychological, including the cause of earthquakes, hardness and solidity, mesmerism, spiritualism, etc. Scientific men will not wonder then what becomes of that vast portion of the sun's light and heat which the earth does not intercept, since it will be found that the heat and light we receive are consequent on the different states of excitation as between sun and earth, and the earth's motion on its own axis will be explained by the same cause. It will be found

that when equalisation is nearly established as between the sun and that portion of the earth which is turned towards it, the influence of the sun is powerfully exerted on that part which is averted, the result being constant evolution.* It will be found also that what seems repulsion of the magnet is really always attraction, or excitation; the same idea will supersede that of the conduction and induction of electricity.

Such are a few of the many changes which will distinguish the century on which we are soon to enter. My readers may be sceptical, but they will live to see some of the changes themselves. Civilization has been pre-ordained from the beginning as being man's proper state in this world, and what I have endeavoured to depict is but the logical outcome of powerful if soluble forces now at work.

To what extent will New Zealand be affected by all these changes? It is of course difficult to say precisely. But we may rest assured that our country will not be a laggard in the race of progress. The changes I have endeavoured to outline will affect the whole world more or less, and there is no reason to doubt that New Zealand will maintain that reputation for social advancement which has already given her a high place among nations. Of course perfect freedom of trade will solve the question of Federation—both Imperial and Colonial. Her vast resources will enable

*See "Some Unrecognised Laws of Nature" by Singer and Behrens.—John Murray, London.

her to carry an immense population; in fact, at the end of the twentieth century she should contain fully 10,000,000 of people. An express electric train will run to and fro twice daily from Auckland to Wellington. A splendid electric ferry service will convey passengers across Cook Straits, and the "iron horse" will speed on from Picton to the Bluff. The goldmining, gum and timber industries will have practically ceased. What little gold will be found in New Zealand a hundred years hence will come from deep-level quartz veins. Frozen meat, wool, butter, grain, cereals of all sorts, and iron will be the chief items of export. Where are now primitive mountain fastnesses will be picturesque roads and splendid hotels in consequence of the immense tourist traffic. The Maori race will not have become extinct, but will be becoming absorbed in the white population. The colony will include the Cook Islands.

The reader who does not believe I have exaggerated the potentialities of the coming century—or should I say the potentialities of human nature?—will agree that New Zealand, and indeed the world generally, will be much better as a place of abode a hundred years hence. But I would point out in conclusion that our highest aim should be to leave our country and the world better for our having lived. In this will be found the highest degree of human happiness now attainable, and by this means alone can we make the lot of those who are to come after us better and brighter than our own.





Maori to Pakeha

for Peter

You there
I mean you
Beak-nosed hairy limbed narrow-footed
Pakeha you
Milton directing your head
Donne pumping your heart
You singing
Some old English folksong
Meanwhile trampling Persia
Or is it India, underfoot
With such care less feet.

Where do you think you're going?
You must be colour blind.
Can't you see you've strayed
Into another colour zone?
This is brown country, man
Brown on the inside
As well as the outside
Brown through and through
Even the music is brown
Like us.

So what are you after?
All the land has long gone
With the tupuna.
Nothing left to colonise now
Except the people.
Do you plan to play
Antony to my Cleopatra?
I mean
Who do you think you are?

Tell me all I want to know
Before you crook that finger again
Smile me another crooked smile.
Give your mihi tonight
Korero mai
Till dawn breaks with a waiata
Meanwhile holding me gently
Firmly captive
Here, in the tight curve
Of your alien arm
My dear

Oh my dear.

– J. C. Sturm, from *Dedications*

J.C. STURM was a short story writer and poet. Her first poem was published in 1947, making her one of the first Māori women to have work appear in print (Sturm, 1996). By combining experiences of loss and love, youth and age, and Māori and Pākehā, Sturm's verse conveys a sense of tranquility through acceptance of the dualities inherent in her own eventful life (New Zealand Book Council, n.d.). Sturm herself commented that 'whether my work has any [overt] Māori content or not we're talking about a way of looking, a way of feeling and a way of being' (ibid.).

New Zealanders' thoughts on Foresight

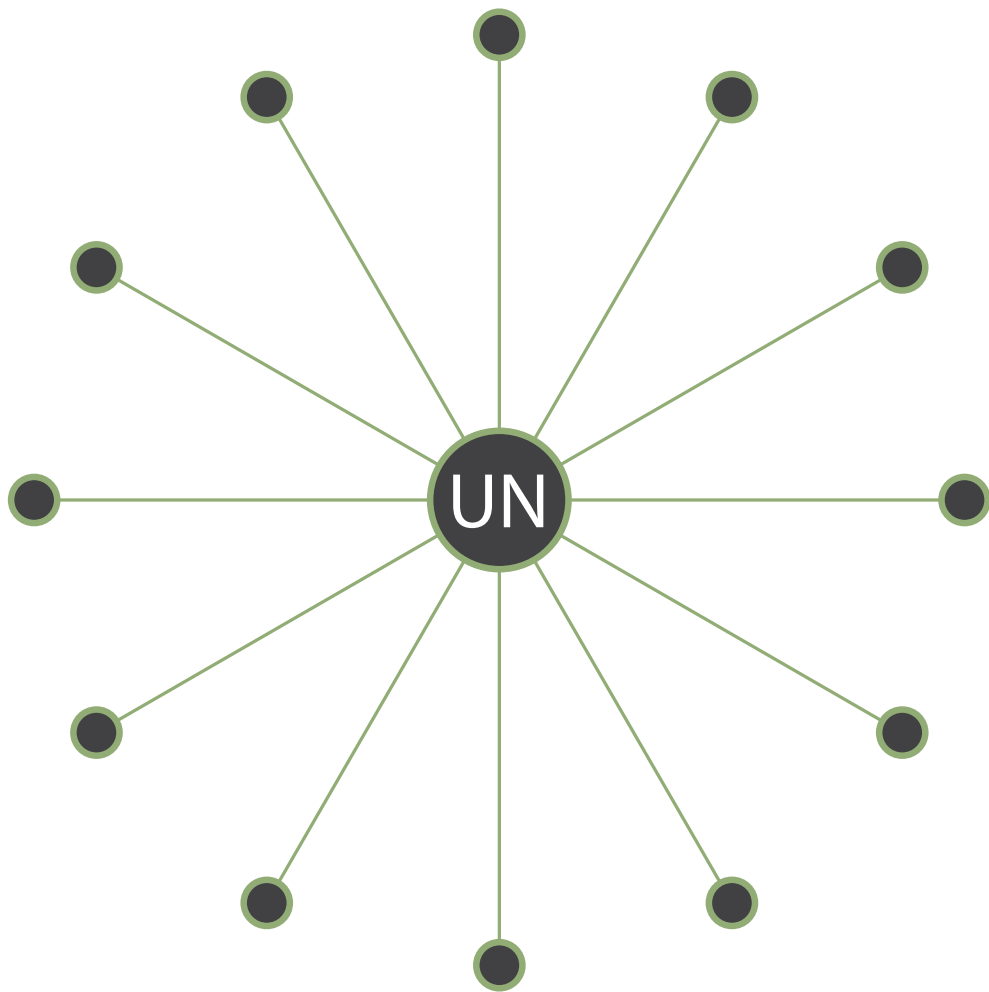
n.d.	Proverbs	<p>Kia hora te marino, Kia papa pounamu te moana, Kia tere te kārohirohi May the calm be widespread, May the sea glisten like the greenstone, And may the shimmer of summer dance across thy pathway.</p> <p>Titiro whakamuri hei ārahi i ngā uaratanga kei te kimihia. Look to the past for guidance and seek out what is needed.</p>
1840	Carpenter and joiner Samuel Duncan Parnell Often credited with the establishment of the eight-hour day in New Zealand (Orsman & Moore, 1988: 514)	'There are twenty-four hours per day given us; eight of these should be for work, eight for sleep, and the remaining eight for recreation and in which for men to do what little things they want for themselves.'
1852	Lawyer William Swainson English lawyer who helped to set up the legal system of New Zealand (Orsman & Moore, 1988: 618)	'The tone of the Press in our colonies is sometimes more noisy than effective.'
1928	American playwright Eugene O'Neill <i>Strange Interlude</i> (Knowles, 1997: 554)	'The only living life is in the past and future ... the present is an interlude ... strange interlude in which we call on past and future to bear witness we are living.'
1962	Scientist Ernest Rutherford (Orsman & Moore, 1988: 555)	'We haven't the money, so we've got to think.'
1966	Researcher Claudia Bell (McGill, 2004: 29)	'New Zealand is about the same age as photography.'
1991	Broadcaster Gordon Dryden (McGill, 2004: 80)	'For years it seems we were mesmerised by butterfat and fat lambs. Now we seem to be mesmerised by economic theory.'
1992	Bungy jumper A.J. Hackett (McGill, 2004: 114)	'I try a leap on the first of every month just to clear my head.'
2009	Scientist Sir Paul Callaghan 2011 New Zealander of the Year (Callaghan, 2009: 23)	'The one lesson that emerges is the need to keep trying. No miracles, no perfection, no millennium, no apocalypse. We must cultivate a sceptical faith, avoid dogma, listen and watch well, try to clarify and define ends, the better to choose means.'
2010	Inventor Ray Avery 2010 New Zealander of the Year (Avery, 2010: 216)	'A good definition of applied science is taking everything that is known currently and applying it to a new paradigm. Another useful definition was given in the TV show <i>Blackadder</i> when one character had written a book and another accused him of plagiarism because he had just rearranged words that were already in the dictionary. Science is the same, a matter of rearranging fundamental bits of information.'
n.d.	Advertiser Old-timer on the Mainland Cheese TV advertisement (McGill, 2004: 54)	'These things take time.'

2. Foresight

Once an individual, business, city or country has a clear picture of what it wants to achieve, it must consider what is happening and may happen in the future. While vision is about looking inwards, strategic foresight is about looking outwards; in terms of how we have arrived at this place (hindsight), what is happening around us now (insight) and where we might be going (foresight).

This section puts forward some conceptual tools and provides a diverse mix of issues and some wild cards that set a context for exploring New Zealand's future. It concludes with a short excerpt from James Duncan, the past Chairman of the Commission for the Future (1976–1982).

About the world ...



World governance

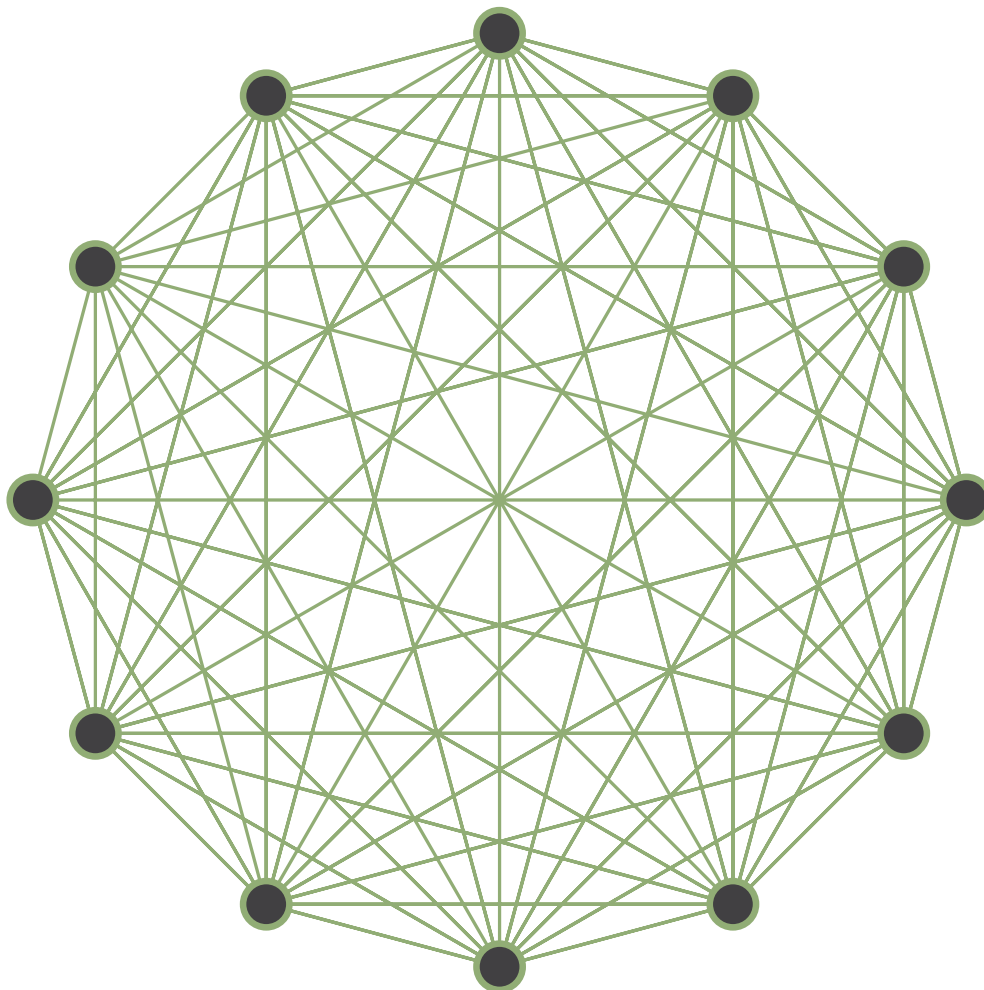


In his presentation, Chief NASA Scientist Dennis Bushnell will identify seven 'simultaneous existential societal issues', any one of which may change society as we know it. Perhaps the biggest question for society is: how do we work together to sustain the planet and all that live on it?

The tendency of nation states to jealously guard their sovereignty has largely prevented the effective application of centralised global governance, such as envisaged with the establishment of the United Nations (UN) as illustrated on the left. Instead, responses to international issues – terrorism and security issues, environmental degradation and global warming, economic instability and poverty – have tended to be addressed at a regional or bilateral level.

In a period where collective problems facing the global community have become increasingly urgent, a networked model of inter-state relationships through professional organisations, government, and non-government organisations, may increasingly emerge to address what is an evolving constellation of complex issues – see below.

However if world governance is the big question, who is thinking of the big answer?



How the world sees New Zealand



How we are seen from the outside looking in ...



It is very important to understand how we are seen internationally. Interestingly, New Zealand Trade and Enterprise (NZTE), the New Zealand government's national economic development agency, contracted research into the perceptions of New Zealand in various overseas markets. The overwhelming finding was that New Zealand businesses were: 'High in human values but low in human acumen' (NZTE, n.d.).

While we may have:

'openness and directness' | 'refreshing honesty' | 'resourcefulness, creativity and flexibility'

We also unfortunately are perceived as having:

'low pro-activity' | 'lack of preparation' | 'an overly-relaxed attitude'

While human values attract business to some extent and work in our favour for the most part, there needs to be a definite brush up on our business methods and protocols in order to be seen as savvy and sophisticated business partners. Particularly in the important markets of China and Japan, while there is an 'emotional predisposition' to conduct business with New Zealand, we are also seen as 'lacking in hunger', making us a less than ideal business partner in the long term (Gibson, 2008).

Here are two examples that also provide useful insights:

Example One, 2010

Joel Kotkin, author of *The Next Hundred Million, America in 2050*, explores who will be America's allies in 2050 and concludes (p. 239):

In the emerging world of the 21st century, who will be our closest natural allies? Clearly America's character and demographic makeup necessitate some rethinking. The United States is no longer an offshoot of Europe and will be even less of one in 2050. Our historic tie with Britain may remain, but Canada, Australia, and New Zealand are likely to be the country's most reliable partners.

Like the United States, these countries are 'countries of aspiration'. They are blessed with ample land and natural resources and remain, along with the United States, the preferred location for immigrants, particularly educated ones, and the places where they are most likely to succeed.

Example Two, 2005

UK-based Canadian author Gwynne Dyer, in his book *Future: Tense: The Coming World Order* (p. 247), writes:

New Zealand refused to send its troops to join the United States, Britain, and Australia in invading Iraq because Helen Clark's government understood that what we do now affects the future. The day will come when the United States is no longer the superpower bestriding the world, but New Zealand's geography will always be the same as it is now, so it needs a global system that will protect it from harm even when China is the greatest power: a system based on law and multilateral consensus.



**Where
New Zealand
is today ...**

Where are we today?



New Zealand's economy is affected by both global and local events

- Coming out of the Global Financial Crisis, it is expected that homeowners will be 'keeping houses off the market, not re-building and trying to pay off mortgages faster, saving more, and spending less' (Bollard, 2011).
- The Treasury predicts that the combined effects of the Christchurch earthquakes in September 2010 and February 2011 will slow economic growth by 1.5 percentage points, to 2 percent in 2011 (McBeth, 2011). The Treasury's preliminary estimate of the cost of the damage from the two earthquakes is \$15 billion (Fallow, 2011). However, there is the potential for a construction boom. While in the short term the quakes will have a negative impact on economic growth, it is believed that the ensuing reconstruction (when it begins in earnest in 2012) will bring about improvement (NZ Herald, 2011). The OCR was cut to 2.5 percent on 11 March 2011 to mitigate the impact of the Christchurch earthquake as well as stimulate the economy (Weir & Rutherford, 2011) – a risky move given the magnitude of construction expected to take place over the next years and the fact that global inflation is rising.
- The Rugby World Cup 2011 (Bollard, 2011) and the FIFA U-20 World Cup 2015 (Carter, 2011) – both to be hosted in New Zealand – are expected to contribute positively to the economy through the tourism benefits to New Zealand.
- The New Zealand dollar, which had already slid 5.2 percent against the US dollar and had reached an 18-year low against the Australian currency following the Christchurch quakes (Zachariahs, 2011), is anticipated to decline further as a result of risk aversion following the earthquake and tsunami which struck Japan on 11 March 2011 (Krupp, 2011). The European debt crisis is also likely to continue to influence currency markets, as EU leaders tighten economic cooperation and expand the 'rescue fund' (ibid.).
- Events on the other side of Asia and in North Africa have seen surges in oil prices; continued unrest in the Middle East has raised concerns over the tightening of world supplies (AAP, 2011[a]). On the other hand, there is speculation that the devastation caused by the Japanese earthquake and tsunami will take pressure off oil-supply issues temporarily as Japan (the world's third-largest oil consumer) rebuilds its economy (AAP, 2011b).
- Lacking in significant domestic sources of fossil energy, Japan is the third-largest importer of crude oil in the world and the largest importer of coal and liquefied natural gas (LNG) (Energy Information Administration, 2011). '[It] also relies heavily on nuclear power, which generates about one-third of the country's electricity' (Wald, 2011a). The quake caused the nation to lose a third of its oil-processing capabilities (Williams, 2011) and crippled a fifth of its total nuclear generating capacity (Wald, 2011b).

Points to ponder ...

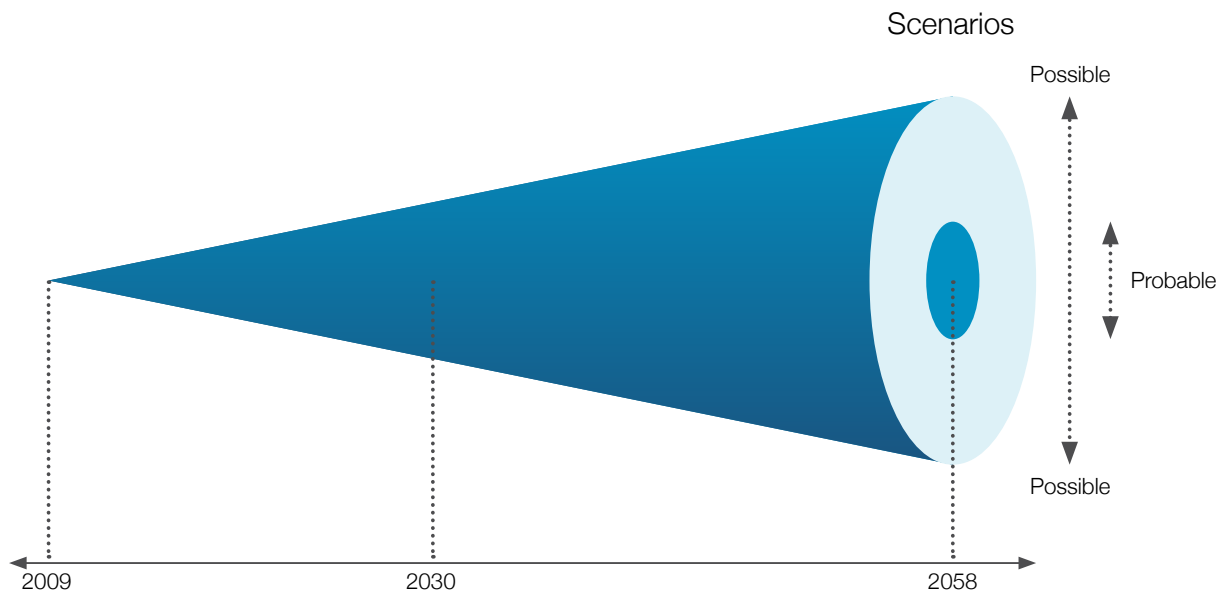
- Filling in the 'energy gap' in Japan
- The impact if Japan decides to back away from nuclear energy
- Global reaction to the use of nuclear energy (following the Japanese nuclear crisis)
- Implications for the demand for New Zealand coal



Future Studies

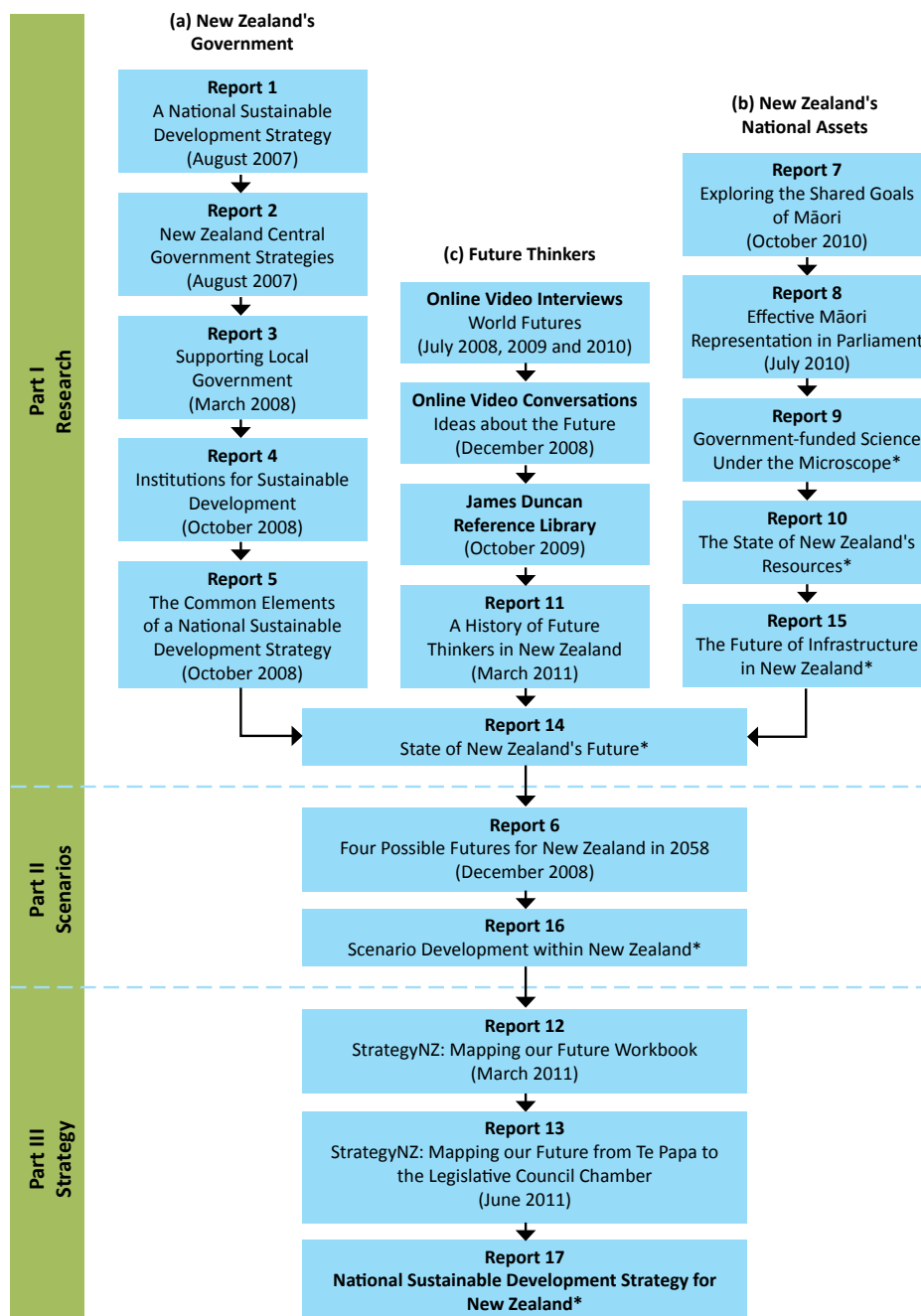
Further information can be found in *Report 6: Four Possible Futures* by the Sustainable Future Institute, 2008 (p. 7).

This concept offers the idea that as we look into the future, the ratio of what is possible to what is probable increases dramatically. We know what is probable tomorrow, and mostly know what is possible. However, in 50 years, though we may be able to predict what is probable, the number of possible scenarios has greatly increased.



Putting future studies into practice

The main work programme of the Institute is *Project 2058*. The strategic aim of this project is to promote integrated long-term thinking, leadership and capacity-building so that New Zealand can effectively seek and create opportunities and explore and manage risks over the next 50 years. It is hoped that *Project 2058* will help develop dialogue among government ministers, policy analysts and members of the public about alternative strategies for the future of New Zealand. The following table outlines the *Project 2058* methodology. It is divided into three work programmes – research, scenarios and strategy – that progress toward the intended outcome, a National Sustainable Development Strategy for New Zealand.



* Date of publication to be confirmed



The Blind Men and the Matter of the Elephant

Donella Meadows and Diana Wright in *Thinking in Systems* (p. 7), put forward the following ancient Sufi story.

Beyond Ghor, there was a city. All its inhabitants were blind. A king with his entourage arrived nearby; he brought his army and camped in the desert. He had a mighty elephant, which he used to increase the people's awe.

The populace became anxious to see the elephant, and some sightless from among this blind community ran like fools to find it. As they did not even know the form or shape of the elephant, they groped sightlessly, gathering information by touching some part of it.

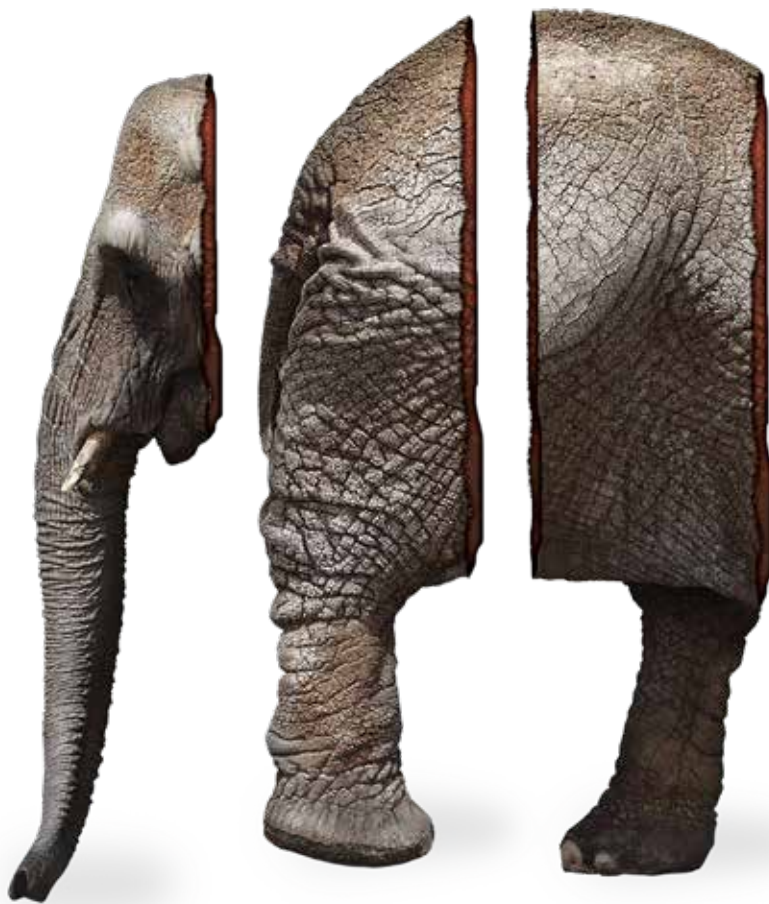
Each thought that he knew something, because he could feel a part. ... The man whose hand had reached an ear ... said: 'It is a large, rough thing, wide and broad, like a rug.' And the one who had felt the trunk said: 'I have the real facts about it. It is like a straight and hollow pipe, awful and destructive.' The one who had felt its feet and legs said: 'It is mighty and firm, like a pillar.'

Each had felt one part out of many. Each had perceived it wrongly.

This concept teaches us to approach problems by looking at details as well as the issue as a whole. When we are exercising foresight we must consider how all issues we are projecting about relate to all other issues. Planning and foresight will fail if we don't consider how issues interact.



‘This ancient Sufi story was told to teach a simple lesson but one that we often ignore: The behaviour of a system cannot be known just by knowing the elements of which the system is made.’



'The choices about spending and revenue we make now will determine not only the services currently provided and how they are paid for, but will also shape New Zealand's future.'

John Whitehead, Secretary to the Treasury
(Treasury, 2009: 7)

To the right we have selected and reported on six years chosen to reflect different time periods in New Zealand's recent history. Each time period reflects the percentage of expenditure or receipts for that year. The percentages reflect the category 'type' listed below. On the left column of pie charts, 'Social Security, Welfare Pension and GSF' starts at 12 o'clock, followed by the 'Health' etc in a clockwise direction. Furthermore, on the right column of pie charts, 'Direct Taxation' starts at 12 o'clock, followed by the 'Indirect Taxation' etc in a clockwise direction.

Key observations are:

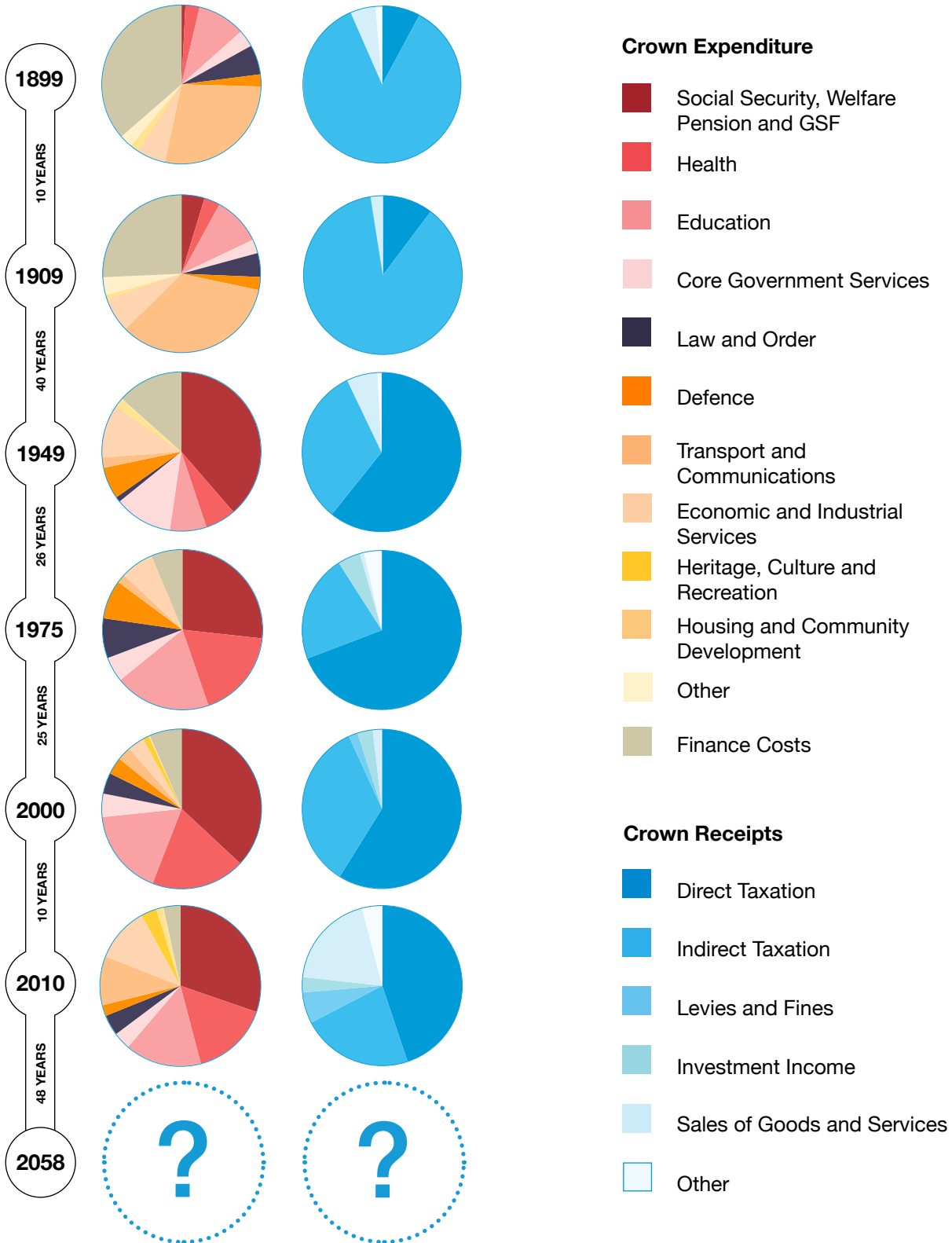
1. Spending patterns have changed significantly, moving from 'Financial Costs' and 'Transport and Communications' to 'Social Welfare', 'Health' and 'Education'.
2. In the early 1900s 'Transport and Communications' was a key expenditure item. Over time this decreased, but we are now seeing more expenditure in this area and in 'Economic and Industrial Services', with a slight decrease in the three areas 'Social Welfare', 'Health' and 'Education'.
3. Prior to 1949 'Social Security, Welfare Pension and GSF', 'Health' and 'Education' combined was less than a fifth of total crown expenditure.
4. From 1975 'Social Security, Welfare Pension and GSF', 'Health' and 'Education' combined have accounted for more than half of Crown expenditure.
5. Between 1909 and 1949 'Social Security, Welfare Pension and GSF' increased as a percentage of Crown expenditure by over 700%.
6. A move from 'Direct Taxation' to other forms of cash receipts.

How public funds have been spent and generated

Using *New Zealand Official Yearbooks* to understand the past and explore the future.

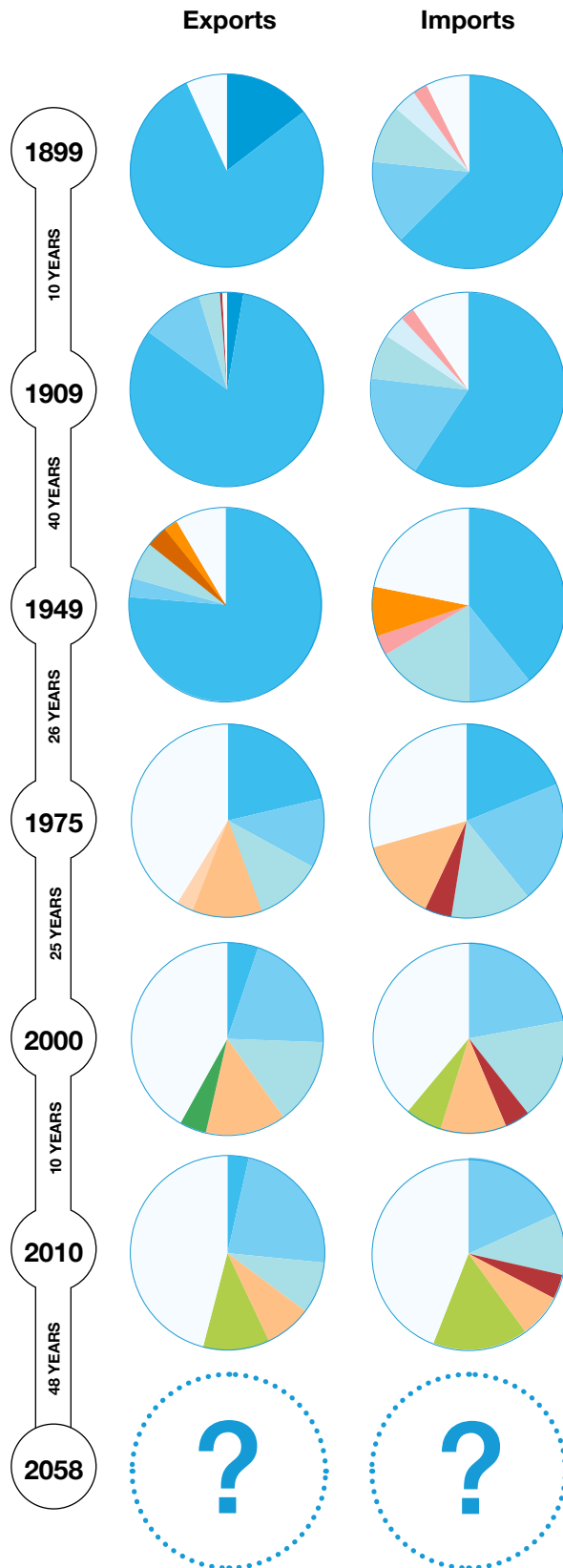


Crown Expenditure Crown Receipts



Exports and imports by country

Using *New Zealand Official Yearbooks* to understand the past and explore the future.



Below we have selected and reported on six years chosen to reflect different time periods in New Zealand's recent history. Each time period reflects both the percentage of exports and imports by product for that year. The percentages reflect the category 'type' listed below. 'British Colony and Possessions' starts at 12 o'clock, followed by the 'United Kingdom' etc in a clockwise direction.

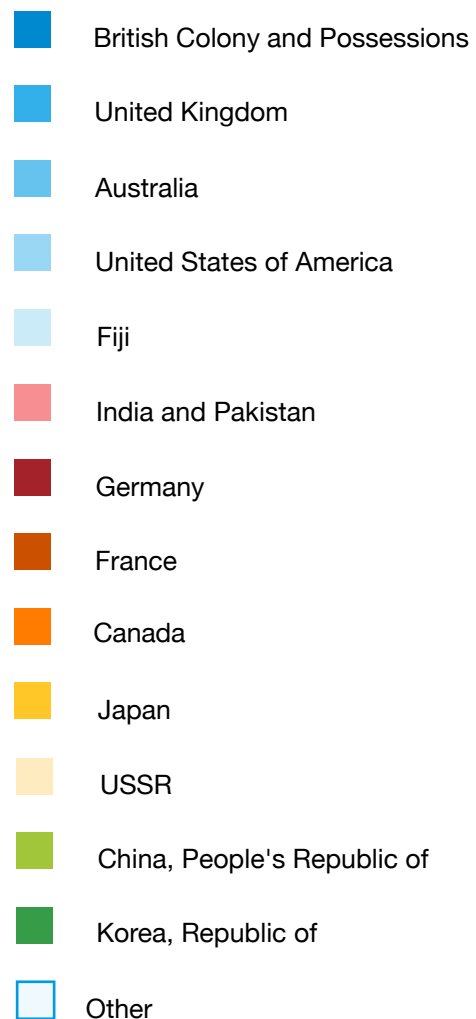
Key observations – Exports:

1. New Zealand's initial high dependence on exports to the UK declined significantly from 1975 onwards.
2. By 1975, three other countries also dominated our export trade: Australia, Japan and the US.
3. Today, Australia is our largest trading partner, taking about 23% of our exports; China is our second-largest trading partner, followed by the US and Japan. Exports to the UK are now similar in size to exports to the Republic of Korea.

Key observations – Imports:

1. Over time, we have moved from importing most of our goods and services from the UK and the US to importing from Australia and China. Today, over 30% of our imports come from Australia and China.

Country



Exports and imports by product

Using *New Zealand Official Yearbooks* to understand the past and explore the future.

* Classification based on Standard International Trade Classification (SITC), an output classification developed by the United Nations.



Below we have selected and reported on six years chosen to reflect different time periods in New Zealand's recent history. Each time period reflects both the percentage of exports and imports by product for that year. The percentages reflect the category 'type' listed below. 'Food and live animals' starts at 12 o'clock, followed by 'Beverages and tobacco' etc in a clockwise direction.

Key observations – Exports:

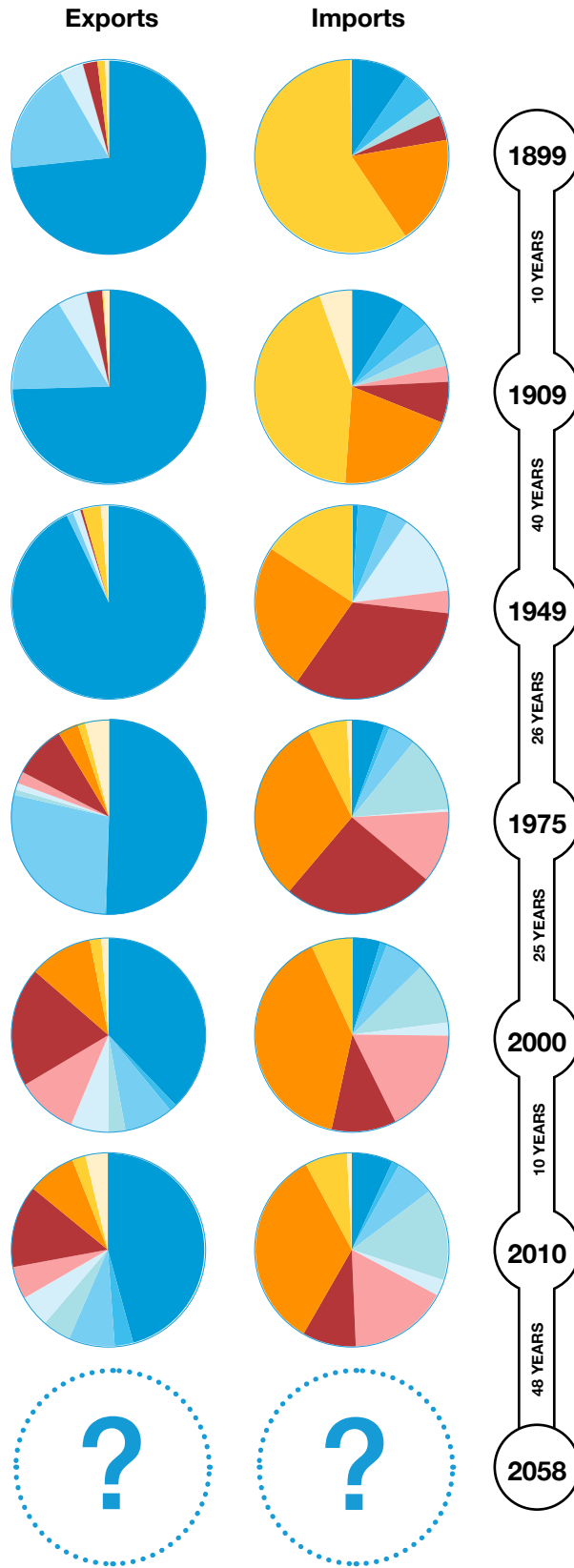
1. New Zealand has always been dependent on the export of 'Food and live animals'. This peaked in the middle of the 20th century; for example, in 1947, 93% of our export revenue came from 'Food and live animals'.
2. Both 'Manufactured goods' and 'Machinery and transport equipment' increased in size in recent years.

Key observations – Imports:

1. In the earlier part of the 20th century, 'Miscellaneous manufactured articles' followed by 'Machinery and transportation equipment' were the most significant categories of imports.
2. In later years, we can see 'Chemicals and related products' becoming increasingly important.
3. In the middle of the 20th century, 'Manufactured goods' peaked; for example, in 1947 'Manufactured goods' made up a third of New Zealand's imports.

Types of Product

- Food and live animals
- Beverages and tobacco
- Crude materials (inedible, excludes fuels)
- Mineral fuels (lubricants and related materials)
- Animal and vegetable oils (fats and waxes)
- Chemicals and related products
- Manufactured goods (classified by material)
- Machinery and transportation equipment
- Miscellaneous manufactured articles
- Other





The New Zealand Coat of Arms

Text adapted from Hartemink, 2010 & Ministry for Culture and Heritage, 2010.

New Zealand's Coat of Arms, our first Strategy Map?

Momentum gathered in 1906 for New Zealand to adopt our own Coat of Arms, rather than continuing to use the British one which we had been using since 1840. Having our own Arms seemed especially symbolic as we moved to become a Dominion in 1907. Initial plans to develop our Coat of Arms were thwarted by a fire which destroyed Parliament in 1907, but the competition for the design was successfully relaunched the following year. A series of iconic symbols were incorporated into competition submissions, illustrating the important nature of the Coat of Arms as an emblem for New Zealand. These included sheep, cows, moa, stars, ships, British soldiers and Māori warriors.

Three entries were sent to Britain to be judged, and the winning entry, submitted by James McDonald, became official in 1911 and is now referred to as the 1911 Arms. During the 1940s it was found that multiple versions of the Coat of Arms were in use, and a committee was established to oversee a standardisation of the image. The slightly changed image was approved by Queen Elizabeth II in 1956, and remains the Coat of Arms for New Zealand today in 2011. The shield uses symbols to represent the Southern Cross, New Zealand's farming, agricultural and mining industries, and the significance of our sea-trade. The shield is flanked by a Māori chief with a taiaha and a European woman holding the New Zealand ensign; St Edward's crown floats above, representing our current Queen's coronation. The woman is believed by some to be Zealandia, a personification of New Zealand and daughter of the British equivalent, Britannia.

Could this be considered our first attempt at a strategy map?

Whilst a similar strategy is not required today, the path to our Coat of Arms has messages which continue to resonate. The use of Arms is emblematic of the government's authority and reserved for government use only. Privileged usage



includes documents such as passports, and parliamentary acts, and approval must be gained to reprint the image. These characteristics connect the initial creation of the Arms to a wider vision for New Zealand. A vision for a country which is young and independent yet rooted in an older tradition. A country with a unique personality and a distinctly New Zealand identity, both of which are reflected in the choices made and the trust placed in the authority of the government. It also shows that we have attempted to reach consensus before with regard to representation of New Zealand, and that we can do it again: New Zealanders are good at having this identity represented on a global stage.

Most significantly, we see what can be achieved for a country when a group of people put their heads together and seek to help positively shape the direction for New Zealand, and envision New Zealand as it moves into the future. Like a strategy map, this evidences the staying power and significance that such a tool can have, and the importance of working to create these tools.

Exploring the shared goals of Māori

Exploring the challenges and opportunities that the Māori population of New Zealand is likely to face in the future is an important task, not only because of the implications for Māori, but because the futures of Māori and non-Māori New Zealanders are intrinsically linked, and will become increasingly so in the future. In Report 7: *Exploring the Shared Goals of Māori: Working towards a National Sustainable Development Strategy*, the Institute identified nine key challenges for Māori:





Can you own the haka?

Exploring the emerging field of cultural intellectual property using: Matt Sumpter's article *Can you own the haka?*, Patricia Burns' book *Te Rauparaha: A new perspective* and an extract from *An Encyclopedia of New Zealand*.

Between 1998 and 2006, the mandated authority for Ngāti Toa, Te Runānga O Toa Rangatira Inc., fought to trademark the full words of the haka *Ka Mate*. Matt Sumpter, from Chapman Tripp, noted in an article headed 'Can you own the haka?' that the above mentioned application failed because the New Zealand Intellectual Property Office (IPONZ) held that the words were 'in the public domain and could not be monopolised as no one particular organisation could be identified as the trade source of goods or services promoted in conjunction with this haka' (Chapman Tripp, 2010). To be successful they needed to be able to prove ownership of the brand and to distinguish that brand from the public domain.

In 2010 the group tried again by designing a logo with the words 'Ka Mate', and as a result were successful in trademarking the *Ka Mate* haka. As Sumpter insightfully noted, this decision can be interpreted in two ways. On the one hand, the haka is part of New Zealand's cultural identity and most New Zealanders identify with it regardless of their heritage. Adopting this view makes it difficult to accept that it is now subject to law and policing. On the other hand, it should be celebrated that we are moving to an emerging system which will legally protect our cultural heritage.

There are groups concerned about the IPONZ decision; for example, IPONZ has given the New Zealand Rugby Union six months to decide whether it will oppose the application. The NZRU has used the haka since 1905. However, in October 2010, NZRU lawyers wrote to IPONZ announcing that the Union was 'very close to finalising an agreement' with Ngāti Toa.

This example clearly shows the growing relationship between Māori and the Crown. What are your thoughts?

Sumpter's article goes on to raise a number of interesting questions, such as whether this decision puts at risk New Zealand's ability to build a vibrant public domain where cultural experience and expression is built by New Zealanders for New Zealanders, or whether this will lead to better protection of our cultural heritage and to what extent we will now need a cultural property register.

As we go to print, on the 17th of March 2011 Ngāti Toa and the NZRU signed an agreement allowing the All Blacks to continue to use the haka *Ka Mate*, so long as they are respectful and maintain the mana and integrity of the performance (Ngāti Toa, 2011).

Further, in publishing this article, we remain unsure whether we can actually use the words to *Ka Mate* due to copyright issues.

The birth of the haka makes an interesting read

Patricia Burns, in her biography of Te Rauparaha, firstly outlines the necessity for the chief to hide from his enemies and then the cultural inappropriateness of hiding in a kumara pit beneath the genital organs of a woman standing above. Burns concludes, 'the story is likely in the sense that it was entirely typical of Te Rauparaha: first for the practicality which preferred to be undignified, even comically undignified and unchiefly, than risk certain death; then for the wit, ribald humour and confidence that allowed him to make a public triumph of the indignity'. Burns cites Sir John Grace:

As the chiefs of the pursuing party approached Rotoaira they recited incantations to enable them to locate the whereabouts of Te Rauparaha. Ascertaining that he was at Motuopuhi, they chanted further incantations to prevent him from escaping southward, and as Te Rauparaha sat crouched in the pit he began to feel the effects of the spells being cast on him.

Now, in addition to assisting in the concealment of the Ngāti Toa chief, the main reason why Te Rangikoaewa was ordered to sit over the pit was because of the neutralising effect that she as a woman had on incantations. The genital organs were supposed to have this strange power and as the incantations reached Te Rauparaha he felt their effects being neutralised by the chieftainess sitting above him. He imagined them being whirled round and round and being absorbed, and to give vent to his feelings he exclaimed,

"Aha ha!

Kikiki kakaka kauana!

Kei waniwania taku tara.

Kei tarawahia, kei te rua i te kerokero!"

After a while he realised that the protecting powers of the chieftainess could be destroyed if certain advances were made by her husband and that in order to save himself he would have to be watchful and see that his protector was not disturbed. Becoming concerned he whispered,

"He pounga rahui te uira ka rarapa;

Ketekete kauana to peru kairiri.

Mau au e koro e –

Hi! Ha!

Ka wehi au ka matakana.

Ko wai te tangata kia rere ure?

Tirohanga nga rua rererera

Nga rua kuri kakanui i raro!"

When the pursuers arrived they enquired of Te Wharerangi whether he had seen Te Rauparaha and were informed that he had fled in the direction of the Rangipo desert. For a moment they did not believe him, but later hurried off in pursuit. When all was clear Te Wharerangi asked his wife to let Te Rauparaha out.

During the time Tauteka was talking to Te Wharerangi, Te Rauparaha muttered under his breath, “Aha ha! Ka mate, ka mate!” (Aha ha! I die, I die!), but when the Rotoaira chief indicated that the man they sought had gone to Rangipo he murmured, “Ka ora, ka ora!” (I live, I live!). However, when Tauteka doubted Te Wharerangi he gloomily muttered, “Ka mate, ka mate!” (I die, I die!).

Then when his pursuers were convinced he was not in Te Wharerangi’s pa but had made for Taranaki he exclaimed, “Ka ora, ka ora! Tenei te tangata, puhuruhuru nana nei i tiki mai whakawhiti te ra!” (I live, I live! For this is the hairy man who has fetched the sun and caused it to shine again!). As he took his first two steps out of the pit he said, “Hupane, kaupane!” and as he stood clear he shouted, “Whiti te ra!” (The sun shines!).

Going on to the courtyard of Te Wharerangi and before Te Rangikoaia and the assembled people, Te Rauparaha performed his famous haka.

“Aha ha!
 Kikiki kakaka kauana!
 Kei waniwania taku tara.
 Kei tarawahia, kei te rua i te kerokero!
 He pounga rahui te uira ka rarapa;
 Ketekete kau ana to peru kairiri
 Mau au e koro e –
 Hi! Ha!
 Ka wehi au ka matakana,
 Kowai te tangata kia rere ure?
 Tirohanga nga rua rererera
 Nga rua kuri kakanui i raro!
 Aha ha!
 A, ka mate, ka mate!
 Ka ora, ka ora!
 Tenei te tangata, puhuruhuru
 Nana nei i tiki mai whakawhiti te ra!
 Hupane, Kaupane!
 Hupane, Kaupane!
 Whiti te ra!”



It is important to include this discussion on cultural intellectual property because it shows the constantly evolving relationship between the Crown and iwi, and how this impacts on claims under the Treaty of Waitangi. Claims to intellectual, as opposed to real property show the important place that mātauranga Māori (traditional knowledge) has and will continue to have in New Zealand’s future. The Waitangi Tribunal is currently writing a report – WAI 262 – which will advise the government on the approach they should take to the protection of cultural intellectual property – mātauranga Māori.

How will the establishment of property rights over culture affect the development of New Zealand culture in the future?



New Zealand seabed

Undersea New Zealand image from NIWA, with EEZ lines added by the Sustainable Future Institute. Text adapted from Ministry of Foreign Affairs and Trade (2010).

**For every New Zealander there is about
1.30 square kilometres of seabed and
0.06 square kilometres of land.**

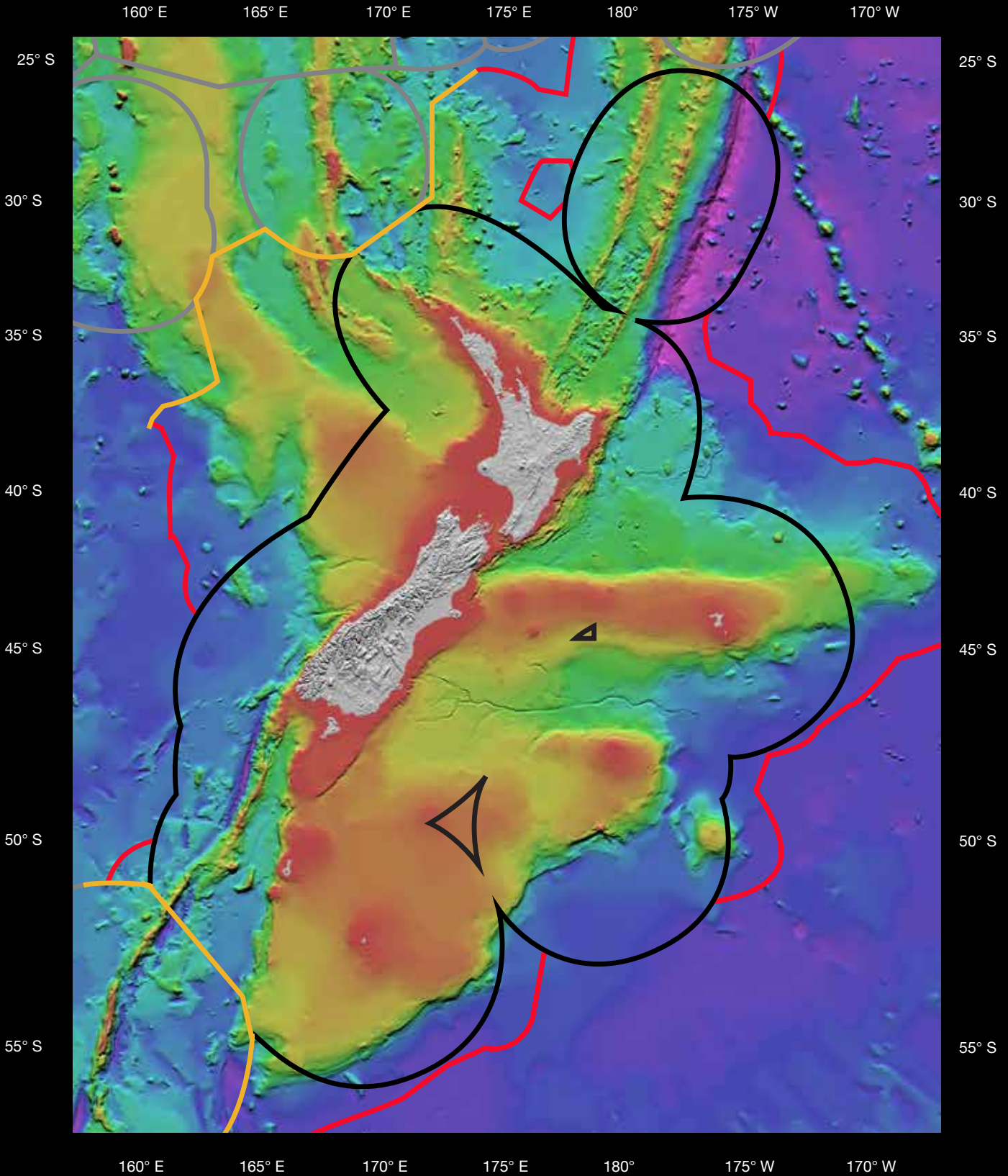
'New Zealand's right to approximately 1.7 million square kilometres of extended continental shelf seabed [was] confirmed by the United Nations Commission on the Limits of the Continental Shelf' on 12 September 2008 (MFAT, 2010). New Zealand's submission to the UN Commission was the culmination of a '10-year, \$44 million project involving technical, scientific, legal and policy input from a range of New Zealand government agencies' (MFAT, 2010), including the Ministry of Foreign Affairs and Trade (MFAT), Land Information New Zealand (LINZ), the National Institute of Water and Atmospheric Research (NIWA), and the Institute of Geological and Nuclear Sciences (GNS Science).

The black lines on the map to the right show New Zealand's Exclusive Economic Zone (EEZ), which extends out 200 nautical miles from the land. Currently the New Zealand government earns more than \$100 million per annum in royalties and other income from the EEZ. The red line indicates New Zealand's extended continental shelf, beyond the EEZ. The grey lines indicate other states' EEZs, while the yellow lines mark the 2004 New Zealand-Australia Maritime Delimitation Treaty.

The area within New Zealand's EEZ covers 4 million square kilometres, while the extended continental shelf covers another 1.7 million square kilometres, making a total of 5.7 million square kilometres of seabed. Since New Zealand's total land area is about 270,000 square kilometres, its seabed covers 21 times its total land area. Put another way, for every New Zealander there is approximately 1.3 square kilometres of seabed and 0.06 square kilometres of land, over which we all have rights and responsibilities.

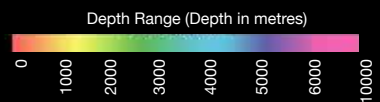
Thoughts:

- How best could this resource be regulated?
- What responsibilities do we have to other communities around the world?
- To what extent, if any, should New Zealand establish a large marine reserve?
- What are the opportunities and challenges that this resource may present to New Zealand?



UNDERSEA NEW ZEALAND

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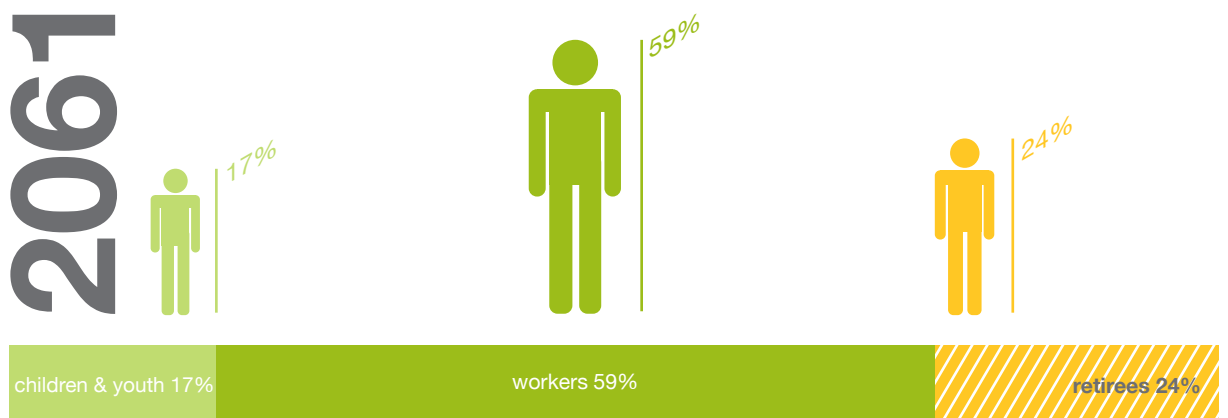
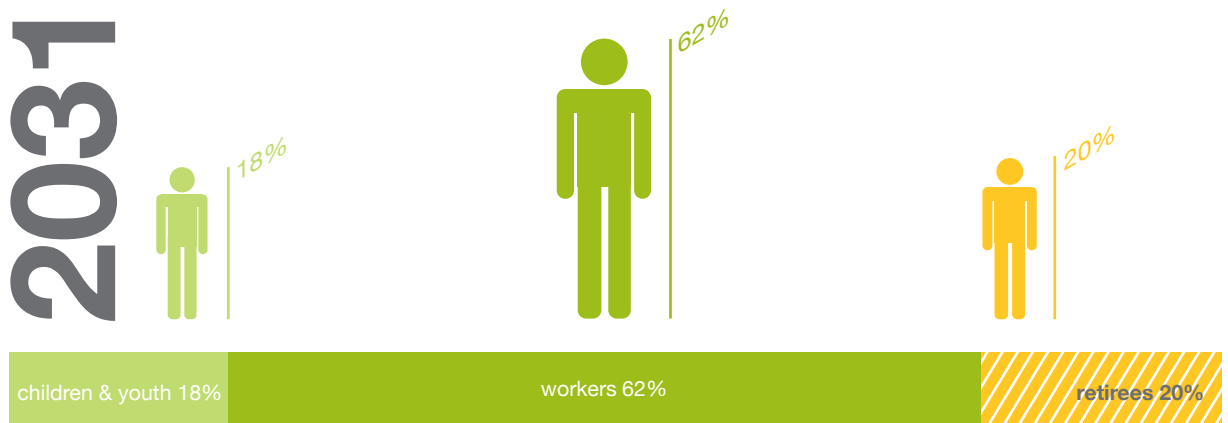
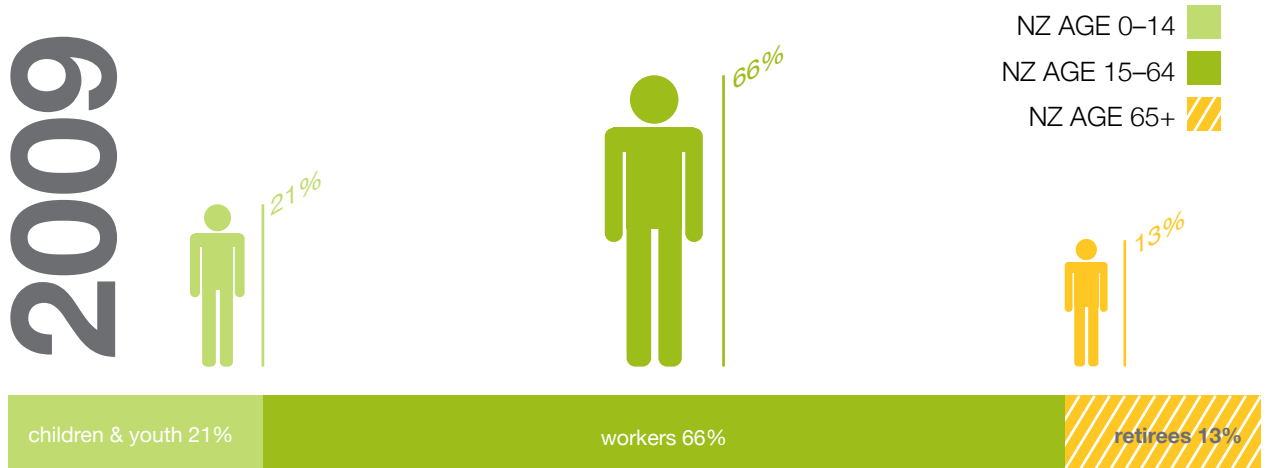




Who are the workers and what will they be doing?

Here we show Statistics New Zealand's series-six projections. These are acknowledged to be crude measures. On the opposite page we explore future trends in the workplace. Adapted from Jeanne Meister & Karie Willyerd's book *The 2020 Workplace: How innovative companies attract, develop, and keep tomorrow's employees today*, pp. 213–232.

This data shows how New Zealand's population will change over the next 50 years and gives us an indication that we must consider how to have foresight to respond to an ageing population.



Twenty predictions for the 2020 workplace. **1: You will be hired and promoted based upon your reputation capital.** 2: Your mobile device will become your office, your classroom, and your concierge. **3: The global talent shortage will be acute.** 4: Recruiting will start on social networking sites. **5: Web commuters will force corporate offices to reinvent themselves.** 6: Companies will hire entire teams. **7: Job requirements for CEOs will include blogging.** 8: The corporate curriculum will use video games, simulations, and alternative reality games as key delivery modes. **9: A 2020 mind-set will be required to thrive in a networked world.** 10: Human resources' focus will move from outsourcing to crowdsourcing. **11: Corporate social networks will flourish and grow inside companies.** 12: You will elect your leader. **13: Lifelong learning will be a business requirement.** 14: Work-life flexibility will replace work-life balance. **15: Companies will disclose their corporate social responsibility programs to attract and retain employees.** 16: Diversity will be a business issue rather than a human resource issue. **17: The lines among marketing, communications, and learning will blur.** 18: Corporate app stores will offer ways to manage work and personal life better. **19: Social media literacy will be required for all employees.** 20: Building a portfolio of contract jobs will be the path to obtaining full-time employment.



– Meister & Willyerd, 2010.



Running out of low-cost oil by 2012!

An October 2010 Parliamentary Library research paper, 'The Next Oil Shock?' written by Clint Smith, provides an overview of the global oil market. In particular, it examines the outlook for oil supply and demand over the next five years, and the economic consequences. The paper provides a number of useful insights, and key sections are repeated here.

GLOBAL SITUATION

Organisations including the International Energy Agency (IEA) and the US military have warned that another supply crunch is likely to occur soon after 2012 due to rising demand and insufficient production capacity. There is a risk that the world economy may be at the start of a cycle of supply crunches leading to price spikes and recessions, followed by recoveries leading to supply crunches. Smith notes:

The central problem for the coming decade will not be a lack of petroleum reserves, but rather a shortage of drilling platforms, engineers and refining capacity. Even were a concerted effort begun today to repair that shortage, it would be ten years before production could catch up with expected demand. ... A severe energy crunch is inevitable without a massive expansion of production and refining capacity.

To replace the declining production from existing oil wells and increase production, oil companies are forced to extract oil in more difficult and expensive conditions (deep-water, oil sands, lignite to liquids) from smaller, less favourable reserves. The marginal (price-setting) barrel of oil costs around US\$75–85 to produce. This will continue to rise with higher demand and exhaustion of reserves.

Although there remain large reserves of oil which can be extracted, the world's daily capacity to extract oil cannot keep increasing indefinitely. A point will be reached where it is not economically and physically feasible to replace the declining production from existing wells and add new production fast enough for total production capacity to increase. Projections from the IEA and other groups have this occurring, at least temporarily, as soon as 2012.

The difference between the global capacity to produce oil and global demand is the supply buffer. When the supply buffer is large, oil prices will be low. When the supply buffer shrinks – due to demand rising faster than production capacity, or production capacity falling – prices will rise as markets add in the risk that supply will not be available to meet demand at any given point in time.

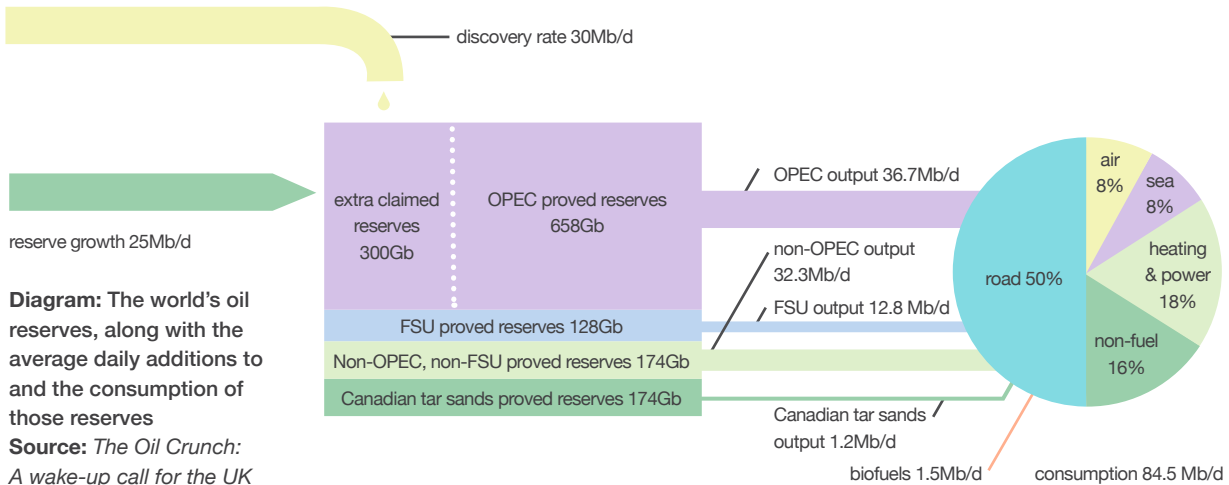
When a supply crunch forces oil prices beyond a certain point, the cost of oil forces consumers and businesses to cut other spending, inducing a recession. The recession destroys demand for oil, allowing prices to drop. Major international organisations are warning of another supply crunch as soon as 2012.

The world may be entering an era defined by relatively short periods of economic growth terminating in oil price spikes and recession. New Zealand is not immune to the consequences of this situation. In fact, its dependency on bulk exports and tourism makes it very vulnerable to oil shocks. Smith notes:

A range of expert analyses forecast that production capacity will fall or, at best, not grow as fast as demand in coming years. As a result, the supply buffer is diminishing and another supply crunch appears inevitable. The question is when:

- ◆ *The US Joint Forces Command forecasts that: 'by 2012, surplus oil production capacity could entirely disappear, and as early as 2015, the shortfall in output could reach nearly 10mb/d.'*
- ◆ *The UK Industry Task Force on Peak Oil and Energy Security predicts: 'as early as 2012/2013 and no later than 2014/2015, oil prices are likely to spike, imperilling economic growth and causing economic dislocation.'*
- ◆ *Lloyds of London says: 'an oil crunch is likely in the short to medium term' and 'appears likely around 2013.'*
- ◆ *A German military report states: 'some probability that peak oil will occur around the year 2010 and that the impact on security is expected to be felt 15 to 30 years later ... [there will be] partial or complete failure of markets ... [including] shortages in the supply of vital goods could arise ... A restructuring of oil supplies will not be equally possible in all regions before the onset of peak oil.'*
- ◆ *The IEA writes: 'current global trends in energy supply and consumption are patently unsustainable ... the era of cheap oil is over.'*





IMPACT ON NEW ZEALAND

New Zealand's annual oil production in 2008 and 2009 was 55,000 barrels per day. Consumption was 148,000 barrels per day. Proven reserves total 189 million barrels. In the medium term, New Zealand will remain heavily dependent on imported oil. Domestic production at any level cannot insulate New Zealand from global shortfalls or price rises. New Zealand pays the world price for oil, whether that oil is produced domestically or not, because oil producers will not sell their product in New Zealand if they can get a higher price overseas. New Zealand would be affected by oil supply crunches both directly and indirectly via the effect on trading partners.

New Zealand is heavily dependent on oil imports and will remain so for the foreseeable future. While there is potential to substantially increase domestic production, domestic oil production cannot insulate New Zealand from global oil price shocks. Key export-generating industries in the New Zealand economy, including tourism and timber, dairy, and meat exports, are very vulnerable to oil shocks because of their reliance on affordable international transport.

There are thought to be potentially large, unfound oil reserves. A 2009 study by the Institute of Geological and Nuclear Sciences estimates that there is a 90% chance that reserves totalling 1.9 billion barrels of oil remain in New Zealand and a 50% chance there are 6.5 billion barrels. Most of these estimated undiscovered reserves are in deposits that are difficult to access, under deep water in the Great South Basin and the deep water Taranaki basin. New Zealand's geographical position is a serious challenge to increasing oil production. A report by Lincoln University's Centre for Land, Environment and People (LEaP) states:

New Zealand's isolation from the rest of the world acts as a major constraint in the attraction of international explorers. Exploration and mining companies operating in New Zealand have to bear the cost of getting equipment to and from New Zealand as well as shipping crude oil to international refineries.

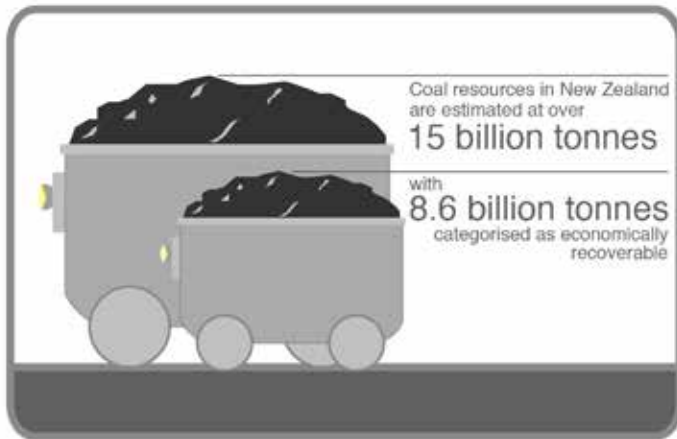
In addition to petroleum oil reserves, New Zealand has a vast resource of lignite coal, which can be converted into petroleum products. Solid Energy and several other companies are proposing lignite to liquids plants or underground coal gasification projects to create oil products. However, the IEA estimates lignite to liquids production costs are US\$60–110 per barrel, so high oil prices are needed to make lignite to liquids viable.

If New Zealand can increase its oil production, it could be a major economic boon in the long run. The Ministry of Economic Development projects oil exports to reach \$30 billion per annum by 2025. However, becoming self-sufficient would require a massive increase in New Zealand's oil production and refining capacity, and, as with any region, New Zealand would not be able to sustain high production rates as reserves were depleted.

No large-scale coal to liquids projects or commercial production wells of, as yet undiscovered, conventional oil reserves are planned to come online within the next five years. In the medium term, New Zealand will remain heavily dependent on imported oil.



Coal mining in New Zealand



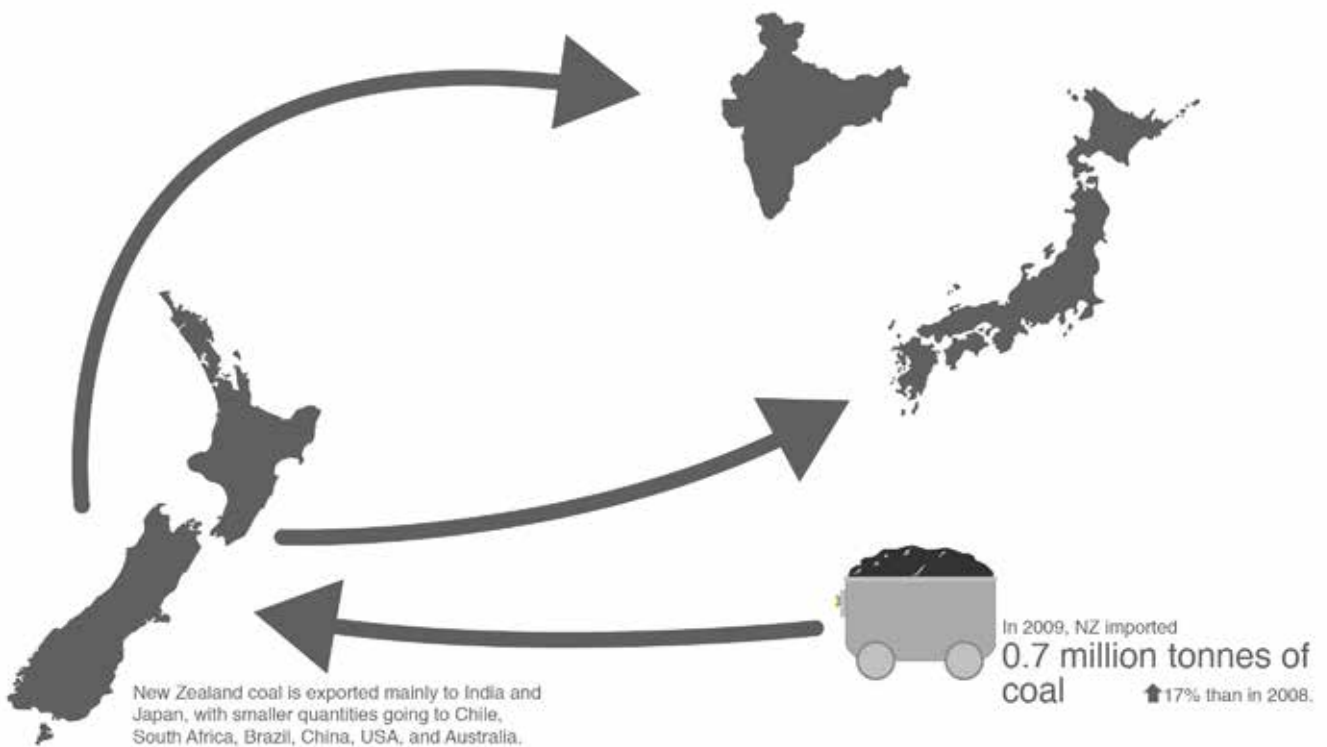
Mining in New Zealand predated European arrival with Māori quarrying rock such as argillite (Walrond, 2010). Europeans began mining in the latter half of the 19th century and, in the latter decades of the 20th century and into the 21st century, opposition to mining on environmental grounds started to gather strength. In 2009 a review of Schedule 4 of the Crown Minerals Act 1991, the major piece of mining-related legislation in New Zealand, provoked considerable controversy.

The stated vision of the Coal Association of New Zealand (n.d.[a]) is that ‘coal is accepted as a secure, competitive, and environmentally sustainable energy resource contributing to New Zealand’s prosperity’.

Coal resources in New Zealand are estimated at over 15 billion tonnes, with 8.6 billion tonnes

categorised as economically recoverable. New Zealand has 45 listed coal mines located in the Waikato, Otago/Southland, and the West Coast regions (Coal Association of New Zealand, n.d.[b]). In 2009 there were 6800 people directly employed by the mining industry and a further 8000 people employed indirectly, flowing from the industry’s economic activity (Straterra, 2010: vi).

New Zealand coal production in 2009 was 4.56 million tonnes, down 7% on 2008. New Zealand’s coal consumption in 2009 was 3.1 million tonnes, down 27% on 2008. New Zealand coal is exported mainly to India and Japan, with smaller quantities going to Chile, South Africa, Brazil, China, USA, and Australia. Although coal is produced within New Zealand and exported, significant quantities are also imported to meet local demand. In recent years, there was insufficient coal supply from North



Island mines for the Huntly power station and it proved economic to import sub-bituminous coals from a range of Indonesian mines. Approximately 0.7 million tonnes of coal was imported in the year ended December 2009; this was 17% higher than in 2008 (Coal Association of New Zealand, n.d.[b]).

As with every sector there are challenges facing the coal industry, and the energy sector more widely, brought about by climate change. Political concern over greenhouse gases could result in specific regulations against new coal-fired power stations. Along with the criticism due to the environmental impacts and sustainability of coal production from environmental groups, public opinion on coal production has become increasingly negative as a result of recent accidents within the mining industry both locally and globally.

Although opposition to mining in New Zealand is growing the question remains as to whether it will ever be large enough to outweigh the benefits of the \$NZ 2.149 billion that minerals contributed to our GDP in 2008 (Straterra, 2010: 6). It must be asked: how do these opposing voices impact upon the more than 14,000 people employed through mining activity?

And finally, in response to the vision of the Coal Association of New Zealand, how can the perception of coal be changed so it is accepted as a secure, competitive, and environmentally sustainable energy resource contributing to New Zealand's overall prosperity?



The water crisis

Water crisis is a term now being used to refer to a perception of the scarcity of the world's water resources relative to an increase in human demand. The main characteristics of the water crisis are purportedly overall scarcity of usable water and water pollution. The term has been applied to the worldwide water situation over the last decade by the United Nations (UN News Centre, 2006), while other world organisations, including the Food and Agriculture Organization, stated in 2003 that there is no water crisis but that steps must be taken to avoid one in the future (FAO, 2003).

The global picture:

- ◆ Since 1960 the world's population has doubled while water withdrawal has quadrupled (StatisticsNZ, 2004);
- ◆ The heaviest water user globally is agriculture, responsible for about 69% of total freshwater abstraction, followed by industry at around 23% and with households accounting for 8% (ibid.); and
- ◆ Net population growth has resulted in a global increase in water consumption, however per capita water consumption in OECD countries has decreased since 1980 (ibid.).

Are we experiencing a global water crisis? In 2003 the BBC reported that two-fifths of the world's people already face serious shortages, and water-borne diseases fill half of the hospital beds worldwide (Kirby, 2003). Further to this:

- ◆ The extraction of groundwater beyond the safe yield of the aquifer is leading to diminished agricultural yields (Worm, 2011);
- ◆ An estimated 883 million people have inadequate access to safe drinking water (WHO, 2008: 26);
- ◆ An estimated 2.5 billion people have inadequate access to water for sanitation and waste disposal (UNICEF, 2008); and
- ◆ Overuse and pollution of water resources is harming biodiversity.

The world's consumption of water is doubling every 20 years, which is more than twice the rate of our population increase (Clothier, 2008). With global population forecasted to continue to increase for some time before there is any prospect that it will stabilise, and with people in wealthy countries using 10 times more water than those in poor ones, the issue is not that there is less water available but that, simply, there are more of us to share it and that some of us are using more than our fair share.

Privatising the water supply is one option to ensure effective water usage. A global water market of \$1 trillion is forecast for 2020 and within a single generation global freshwater demand is expected to exceed supply by 40% (Globe-net, 2011). If water is expensive those who can will economise on its use, but for those unable to reduce their consumption the economic impact will be great.

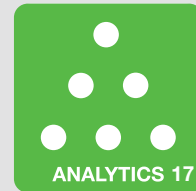
There is, however, the potential to better manage the use of water, especially within the agricultural industry which accounts for 70% of the water we use (Clothier, 2008). There is an urgent need to find ways to effectively manage our limited water supplies.

The local picture:

- ◆ New Zealand is the only country in the OECD where agricultural water use is still higher than industrial use.
- ◆ Our rivers and lakes provide about 60% of the water we consume, with the remaining 40% coming from underground reservoirs. (StatisticsNZ, 2004)

Climate change

Information adapted from a 2010 Ministry for the Environment report, *New Zealand's Greenhouse Gas Inventory 1990–2008*.



The New Zealand government has responded to climate change with a variety of policies aimed at reducing greenhouse gas emissions and mitigating its potential impacts. Policies include: targets for emission reductions, increased use of renewable energy and increased energy efficiency. The government's primary policy response to climate change is the New Zealand Emissions Trading Scheme (the NZETS) which has been designed to support international efforts to reduce greenhouse gas emissions while maintaining economic productivity.

The NZETS introduces a financial cost on greenhouse gas emissions to provide an incentive for people to reduce those emissions and to plant forests to absorb carbon dioxide. The NZETS will include all sectors of the economy and all greenhouse gases covered by the Kyoto Protocol by the year 2015. Under this scheme sectors have obligations to report emissions and to obtain and surrender emissions units (carbon credits). Households will feel some of the effects of the scheme as the sectors involved pass their costs on. Most New Zealand businesses will also not be required to trade emissions units.

The challenge of climate change for New Zealand

Likely climate change impacts in New Zealand include:

- more frequent extreme weather events such as droughts (especially in the east of New Zealand) and floods;
- a change in rainfall patterns – higher rainfall in the west and lower in the east; and
- higher temperatures, more in the North Island than the South, and rising sea levels.

The Ministry for the Environment is undertaking research on the economic implications of extreme weather events and climate change as it is likely that there would be significant costs associated with changing land-use activities to suit a new

climate. However, alongside this is the potential to identify new business opportunities that may arise from climate change.

The ability to adapt is closely linked to social and economic development, however even societies with high capacities to adapt are still vulnerable to climate change. With the severity of the impacts of climate change on New Zealand's economy, environment and people as yet unknown the barriers, limits and costs of future adaptation cannot be fully understood.

The following questions need to be asked in the face of the current and future challenges of climate change. Does New Zealand have a strong voice on the world stage in international efforts to reduce greenhouse gas emissions, and does this matter? Will current domestic climate change policies and the level of action being taken by the New Zealand government enhance New Zealand's international reputation for environmental awareness or damage it? Will New Zealand's Number 8 wire mentality, which holds that anything can be made or fixed with basic materials, help us in adapting to a changing climate? Or will the Kiwi 'she'll be right, mate' style of ingenuity, an expression of the belief that a situation need only to be adequate or sufficient for what is needed, see us lag behind international efforts to adapt to our changing environment?

New Zealand's total greenhouse gas emissions by sector 2008

Source: (Ministry for the Environment, 2010)

Sector	Emissions/Removals (Mt CO ₂ -e)
Energy	33.8
Industrial processes	4.3
Solvent and other products	0.03
Agriculture	34.8
Waste	1.7
Land-use change and forestry	-26.2
Net Total	48.5



Disasters – largest and most recent

Statistics of casualties drawn from NPA, 2011; NZPA, 2011; & SFI, 2006.

Christchurch, 22 Feb 2011

182
EARTHQUAKE

Japan, 11 March 2011

14,564 dead & 11,356 missing as of 28 April 2011
EARTHQUAKE, TSUNAMI, NUCLEAR

tsunami

225,000
2004, INDIAN OCEAN

earthquake

830,000
1556, SHENSI P, CHINA

flood

up to 6,000,000
1887, CHINA

avalanche

66,700
1970, PERU

eruption

36,000
1883, INDONESIA

terrorist

2749
2001, USA

nuclear

4000
1986–TODAY, CHERNOBYL

hurricane

500,000
1970, BANGLADESH

HIV

25,000,000
1981–2008, GLOBAL

spanish flu

40,000,000
1918–1919, GLOBAL

plague

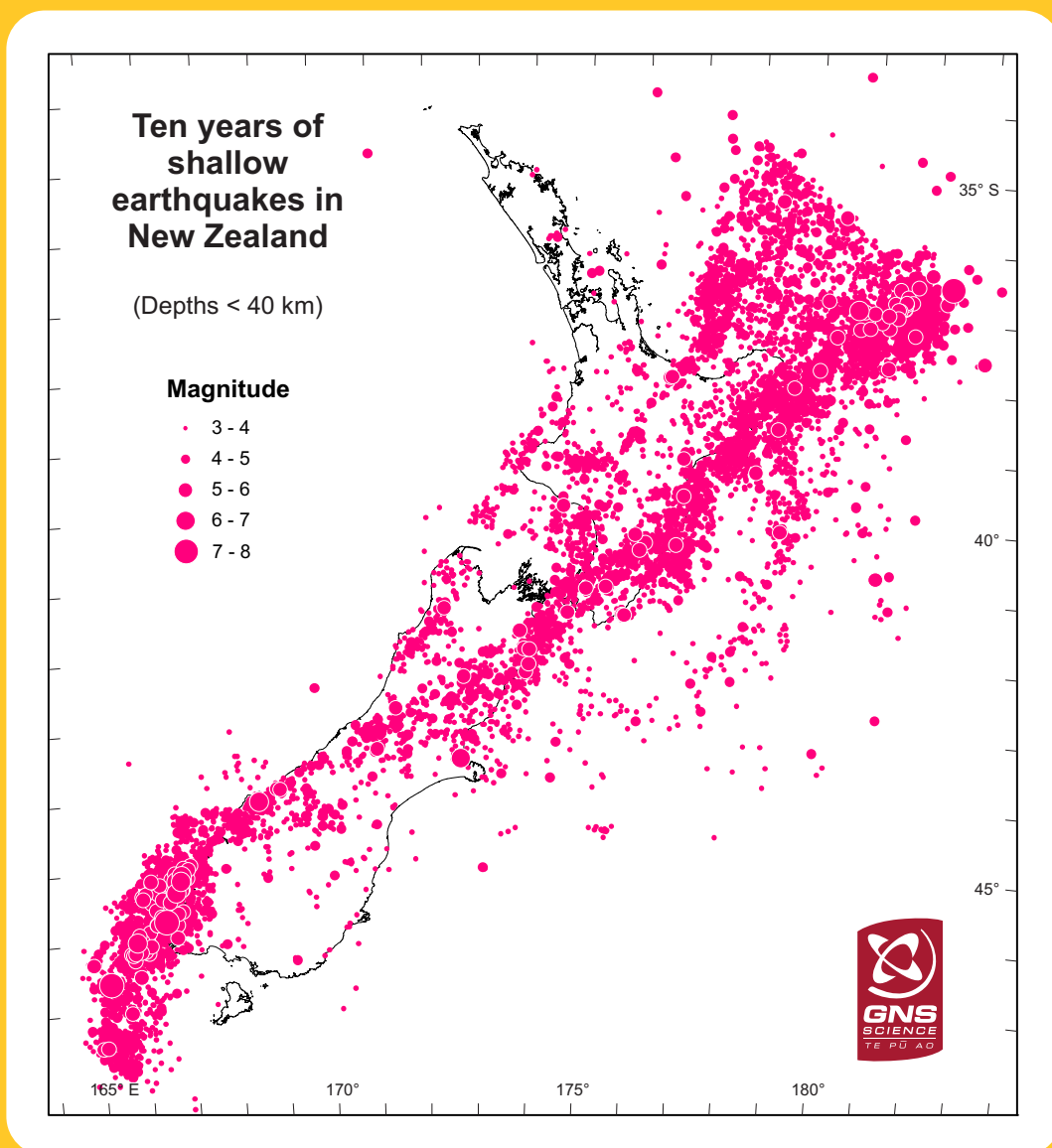
75,000,000
1347–1351, GLOBAL

The Shaky Isles

Map from GNS Science.



New Zealand was once nicknamed the Shaky Isles because of its frequent seismic activity. This name has become less common in usage, although New Zealand still experiences more than 14,000 earthquakes annually. The image below denotes the main fault lines in New Zealand and the locations of significant earthquakes.





The Tragedy of the Commons

Donella Meadows and Diana Wright in *Thinking in Systems* (p. 116) put forward the following concept.

The trap called the tragedy of the commons comes about when there is escalation, or just simple growth, in a commonly shared, erodable environment. Ecologist Garrett Hardin described the commons system in a classic article in 1968. Hardin used as his opening example a common grazing land:

Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons ... Explicitly or implicitly, more or less consciously, he asks, 'What is the utility to me of adding one more animal to my herd?' ... Since the herdsman receives all the proceeds from the sale of the additional animal, the positive utility is nearly +1 ... Since, however, the effects of overgrazing are shared by all ... the negative utility for any particular decision-making herdsman is only a fraction of -1. ...

The rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another ... But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each ... is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all ... rush, each pursuing his own best interest.

The Trap

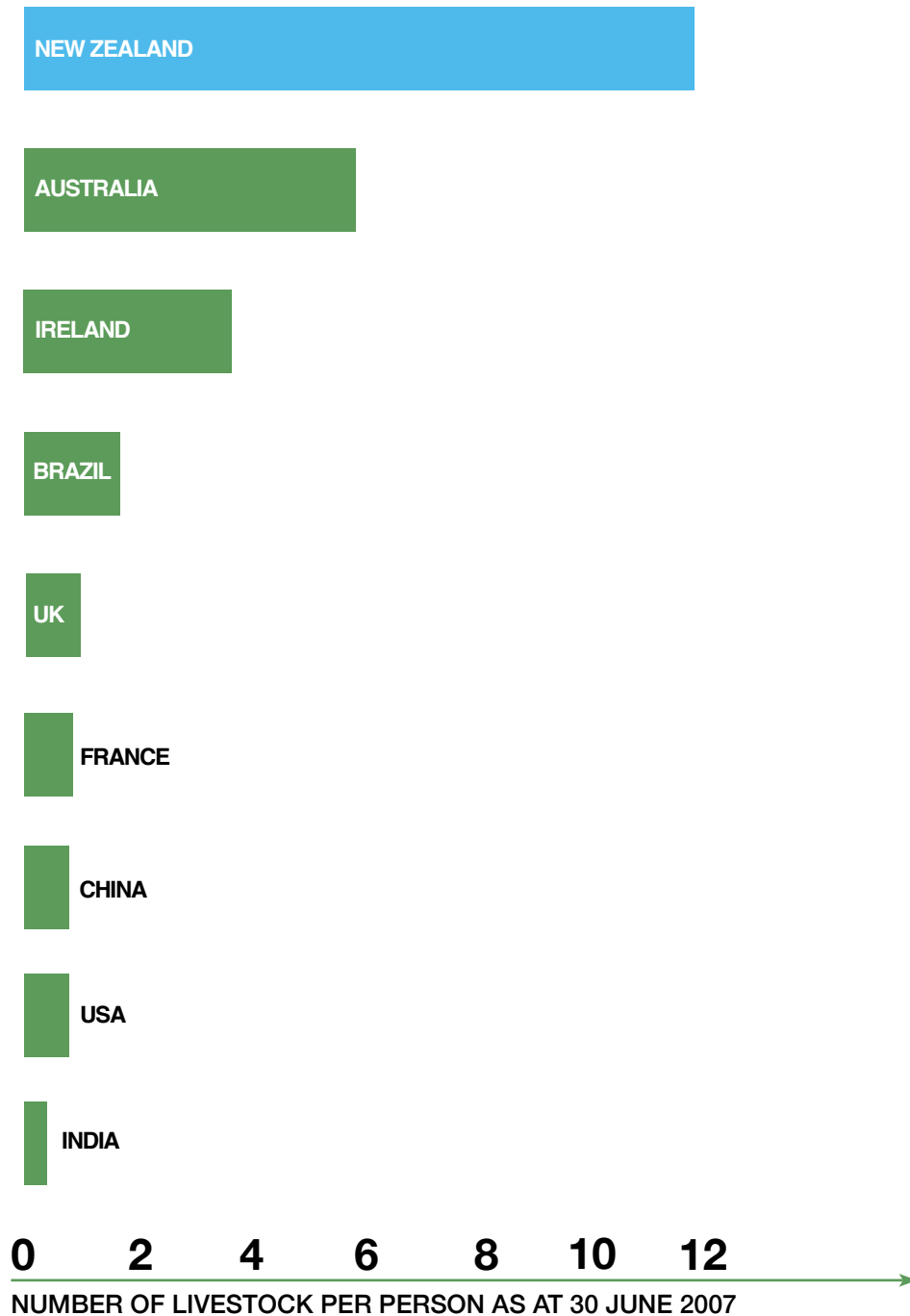
When there is a commonly shared resource, every user benefits directly from its use, but the costs of its abuse are shared with everyone else. Therefore, there is very little feedback on the condition of the resource to the users who are making decisions about the resource. The consequence is overuse of the resource, eroding it until it becomes unavailable to anyone.

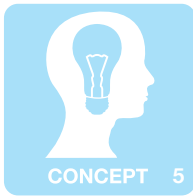
The Way Out

Educating and exhorting the users will help them understand the consequences of abusing the resource. Making users aware of the consequences of their actions by either privatising the resource (so each user feels the direct consequences of their abuse) or by regulating the access of all users to the resource (since many resources cannot be privatised), the users will have a greater understanding of the impact of their actions. Hopefully through this, the tragedy of the commons can be avoided.

Number of livestock by country per person

Statistics from SFI *Think Piece*, 6 October 2008, where livestock includes cattle, sheep and pigs.





The Precautionary Principle

Image adapted from M_bartosch / freedigitalphotos.net.

The Precautionary Principle is born out of gradual shifts in humankind's attitude towards the environment. This shift began when it became apparent that the environment may not be able to cure itself when damaged. The first step towards rectifying this was the Polluter Pays Principle, which sought to fix existing damages but did not actually address the causal problems. Given the inefficiency here, policy evolved towards the Prevention Principle in the hope that further damage could be avoided. The Precautionary Principle represents further evolution and recognises that given the uncertainty and potential magnitude of current-day phenomena such as climate change and genetic modification, we must now be anticipatory in our approach. As the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) notes:

In its most basic form, the PP [Precautionary Principle] is a strategy to cope with scientific uncertainties in the assessment and management of risks. It is about the wisdom of action under uncertainty: 'Look before you leap', 'better safe than sorry', and many other folkloristic idioms capture some aspect of this wisdom. (COMEST, 2005: 8)

There is some debate around the exact definition of the Precautionary Principle. One of the widely quoted definitions is from the *Rio Declaration on Environment and Development 1992 (UN)*:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. (COMEST, 2005: 12)

This essentially means that action must be taken to avoid serious or irreversible harm to the environment, even if there is not scientific certainty about the cause and magnitude of that harm. The International Standard, *ISO 31000:2009 Risk management – Principles and guidelines* arguably suggests an integrated risk management framework is the way forward. Although the New Zealand Treasury recognised that changes were needed in 2006, progress appears unclear:

Currently in New Zealand, the precautionary principle is not being applied in the context of an integrated risk management framework (unlike in the European Union, the United States and Canada). There is also a lack of guidelines on implementation. Clear guidelines could help ensure a more consistent and subtle approach that explores a wider range of options. (Treasury, 2006)





AS WE KNOW,
THERE ARE KNOWN
KNOWN;
THERE ARE THINGS WE
KNOW WE KNOW.
WE ALSO KNOW
THERE ARE KNOWN
UNKNOWNS;
THAT IS TO SAY
WE KNOW THERE ARE
SOME THINGS
WE DO NOT KNOW.
BUT THERE ARE ALSO
UNKNOWN UNKNOWN
– THE ONES WE DON'T
KNOW WE DON'T KNOW.



Timeline of future studies

The International dates are found in *Building the Future: A Workbook to Accompany Futuring: The Exploration of the Future* by Edward Cornish by J. Loukides & L. Gardner (2006) pp. 69–74. The New Zealand dates are found in Report 11: *A History of Future-thinking Initiatives in New Zealand* (SFI, 2011); further dates are found in Working Paper 2010/01: *Exploring Long-term Policy Drivers in Science: A scan of international think tanks* (SFI, 2010).

Future studies initiatives reflect the time period and part of the world from which they emerge. What events are fuelling future-thinking in the 21st century? We invite you to read our latest publication, *Report 11: A History of Future-thinking Initiatives in New Zealand, 1936–2010: Learning from the past to build a better future*, which contains a review of futures studies work in this country.

International

RAND Corporation, considered to be the first think tank concentrating on future issues, established to study inter-continental warfare (USA)
The National Science Foundation established (USA)
International Centre for Foresight established (France)
NASA established (USA)
‘Committee of 1985’ established to take a broader view of France’s future and its economic goals and social problems (France)
US Airforce produced report that tried to blueprint technological characteristics of forces that would most effectively support the Department of Defense in the 1970s (USA)
Commission of the Year 2000 established (USA)
Olaf Helmer (RAND Corporation) published <i>Prospectus for an Institute for the Future</i> providing a prototype for futures institutes
World Future Society established. It published its first edition of <i>The Futurist</i> in February the following year
Futuribles Group established to ‘generate a habit, the habit of forward-looking’ (France)
Institute for the Future established (USA)
Urban Institute established (USA)
<i>Future Shock</i> published by Alvin Toffler
Futures Group, an offshoot of the Institute for the Future established by Theodore Gordon
Centre for Independent Studies established (Australia)

New Zealand

Worth thinking about ...

- Consider the role that concerns about security might have played in some of the earlier international future studies initiatives.
- Why do you think it took New Zealand until 1968 to begin developing foresight at a centralised level?
- Consider how initiatives are influenced by the time period and region from which they emerge.
- Consider how threats to our environment and sustainability might fuel or shape the direction of future studies.
- This timeline is a sample of future-thinking; are there any initiatives missing?

First National Development Conference held (the second was held the following year in 1969)

New Zealand Energy and Research Development Committee established
Futurist Alvin Toffler travels to New Zealand

Economic and Social Planning Taskforce established

The Commission for the Future and the New Zealand Planning Council are established by the New Zealand Planning Act

The Third Wave published by Alvin Toffler

New Zealand Futures Trust established

Options for the Future published by James Duncan (see over)

Upgrading New Zealand's Competitive Advantage Project

20/20 Group formed to project 20 years into the future

Government of Finland establishes a temporary Committee for the Future (a body which went on to become a permanent Committee in 2000)

Millennium Project established (USA)

The Foresight Project
Bright Future: 5 Steps Ahead Initiative
(e)-vision Centre for Communication, Art & Technology established

Civic Exchange think tank founded in Hong Kong

Catching the Knowledge Wave Project
Household Vision Survey

Knowledge Wave Leadership Forum

Sustainable Future Institute established
The New Zealand Institute established

United Nations Decade of Education for Sustainable Development (UNDESD) launched

First Buckminster Fuller Challenge held to support the development and implementation of a strategy that has significant potential to solve humanity's most pressing problems

New Zealand's first Long Term Fiscal Position Report published by the Treasury
Digital Earth Summit on Sustainability held in Auckland
For Māori Future Makers Project

The SANZ/UNESCO Project launched as part of New Zealand's contribution to the United Nations Decade of Education for Sustainable Development (UNDESD)
What Matters Most to New Zealanders launched

FutureMakers Project

Foresight Network established as an online social networking site for futurists

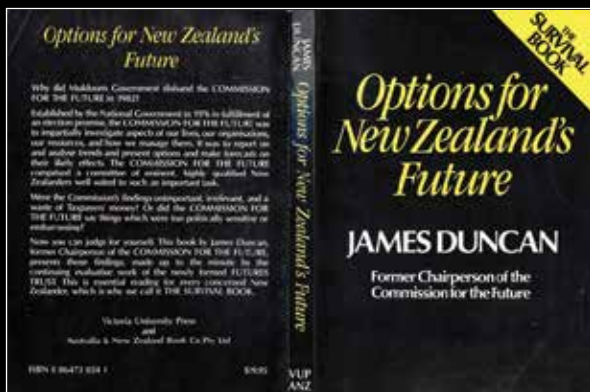
2025 Taskforce established
New Zealand Job Summit held
New Zealand Entrepreneurial Summit held
Futures Forum Established

A choice for the future

In the 'surprise-free future' there would be a continuation of present trends, attitudes and behaviour. Surveys, polls and discussions suggest that New Zealanders have a definite preference for a different sort of future. But it's one thing to talk about a model future, and quite another to achieve...

In this book I have considered first the principles on which our society might be based (Introduction), second the international (Chapter I) and New Zealand constraints (Chapter II) which might affect our freedom of choice, and then (Chapters III-IV) the major determinants where we do have some degree of manoeuvrability. I now turn to the realistic future of New Zealand. I explore, firstly the way New Zealand might develop; secondly the way people say they would like the country to develop and the differences between the two; then the consequences to the different sectors of our society; and finally the implications for every individual.

Excerpted from 'Options for New Zealand's Future'

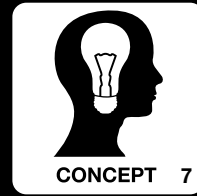


Epilogue

I have made a plea above for more research to clarify our options. This will help. But finally we will be left to make our judgement, and no matter how good the research is it cannot do this for us. If, as is likely, enough information is not available, or is unattainable, we must make this judgement in terms of our preconceived ideas, albeit illuminated by our research. So our judgement will be a political decision based on our ethical principles. It is not for me to say what these should be, but I insist that it is important that people make clear judgements. In our society we are likely to have a diversity of ethical views, which means that acceptance of a common vision for the future ultimately depends on mutual understanding and tolerance. These are the stuff of philosophy and religion. Indeed they have been talked about by the great religions of the world for centuries. They are not new, but they remain vital to cohesive society. They are as vital for the bureaucracy and politicians, as for housewives, young bloods or dropouts. For every time a decision is made it affects others and if one is made without understanding it does not serve us well.

Informed Foresight

James Duncan's book *Options for New Zealand's Future* arguably provided the first full integrated analysis of New Zealand's future, (pp. 199 & 216).



Something to Think About

When James Duncan wrote this book in 1984, he highlighted a number of obstacles to the acceptance of a common vision. Are his observations still relevant? How have things changed or remained the same?

How can a common vision be reached?

Duncan states that New Zealanders have a 'definite preference for a different sort of future'. Do you think this is still the case? Why or why not?

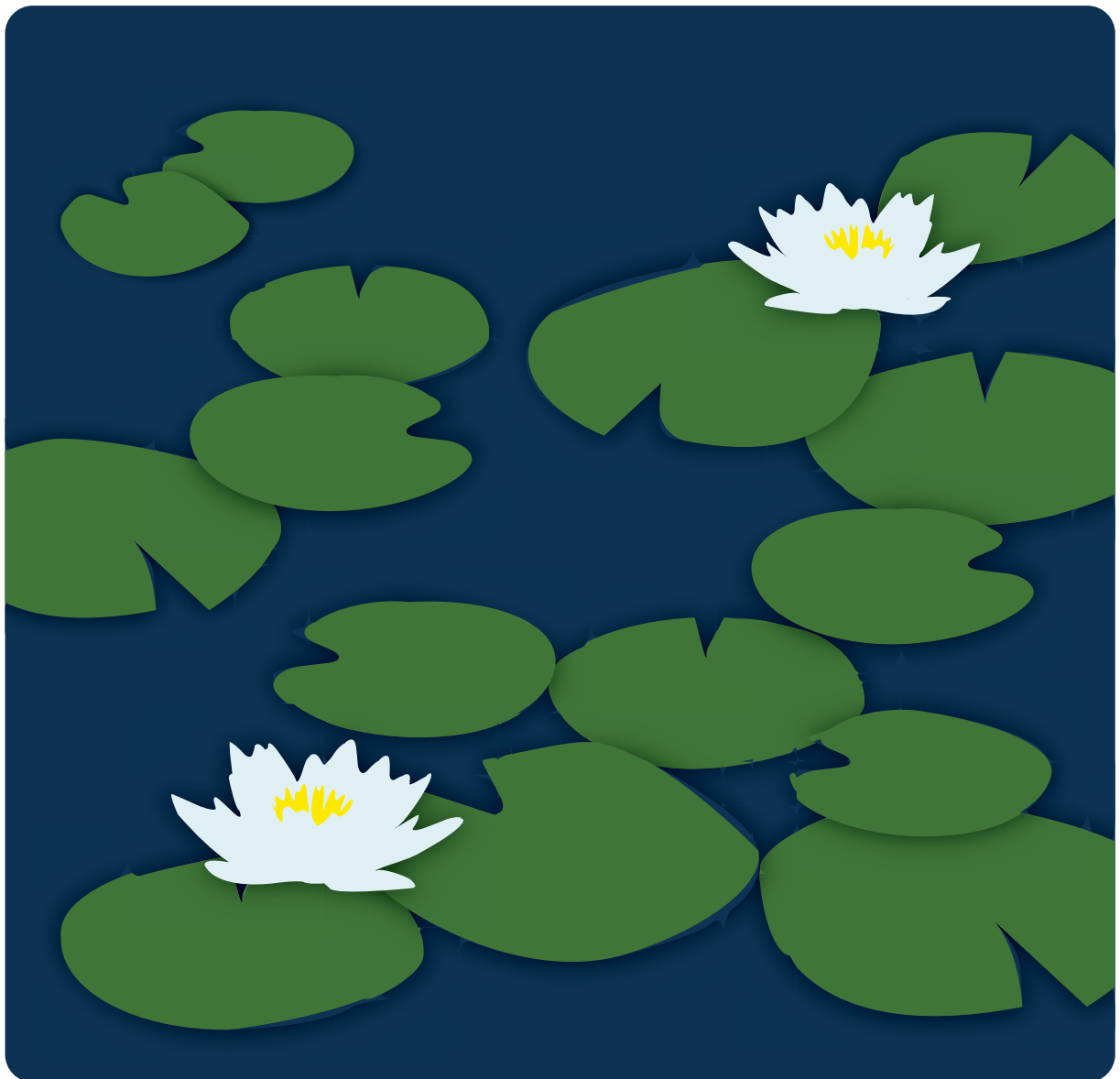


The Lily Pond Analogy

Donella Meadows, Dennis Meadows and Jorgen Randers revisit an old fable in *Beyond the Limits* (p. 18).

A French riddle for children illustrates another aspect of exponential growth – the apparent suddenness with which an exponentially growing quantity approaches a fixed limit. Suppose you own a pond on which a water lily is growing. The lily plant doubles in size each day. If the plant were allowed to grow unchecked, it would completely cover the pond in 30 days, choking off the other forms of life in the water. For a long time the lily plant seems small, so you decide not to worry about it until it covers half the pond. On what day will that be? On the twenty-ninth day. You have just one day to act to save your pond.

The lily pond makes us aware of exponential growth. It shows us that issues can quickly grow out of control if we don't have the foresight to deal with them earlier. In today's world, changes are happening at a faster rate, so the concept of the lily pond has become increasingly important. The longer you leave a problem, the more urgent it becomes.



Damn the Dam



BY JOHN HANLON

Leaf falls to kiss the image of a mountain
the early morning mist has ceased to play
Birds dancing lightly on the branches by a fountain
Of a waterfall which dazzles with its spray

Tall and strong and aged, contented and serene
The kauri tree surveys this grand domain
For miles and miles around him, a sea of rolling green
Tomorrow all this beauty won't remain

Damn the dam cried the fantail,
As he flew into as he flew into the sky,
To give power to the people
All this beauty has to die

Rain falls from above and splashes on the ground
Goes running down the mountain to the sea
And leaping over pebbles makes such a joyful sound
Such as Mother Nature's meant to be

I have grave reflection, reflection of a grave
Trees that once lived green now dead and brown
The homes of tiny animals and little birds as well
For the sake of man's progression have been drowned

Damn the dam cried the fantail,
As he flew into as he flew into the sky,
To give power to the people
All this beauty has to die

Damn the dam cried the fantail,
As he flew into as he flew into the sky,

Damn the dam cried the fantail,
As he flew into as he flew into the sky,
To give power to the people
All this beauty has to die ...

JOHN HANLON wrote this song as part of the conservation movement, arising during the Manapouri Hydro Dam controversy. The Save Manapouri campaign is now regarded as a milestone in New Zealand's environmental protection, as surrounding rainforest, islands and coves would have been destroyed had Lake Manapouri's outlet been damned (Folksong.org, 2008). This shows that having foresight can lead to protecting the environment through evaluating different future consequences.

New Zealanders' thoughts on Strategy

n.d.	Proverbs	<p>Kohia te kai rangatira, ruia te taitea. Gather the good food, cast away the rubbish. (Adopt what is good and shun what is bad.)</p> <p>Mā te tika o te toki o te tangere, me te tohu o te panaho, ka pai te tere o te waka i ngā momo moana katoa. By designing and shaping the keel of the waka to perfection, your canoe will overcome obstacles.</p>
1870	Premier Sir Julius Vogel Eighth Premier of New Zealand (Orsman & Moore, 1988: 658)	<p>'We recognize that the great wants of the Colony are – public works, in the shape of roads and railways and immigration.'</p>
1908	Politician William Pember Reeves New Zealand statesman, historian and poet, who promoted social reform (Orsman & Moore, 1988: 538)	<p>'I do not hesitate to say, that in a healthy capable farmer or rural worker the colony offers the most inviting life in the world. In the first place, the life is cheerful and healthy; in the next place, the work, though laborious at times, need not be killing, and then the solitude, that deadly accompaniment of early colonial life, has now ceased to be continuous except in a few scattered outposts. Moreover – and this is important – there is money in it.'</p>
1939	Politician Michael Joseph Savage First Labour Prime Minister of New Zealand (Orsman & Moore, 1988: 567)	<p>'Both with gratitude for the past, and with confidence in the future, we range ourselves without fear beside Britain. Where she goes, we go, where she stands, we stand. We are only a small and a young nation, but we are one and all a band of brothers, and we march forward with a union of hearts and wills to a common destiny.'</p>
1955	Explorer John Cawte Beaglehole <i>The Journals of Captain James Cook</i> (McGill, 2004: 25)	<p>'The world, one is sometimes driven to reflect, has been arranged for the convenience of the inhabitants of the northern hemisphere.'</p>
1983	Maori leader Dame Whina Cooper (McGill, 2004: 61)	<p>'I can't sleep at night, because even at night I'm worrying about things and planning things. It's the mana, you see. If you've got it, it never lets you alone.'</p>
2006	Film maker Sir Peter Jackson (Sibley, 2006)	<p>'Once you start going to the next level of detail, below the main story points, that's when you run up against the hard decisions: which is basically a case of, "We can't include everything, so what's our strategy? What do we want to focus on?" You think beyond what your favourite bits are and you look at it in terms of a greater strategy, which in our case was really keeping a relationship between Frodo and the ring, keeping the events totally focused on the forward movement of the journey.'</p>
2009	Scientist Sir Paul Callaghan 2011 New Zealander of the Year (Callaghan, 2009: 20–21)	<p>'We need our universities and institutes to champion world-class New Zealand science research where only the best will do, attracting the world's best to New Zealand. ... We need to build a science platform that is internationally connected, wealth generating and a focal point for society, raising the status of science in New Zealand. And most importantly, perhaps, we need to educate a new generation of scientists who are excellent, entrepreneurial, communicative and socially aware, a generation who wish to stay in and contribute to New Zealand.'</p>
2010	Inventor Ray Avery 2010 New Zealander of the Year (Avery, 2010: 38 & 259)	<p>'I'm trying to take all of the stuff I've learnt and come up with a Standard Operating Procedure (SOP) not just for healthcare but for our society. The big question is: "What should we be doing as a society to make us better?" We've lost the plot to some degree because we make 90 per cent of what we produce for our entertainment rather than our wellbeing.' SOP refers to 'the simplest, most effective way of doing anything, broken down into simple individual steps'.</p>
2010	Inventor Ray Avery 2010 New Zealander of the Year (Avery, 2010: 214)	<p>'Unlike many other organisations, when we devise our products we take the anthropological point of view and watch people to see what they really need. A lot of inventors start at the other end and say, "How can we find some technology and make something sexy, and how can we sell it to somebody?" That doesn't get you an incubator. That gets you an Xbox. You can make money either way, but I would rather take the way that improves the human condition.'</p>

3. Strategy

When you have a clear vision of where you want to go, and the landscape you need to traverse, it is timely to focus on designing the optimal strategy. This section begins with an outline of Leon Fuerth's concept of forward engagement; and how it enables us to respond to weak signals before they become big problems or missed opportunities.

We also draw on the work of Professor Robert Simons who developed seven strategy questions, the last of which particularly resonated with the team – what strategic uncertainties keep you awake at night? We conclude with Sir Michael Hill, a great believer in long-term, goal-driven strategy development.



Creating intelligent countries through forward engagement

Originally published in *The Futurist*. Used with permission from the World Future Society (www.wfs.org).



Leon Fuerth has developed the concept of 'forward engagement' as a way for countries to become more 'intelligent' through the application of a formal foresight system. Creating intelligent countries is not about raising the Intelligence Quotient (IQ) of the population, but raising the National Intelligence (NI) of a country by equipping its institutions with the necessary capacity to build foresight in order that a country can survive uncertainties and respond effectively to opportunities.

Creating Intelligent Countries through Forward Engagement

By Wendy McGuinness

Leon Fuerth is a man who does not like surprises. A former National Security Adviser to Vice President Al Gore, he explained how during the Clinton/Gore era he noticed a significant change in the landscape, not only in terms of velocity and trajectory, but also in terms of complexity. He noted, for example, how no one in the United States had foreseen the debate about genetically modified food, and as a consequence the United States was unprepared for the European Union response.

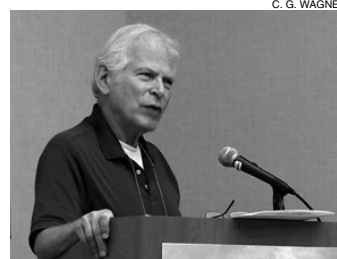
He wondered, "Did Moore's law also relate to the compilation and handling of data?" In which case, does the United States need a new form of intelligent system to cater for this new environment?

Fuerth had been impressed by the application of "forward deployment" by the military, and questioned whether this concept could form part of the solution when applied to the nonmilitary sector. "Forward engagement" seemed to fit the job description—

using a combination of soft and hard power to respond to emerging issues early, thus delivering big results for emerging issues at low costs.

But this was not the whole solution. Fuerth noted that the previous approach was based on at least three broad assumptions: that issues could be assessed in isolation, along linear lines, and that a clear end point did exist. Today, the contrary view exists. Issues tend to have a deeper context, are more uncertain (small changes can have big effects), are more integrated, and, rather than disappear from view, their importance tends to ebb and flow over time.

Fuerth puts forward three components necessary to create an intelligent system. First, there needs to be a formal foresight system for the whole of government; national security can no longer be seen in isolation. Second, there must be a networked approach to the formulation and execution of the policy; in other words, a flatter and faster



Leon Fuerth, former adviser to Vice President Al Gore, describes the need for "forward engagement" in governance.

response by delegating decision making further down the ranks. Lastly, and most importantly, countries need formal feedback loops, so that decision makers can learn from both their successes and their failures. See www.forwardengagement.org.

Wendy McGuinness is the founder of the Sustainable Future Institute, Wellington, New Zealand, www.sustainablefuture.info.

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As economist C. Blackman notes below, there has been a recent revival of foresight programmes in governments around the world that see the value of investing in long-term thinking. The following is a sample of six countries that are engaging in strategic foresight at a national level. These have been included to inspire thought and discussion about what is possible with strategy. They represent the inclusion of strategy in a variety of different ways, and it is interesting to consider how these examples could be applied to New Zealand.

After the wilderness years of the 1980s and much of the 1990s, governments are again showing serious and increasing interest in futures research and thinking. This extends far beyond the technology foresight programs which have been established in many countries in recent years (and of which I think it is fair to say those at the centre of government remain highly sceptical). Rather, there is a renewed desire at the heart of government to assess whether and how futures thinking and foresight can be of more help right across government departments: what machinery could be there at the centre of government that would help manage risk better ... Or seize opportunities ...

(Blackman, cited in Conway & Stewart, 2004: 17)



Intelligent countries

China

China is recognised for its strategic planning, having published the first of its five-year plans in 1953. The draft of China's twelfth five-year plan has recently been released and given the size of the Chinese landmass, population and economy, paired with current global issues, the content of these plans has become increasingly important. China's five-year plans are essentially economic development strategies, but the most recent plan has a focus on sustainable growth, emphasising issues of pollution and waste whilst championing renewable technologies. The twelfth plan is being hailed as the country's greenest approach to strategy yet, indicating that China's attitudes towards environmental issues may have turned a corner (Watts, 2011). Steps have already been taken towards greening China, and commentators have noted that this strategy has the potential to cement China's position at the forefront of sustainability, ahead of Europe (Shin, 2011; Willis, 2011). This could provide global benefits if other countries respond by adopting sustainable strategies to compete with China, illustrating the potential impact of a strong national strategy.

The Republic of Korea

In 2008 the Republic of Korea announced its national strategy for low carbon, green growth, and in 2009 unveiled a five-year plan for implementing this strategy. A budget of US\$83.6 billion was allocated to transform the strategy document into clear policy initiatives that facilitate green growth (UNEP, 2010: 6). Like China, Korea has a history of thinking about strategy through five-year plans, which were used in the Republic between 1962 and the mid-1990s (Jones & Yoo, 2010: 17). And similarly, Korea is another example of a nation pushing a sustainable strategy ahead of others. As the United Nations reported in 2010:

One of the interesting, but least reported, aspects of the current economic recovery efforts is that over two-thirds of global green stimulus has in fact been committed by Asia, led by China, the Republic of Korea, Japan, and Australia. (UNEP, 2010: 6)

Remarkably, 80 percent of Korea's economic stimulus package introduced following the 2008 recession was allocated to green measures (ibid.). The Republic of Korea's strategy addresses climate change, energy efficiency, renewables and nuclear energy, transport, cities and fuel efficiency, water and ecological infrastructure, green technologies and policy, fiscal reforms and institutional process and participation. This illustrates how broad and comprehensive such a strategy can be.

Britain

The British government has supported a number of central government foresight and long-term strategy initiatives. The Prime Minister's Strategy Unit was an elite policy unit established by Tony Blair to provide in-depth strategy advice and policy analysis on key issues. According to Tony Blair the Strategy Unit would 'look ahead at the way policy would develop, the fresh challenges and new ideas to meet them' (Blair, 2010: 339). This unit was incorporated into other strategy and policy units following the 2010 election. Another key long-term thinking institute is the Foresight Group. This was established following a government report that recommended significantly changing the government's approach to science and technology. The group's scope has broadened over the years and it now operates through 'projects that set out to investigate the challenges and opportunities arising from emerging areas of science and technology, or that address major issues for society where science and technology have an important role to play' (Foresight, n.d.[a]). According to the Foresight Group, 'The purpose of our futures work is to assist decision makers now to understand how the decisions they make today might affect the future' (Foresight, n.d.[b]).

Finland

Finland has a future-thinking body, the Committee for the Future, within its government structure. The Committee was born out of an acute socio-economic crisis in 1992, and the realisation that Finland lacked central long-term planning. The government responded with a report exploring long-term development trends for Finland. In 1993 the Committee for the Future

was appointed to evaluate this report, and it was subsequently decided that such a report should be published at least once during each electoral cycle to help facilitate parliamentary dialogue about future-related issues (Kostiainen, n.d.). The Committee became a permanent government body in 2000, and today has a strong focus on technological development and the potential impact of science and technology on society. In addition to this, the Finnish government has a Government Foresight Network, a forum for all ministers to share information on future-related, long-term issues (Government of Finland, n.d.).

Singapore

Singapore's government has recently shown great interest in national foresight projects and, like Finland, it has a future-thinking body within its government structure. In 2010 the Centre for Strategic Futures, part of the Strategic Policy Office, was incorporated into the Prime Minister's office. The Centre is the 'focal point' for futures work conducted by Singapore's government (Ho, 2010). Its primary function is to develop the capacity for futures thinking across all aspects of government and increase government awareness and preparedness for the future. Singapore's Deputy Prime Minister, Teo Chee Hean, said 'The centre will develop strategic thinking for long-term planning, including risks and opportunities, for agencies to help with their decision-making' (Goh, 2010). This includes four strategic future thinking and planning roles: (i) challenge conformist thinking, (ii) calibrate strategic thinking processes, (iii) identify emergent risks and (iv) cultivate capacities, instincts and habits (Ho, 2010). This last role illustrates the extent to which the Centre hopes to influence government thinking at all levels.

Brazil

In 2005 an association of Brazilian private sector organisations, the Confederation of National Industries (CNI), began a project to define a coherent economic and social development agenda through strategy mapping with the aim of improving the competitiveness of Brazilian industries. This was the first national level application of the strategic process, which had been undertaken many times at a business level. Fifty business leaders prepared the initial strategy map, which was then distributed to over three hundred people, including employees in the Forum companies, CNI councils and staff. The feedback was used to revise the initial strategy map and develop it into its final state. The final result was the Strategic Map of Industry, which defines objectives and programmes capable of transforming Brazil into a competitive economy (National Confederation of Industry Brazil, n.d.). The entire process was driven by private industry, but it did not take long to have an impact on national and regional politics. Several state governments and administrative departments in Brazil have adopted the strategy. In November 2005, 800 business leaders in Rio de Janeiro began developing a map for the state's own industrial and services development (Johnson, 2006: 9). During the 2006 state elections many candidates embraced the CNI agenda as a basis for their economic and social platforms and a number of agendas and long-range plans adopted by state governments stem from the strategy map (Coutinho & Mangels, 2007: 8).

Things to think about:

- Do you consider New Zealand an Intelligent Country?
- Have we developed the capacity for foresight in central government?
- Is there room for improvement, and how could this be executed?





Long-term thinking in government

Adapted from SFI Report 11 (2011) p. 11.

Statement of the Long-term Fiscal Position

The New Zealand government's primary instrument to progress long-term thinking is the Statement of Long-Term Fiscal Position (LTFP). Under the Public Finance Amendment Act 2004 (PFAA), a report on New Zealand's long-term fiscal position (which looks out 40 years or further) must be produced by the Treasury at least every four years. The statement is intended to lead to a comprehensive reporting of the issues that could adversely affect a prudent level of net worth. For example, it may provide information on the fiscal consequences of projected demographic changes such as an ageing population, and increases in healthcare expenditure. The PFAA does not specify the analytical tools to be used in formulating the Statement on the Long-Term Fiscal Position. However, the use of intergenerational accounts included in the Guide to the Public Finance Act (2005) raises the idea that the scope could be very wide and its use very important for long-term policy cohesion. The first of these reports was published in 2006. The second, published in 2009, begins by stating:

This Statement is about New Zealand's long-term fiscal outlook – the government's spending and revenue – and what drives it. It is also about the country's future and the big issues the public and government are going to have to think about if we want to maintain or improve our living standards and public services. (Treasury, 2009: 5)

The 2009 statement discusses demographics, changes since the 2006 statement, and models used to examine the fiscal outlook and sustainable debt, and concludes with options and choices for economic policy. As the first LTFP published since the 2008 recession, the report is notable for its honesty and desire to engage the general public in a wider debate

about the future of New Zealand and the decisions that need to be made now. In its overview of the current fiscal landscape, the report notes:

Our experience of the past 12 months shows that there is a lot we need to think about ... Three years and one recession [after the 2006 report] we are facing that future now ... The government's accounts are already in significant deficit and these are forecast to last for a few more years yet. A lot of the headroom we had, financially and just as importantly in time, has disappeared. (ibid.)

'This is not a case for despair, but for beginning to act soon.'

The report makes three key points:

1. We need to make choices about what the government buys, total spending and taxes.
2. Growth helps, but it will not completely solve the problem.
3. Early, gradual changes can help. (ibid.: 6–7)

The report concludes by stressing the need to address challenges and concerns in a concerted and rigorous fashion:

This is not a case for despair, but for beginning to act soon. The largest single driver of the fiscal position is the policy choices governments make on behalf of society, which means that we have the power to make the necessary changes. (ibid.: 69)

The Institute is aware of four other instruments that currently exist within the New Zealand government to progress long-term thinking:

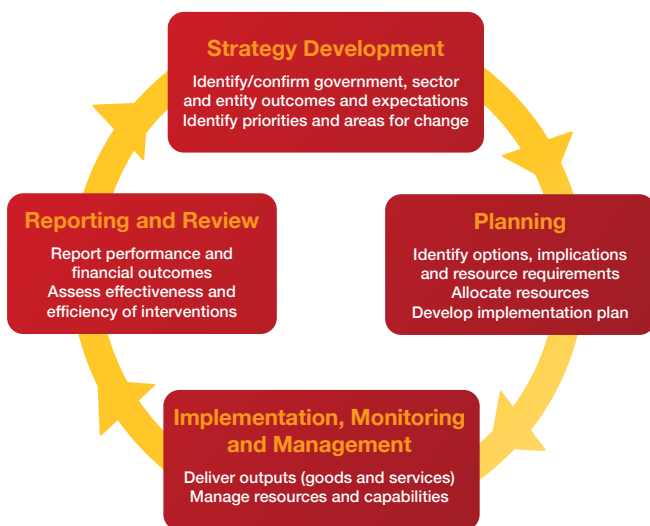
- 1 Statements of Intent
- 2 New Zealand Productivity Commission
- 3 2025 Taskforce
- 4 Central Government Strategies

1. Statements of Intent

Under statute – the Public Finance Act 1989 – all government departments and agencies are required to produce a Statement of Intent (SOI). The following is from *Preparing the Statement of Intent: Guidance and Requirements for Crown Entities* (Treasury, 2010: 7–8).

From the ‘governance and management’ perspective the SOI serves three principal purposes.

First it facilitates the ‘strategic management’ of the entity – in both ‘planning’ and ‘measurement’ senses. The SOI includes the entity’s key outcomes that contribute to government objectives in its sector where appropriate, how it intends to deliver the outputs that will effect those outcomes and what it will do with its internal structures and processes to improve the efficiency and effectiveness of the services it delivers within the context of its outcomes and outputs. It encapsulates the results of the entity’s strategic planning process – a process focussed on the future and the organisation’s place in it.



As well as setting out the entity’s future direction – the SOI needs to allow progress towards the future ‘destination’ to be monitored and measured. It is important that not only is progress measured, but that systems and processes are in place to measure the effects and impacts of that progress. This measurement serves three particularly important purposes:

- *it enables the entity to take ‘ownership’ of the ‘journey’.*
- *it demonstrates to Responsible Ministers and Parliament the progress that is being made in sustaining and lifting the quality of the entity’s performance.*
- *it provides for the opportunity for ‘best practice’ to be identified and shared across the public sector.*

Second, by identifying the actions (short, medium and longer term) that will be taken, and the resources that will be used – and by whom – to give effect to the strategic direction in the SOI, it enables accountability – to Parliament and also of ‘Crown entity management’ to the Board and of the Board to the Responsible Minister(s).

Third, since it will address challenges and risks in the future environment, the SOI will provide an assurance to key stakeholders that issues of planning are addressed.

2. New Zealand Productivity Commission

One instrument that may prove valuable in progressing future-thinking in New Zealand is the recently established New Zealand Productivity Commission, which is expected to be up and running in April 2011. The principal purpose of the Commission is to provide advice to the government on improving productivity in a way that is directed to supporting the overall well-being of New Zealanders, having regard to a wide range of communities of interest and population groups in New Zealand society. The Commission will be headed by four part-time commissioners, and will report to the Minister of Finance. It will have the mandate to conduct and publish its own research into productivity-related issues.

3. 2025 Taskforce

As part of the Confidence and Supply agreement reached between the National and ACT parties immediately after the 2008 election, the government committed to closing the income gap with Australia by 2025, and to establishing an advisory group to report annually on progress towards achieving that goal and make recommendations about how best to achieve it. As a result, the 2025 Taskforce was established in July 2009. A progress report was published on 3 November 2010, and a further report is due on 31 October 2011. The Terms of Reference for the Taskforce state that it will provide advice through an initial report which:

- *Reviews New Zealand’s poor productivity performance, and monitors the productivity gap versus Australia.*
- *Identifies the causes of New Zealand’s poor productivity performance and any barriers to improved productivity.*
- *Provides recommendations to create new or improve existing New Zealand institutions that could have an impact on productivity.*
- *Provides advice on policies and other measures to close the income gap with Australia by 2025. (2025 Taskforce, 2010)*

4. New Zealand Central Government Strategies

In the last 20 years there have been more than 85 major strategy documents signed off by Ministers from more than 25 different Ministries and Departments. These strategies have varied greatly in their scope, scale and depth, and as the Ministry of Health has noted, 'There is no commonly accepted definition of a strategy.' Without a government-wide working definition strategies can vary across organisations, but hold a number of key elements in common:

Strategies can be known by a number of different names – strategic frameworks, actions plans or simply named for the issue they are addressing ... Usually, strategy documents are public statements of intent and a commitment to act in response to an articulated set of issues. They usually emerge from a process of consultation with the sector and the public, and, therefore, there are usually high expectations that the directions outlined in the strategy will be acted upon. (Ministry of Health, n.d.)

The New Zealand Treasury, as one of the central agencies responsible for coordinating and managing public sector performance, has provided some reflection on strategy as it relates to New Zealand government institutions. The Treasury's strategy *Factsheet* (n.d.) defines a 'strategy' as, 'the result of making decisions about what organisations want to achieve in the longer term, and how they are going to achieve it'. This document goes on to note that strategy in government generally involves multiple complex goals and is implemented through a wide range of policy instruments, including laws, taxes and services. The Treasury also offers the following explanation of a strategic aim:

[A strategic aim should be] expressed in terms of a vision of the desired future state; and be as specific as possible and with associated measures and targets (for example, for the Accident Compensation Corporation to reduce the rate of injuries and consequential claims by at least 10% by 2009). Long-term goals and medium-term objectives associated with a strategy should also come with action plans realistic for its implementation. The balance between an immensely detailed strategy that cannot adapt to changing circumstances and a vague vision needs to be achieved. Finally, a strategy needs clear monitoring and accountability to be delivered.

'The first question is whether a strategy is wanted, not what strategy is needed. The main purpose is to drive performance by setting goals, aligning actions and gauging progress'
(Treasury, 2006)

The *Strategy Primer* document, prepared by Treasury in 2006 to assist in the evaluation of central government strategies, outlines the key components of a central government strategy:



Major strategies designed to achieve goals and drive performance will:

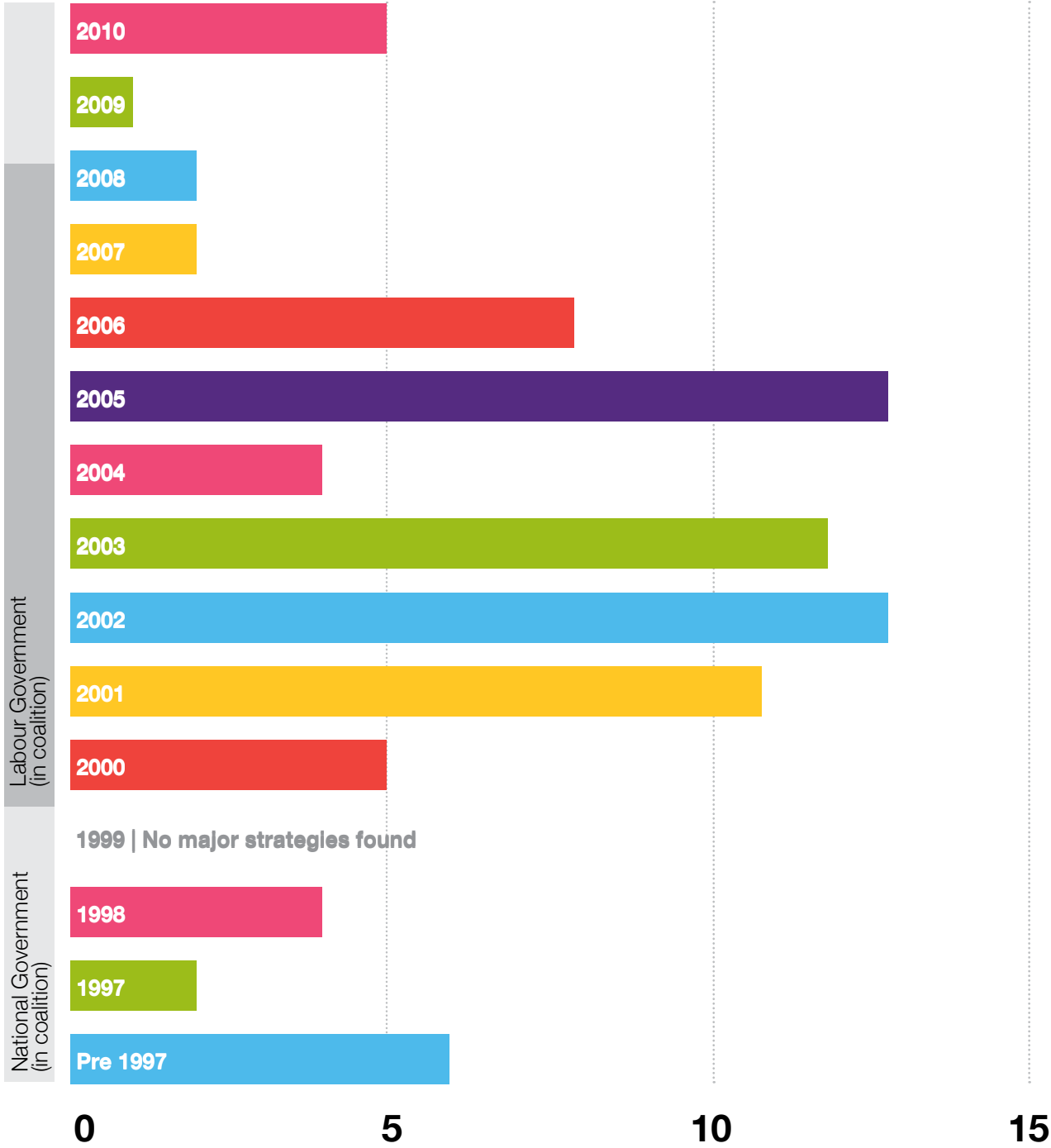
Focus on big, tractable issues that dominate other issues in the sector.

1. Target significant change for New Zealanders (measurable results based on tangible goals).
2. Use evidence to justify the big interventions (e.g. of need, impact and cost-effectiveness).
3. Be clear about what must happen, and when, i.e. present or outline a credible:
 - performance management plan showing when and how major results will be demonstrated;
 - implementation plan and budget covering delivery and performance measurement outputs;
 - risk management plan showing how major constraints and risks will be managed.
4. Lay out clear governance, assessment and feedback processes to adjust the plan.

Major New Zealand central government strategies



This graph shows 88 major strategies from 1990 to 2010 identified by the Institute. A strategy is considered major if it is signed off by a Minister of the Crown.





Seven Strategy Questions

Harvard Business School Professor Robert Simons describes how successful business strategy depends not on having all the right information, but on asking the right questions. In his recent book *Seven Strategy Questions: A simple approach for better execution*, he argues that in order for a company to make the most of its competitive strategy it has to constantly be asking the right questions – see below. On the right we have applied these questions to New Zealand. Overleaf, we explain how we used the seventh question to form the base of a survey to inform participants of this upcoming workshop.

Who Is Your Primary Customer?

- Does everyone know what your primary customer values?
- How have you organised to deliver maximum value to your customer?
- Have you minimized resources devoted to your other constituents?

How Do Your Core Values Prioritise Shareholders, Employees, and Customers?

- What tough decisions have been guided by your core values?
- Do your core values recognise your business' responsibility to others?
- Is everyone committed to your core values?

What Critical Performance Variables Are You Tracking?

- What is your theory of value creation?
- What could cause your strategy to fail?
- How do you create accountability for performance?

What Strategic Boundaries Have You Set?

- What are your major reputation risks?
- Does everyone know what actions are off-limits?
- What strategic initiatives will you *not* support?

How Are You Generating Creative Tension?

- How are you motivating everyone to think like winning competitors?
- How do you encourage innovation across units?
- Have committees and dual reporting made your organization too complex?

How Committed Are Your Employees to Helping Each Other?

- What is your theory of motivation?
- How are you creating shared responsibility for success?
- How do your compensation policies affect commitment to help others?

What Strategic Uncertainties Keep You Awake at Night?

- How do you focus everyone's attention on these uncertainties?
- What system do you use interactively to stimulate change?
- How do you encourage bottom-up information sharing?



Who Is a 'New Zealander'?

Do all New Zealanders know what our primary values are?
How have we organised government to deliver maximum value to all New Zealanders?
What are our primary values in contrast to our secondary values?

How Do the Core Values of New Zealanders Prioritise Investment, Welfare, Education, Resource Use and Cultural Identity?

What tough decisions have been guided by our core values?
Do our core values recognise our responsibility to others?
Is everyone committed to our core values?

What Critical Performance Variables Is the Government Tracking?

Is it clear how the government's theory of value creation acts in practice, and how the different variables fit together? Do we have clarity over our current strategy?
What could cause our strategy to fail? How do you create accountability for performance?

What Strategic Boundaries Has the Government Set?

What are the major risks to our reputation?
Does everyone know what actions are off-limits?
What strategic initiatives will New Zealand *not* support?

How Is the Government Generating Creative Tension?

How are we motivating all New Zealanders to think like winners?
How do we encourage innovation across society?
Have committees and dual reporting made our country too complex?

How Committed Are New Zealanders to Helping Each Other?

What is our theory of motivation?
How are we creating shared responsibility for success?
How do our compensation policies affect our commitment to help others?

What Strategic Uncertainties Keep New Zealanders Awake at Night?

How do we focus everyone's attention on these uncertainties?
What system do we use interactively to stimulate change?
How do we encourage bottom-up information sharing?



Think Bigger

Sir Michael Hill in *Think Bigger*, 2010 (p.17) and *The Dominion Post* (December 31, 2010) puts forward his insights into goal-setting.

Sir Michael Hill is one of the best examples of a New Zealand entrepreneurial success story as the founder of Michael Hill Jeweller which now has more than 250 outlets across New Zealand, Australia, Canada and the United States. The following excerpts illustrate Sir Michael's attitudes about how to reach goals.

Sir Michael Hill wrote the following coda for people with no time to read:

**‘People who have a
30-year goal will achieve
results far quicker than
they imagine.’**

Very few people know where they are going in the long term. Result: they don't achieve their full potential. People who have a 30-year goal, on the other hand, know exactly where they are going and will probably get there far quicker than they imagine. I break it down into three phases so it's easier to handle. Every 10 years is a stepping stone for raising the bar yet again. So every 10 years your expectations and thoughts will move you closer to your long-term 30-year target.

- choose a goal
- believe in it
- take care of yourself
- think bigger
- repeat

In the *Dominion Post*, Sir Michael Hill states:

I'm absolutely convinced that if someone has a long-term goal and writes it down, and starts thinking about it, then everything will gravitate towards that thought. So what ever we think will actually just about come true. If one doesn't have a long-term goal, then, of course, we're just in the wash of everyday and the wills and whims and the ups and the downs and that can be quite unpleasant – I found that very unpleasant for 40 years until I saw what to do.

Three Questions Survey



Why Strategic Uncertainties?

In March, the Institute conducted a short three-question survey asking New Zealanders to reflect on strategic uncertainties facing them. We felt that this would provide an invaluable insight for individuals, businesses and government agencies wishing to understand the challenges ahead. It is also an opportunity to reflect and develop ideas about how New Zealanders might explore and invest in the future of our people. The results are available in the Institute's Working Paper 2011/13 and Report 13.

What Strategic Uncertainties Keep New Zealanders Awake at Night? Question One: What strategic uncertainties keep you awake at night with regard to the future of your business? Question Two: What strategic uncertainties keep you awake at night with regard to the future of Christchurch? Question Three: What strategic uncertainties keep you awake at night with regard to the future of New Zealand?

New Zealanders' thoughts on Execution

n.d.	Proverbs	<p>Whāia e koe ki te iti kahurangi; ki te tuohu koe, me he maunga teitei. Seek the treasure you value most dearly; if you bow your head, let it be to a lofty mountain.</p> <p>Puraho māku, kei ngaure o mahi. To catch a fish you must place your basket in the water.</p> <p>Mauri mahi, mauri ora – Mauri noho, mauri mate. Industry begets prosperity – Idleness begets poverty.</p> <p>He rau ringa e oti ai. With many hands the job will be finished.</p>
1921	Farmer William Herbert Guthrie-Smith <i>Tutira: The Story of a New Zealand Sheep Station</i> (McGill, 2004: 113)	<p>'New Zealand of all countries in the world certainly is the land where after a stumble a man can most easily pull himself together again.'</p>
1961	Writer Barry Crump (McGill, 2004: 64)	<p>'Never tell them you can't do a thing. Get stuck in and have a go. By the time they find out you've never done it before, you're doing it.'</p>
1977	Climber Sir Edmund Hillary (McFadden, 2008)	<p>'I've always hated the danger part of climbing, and it's great to come down again because it's safe ... But there is something about building up a comradeship – that I still believe is the greatest of all feats – and sharing in the dangers with your company of peers. It's the intense effort, the giving of everything you've got. It's really a very pleasant sensation.'</p>
2001	Chemist Alan MacDiarmid One of three recipients of the Nobel Prize for Chemistry in 2000 (Weir, 2007: 63 & 136)	<p>'The total population of New Zealand is less than that of the city in which I live [Philadelphia], and yet New Zealand and New Zealanders have excelled and risen to the top throughout time. You hear <i>much</i> more about what New Zealanders are doing than [what] the people of Philadelphia [are doing].'</p>
2001	Explorer Sir Peter Blake Last log entry (McGill, 2004: 35)	<p>'The hardest part of any project is to begin.'</p>
2010	Inventor Ray Avery 2010 New Zealander of the Year (Avery, 2010: 126)	<p>'There is an old joke about some Australians and some Poms landing on an island populated by beautiful girls. The Australians start fighting over the girls but the Poms don't. They stand there waiting to be introduced. You can't initiate anything in England. You have to wait to be asked.</p> <p>'New Zealand couldn't be more different. Information is shared. It's an open-source country. In England, the plumber always comes with a mate and the first thing they do is light the gas to make themselves a cup of tea. In New Zealand a plumber once turned up at my house, had a look at my problem and said, "You don't really need me. I can show you how to fix that."'</p>
2010	Politician Bill English Deputy Prime Minister and Minister of Finance (English, 2010)	<p>'National's six-point plan for a stronger economy focuses on creating sustainable jobs, boosting incomes, and raising living standards for families. We are tilting our economy towards savings, investment and exports, and away from borrowing, consumption, and property speculation.</p> <p>Our six-point plan for a stronger economy:</p> <ol style="list-style-type: none">1. A growth enhancing tax system2. Better, smarter public services3. Lifting education and skills4. Boosting infrastructure5. Business innovation and trade6. Cutting red tape and regulations.'
2010	Inventor Ray Avery 2010 New Zealander of the Year (Avery, 2010: 100)	<p>'The Medicine Mondiale Liferaft incubator will save thousands, if not millions, of lives and is a fraction of the cost charged for current models.'</p>

4. Execution

This section aims to bring the focus back to performance. All the energy and resources used in clarifying our vision, gaining foresight, and developing an optimal strategy is squandered if we fail to execute the strategy properly. We therefore liked Randall Bell's achievement cycle; it reminds us that it is often the first setback that tests the clarity of the vision, the quality of the foresight and the design of the strategy.

Critical to effective execution, is measuring performance, which is why we showcase the recent work of Statistics New Zealand. Most importantly, execution is about communication, which is why we finish with Chip and Dan Heath's set of clever principles to make it stick!

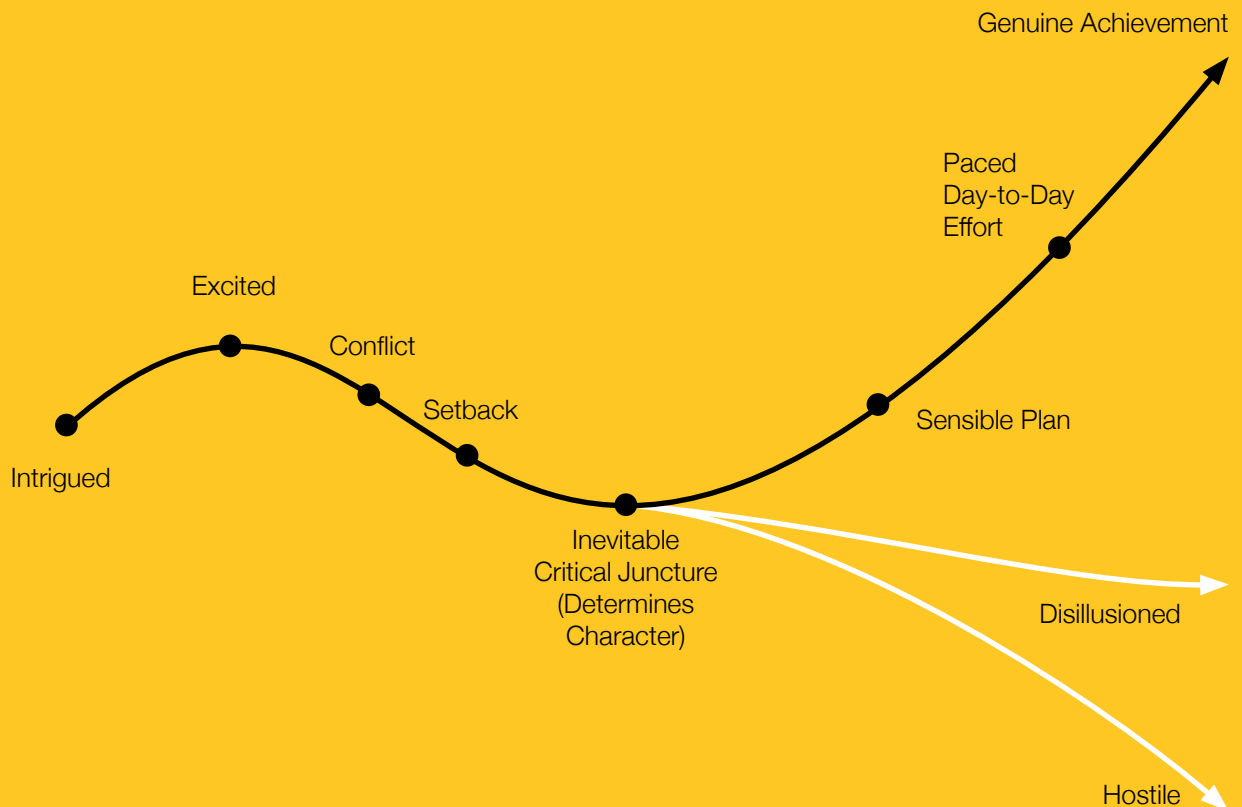


Achievement Cycle

Randall Bell in *Strategy 360* put forward the following path to achievement (p. 186).

This concept should help you understand at which point the execution of a strategy fails. By having awareness of this point, you can prepare to overcome it and achieve your goals.

Randall Bell wrote that potential achievements often start with intrigue and growing excitement about a situation. After committing to the project, conflicts and setbacks often occur. There is an inevitable point in the process where commitment is tested. If the individual is truly committed they will look at the situation sensibly and put into place a realistic day-to-day plan which will lead to genuine achievement. If the individual fails at the juncture, however, disillusionment and hostility may occur instead.



Progress toward sustainable development

Information drawn from Statistics New Zealand's *Key Findings on New Zealand's Progress using a Sustainable Development Approach* (2010).



How well do we live?



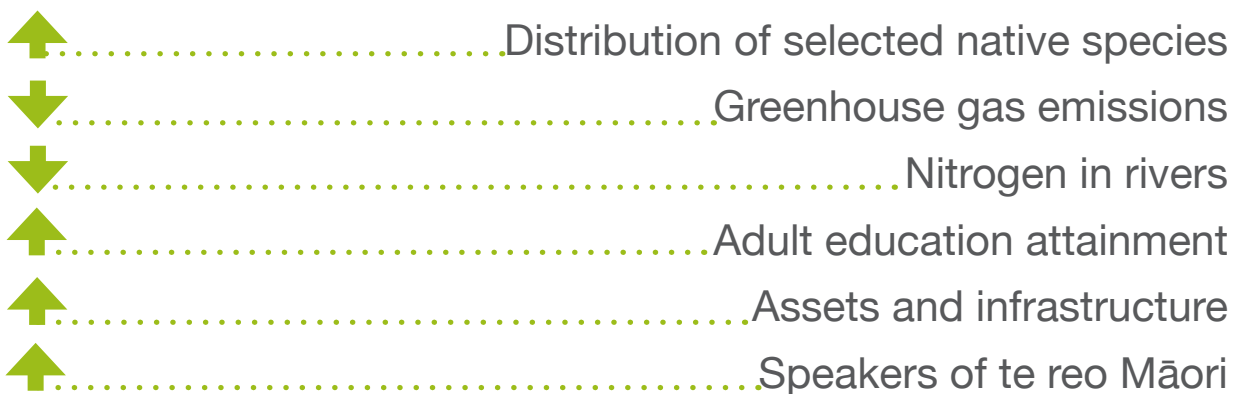
How well are resources distributed?



How efficiently are we using our resources?



What are we leaving behind for our children?



↓ downward target trend ↑ upward target trend

'The bestselling business book of the last decade has been a thin little volume with a strange title. Spencer Johnson's *Who Moved My Cheese?* is a business fable that has sold millions of copies around the world. The book tells the tale of Hem and Haw, two mouse-like critters who live in a maze and love cheese. One day, after years of finding their cheese in the same place, Hem and Haw awaken to find their previous cheddar gone. Somebody, yes, has moved their cheese. Hem and Haw react differently to this discovery. Hem, the whiny mouse, wants to wait until somebody puts the cheese back. Haw, the anxious but realistic mouse, wants to venture into the maze to discover new

cheese. In the end, Haw convinces Hem that they should take action to solve their problem rather than wait for the solution magically appear. And the mice live happily ever after (or at least until their cheese moves again).

CHANGE

'The moral of the story is that **change is inevitable, and when it happens, the wisest response is not to wait or whine but to suck it up and deal with it.**

In his book, Daniel Pink discusses how the conceptual age, marked by the introduction of Asia and the automation, has made the metaphor of the maze inappropriate. Instead, he proposes that the Labyrinth better reflects the prosperity and abundance of our times. Contrasting the two, Pink explains the maze is a series of compartmentalized and confusing paths, most of which lead to dead ends. A labyrinth is a spiral walking course; your goal is to follow the path to the centre, stop, turn around, and walk back out, all at whatever pace you choose. Mazes engage the left brain; labyrinths fire the right brain. The labyrinth, Pink argues, is a more effective metaphor for understanding our greater focus on meaning and spirituality.

The Mice and the Cheese

Daniel Pink proposes the following concept in *A Whole New Mind: Moving from the information age to the conceptual age*, 2005 (pp. 218–219).



'The bestselling business book of the last decade has been a thin little volume with a strange title. Spencer Johnson's Who Moved My Cheese? is a business fable that has sold millions of copies around the world. The book tells the tale of Hem and Haw, two mouselike critters who live in a maze and love cheese. One day, after years of finding their cheese in the same place, Hem and Haw awaken to find their precious cheddar gone. Somebody, yes, has moved their cheese. Hem and Haw react differently to this discovery. Hem, the whiny mouseling, wants to wait until somebody puts the cheese back. Haw, the anxious but realistic mouseling, wants to venture into the maze to discover new cheese. In the end, Haw convinces Hem that they should take action to solve their problem rather than wait for the solution magically appear. And the micelings live happily ever after (or at least until their cheese moves again).'

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Delivering Ideas that Stick

Chip and Dan Heath's Success Model at www.madetostick.com in a New Zealand context.

The communication of ideas to others is a key part of executing a strategy. This concept offers techniques for making information stick with audiences. Try and use some of these techniques next time you are sharing your strategies and ideas.

A sticky idea is understood, it's remembered, and it changes something. Chip and Dan Heath found that ideas that stick have six traits in common. If you make use of these traits in your communication, you'll make your ideas stickier. (You don't need all six to have a sticky idea, but it's fair to say the more the better!)

PRINCIPLE 1



SIMPLE

Simplicity isn't about dumbing down, it's about prioritizing. What's the core of your message? Can you communicate it with an analogy or high-concept pitch?

PRINCIPLE 2



UNEXPECTED

To get attention, violate a schema. To hold attention, use curiosity gaps. Before your message can stick, your audience has to want it.

PRINCIPLE 3



CONCRETE

To be concrete, use sensory language. Paint a mental picture. Remember the Velcro theory of memory – try to hook into multiple types of memory.

PRINCIPLE 4



CREDIBLE

Ideas can get credibility from outside or from within, using human-scale statistics or vivid details. Let people 'try before they buy'.

PRINCIPLE 5



EMOTIONAL

People care about people, not numbers. Sometimes the hard part is finding the right emotion to harness. Understand your audience.

PRINCIPLE 6



STORIES

Stories drive action through simulation (what to do) and inspiration (the motivation to do it).

S

Song



HONE TUWHARE was an award-winning poet.
Much of his written work was motivated by political and social impulses.

Alien to the night
are sounds that creep in with the dawn.
At the first awakening,
our voices, as in a hollow tomb
seem quite unreal
We laugh at the strangeness
and shatter the spell with a rude noise
Yes mate!
The noise is real enough.
It's really us.

We paw the remnant of the night
from our eyes
And rise to find that others
are already abroad ...
In the fields, the hill, the factories
roads, wharves and offices ...
Creating a bigger human noise.
The defiant noise
of working people—black, white, yellow,
brown, red.
Marching! Clamouring! Demanding!
Listen!

It seems to join
in on common refrain,
A mass chant in unison.
You're through. You're done. You're finished.
Inexorable.
Measured.
Peace, we want,
Bread, we'll have,
Land, we'll take!

We join the stream, swell the sound of
confidence
without demur.
The rough hand of the industrial toiler
the unobtrusive patch in the shiny Sunday
best
of the office worker.
The weather-worn, shapeless cap of an
exultant farm labourer
as it sails through the air
The noise deepens.
Smites the air
like a clap of thunder.
Shatters the window
of the sleek limousine
The office window of the factory owner
and the bank manager—

Drops
like a noose
on the shoulder of the absentee landlord
and the ex-prince—at play.
Reaches out
like a vice
to disturb the sham world
of the cocktail party and the fashion
gathering.

This sound
will pursue them to a barren island
Haunt them on another Formosa.
Chase them from the face of the earth.
This insistent mighty sound
expresses a real desire.

Already we hear a different noise
The noise of building and construction
The hiss and crackle of the welding rod
laying the foundation of
Socialism
Side by side with the hammer, the saw
and the concrete mixer.
The probing searchlight
of human science
will spurn the bomb-happy path of
the arms manufacturers,
the panic-spreading war-monger.

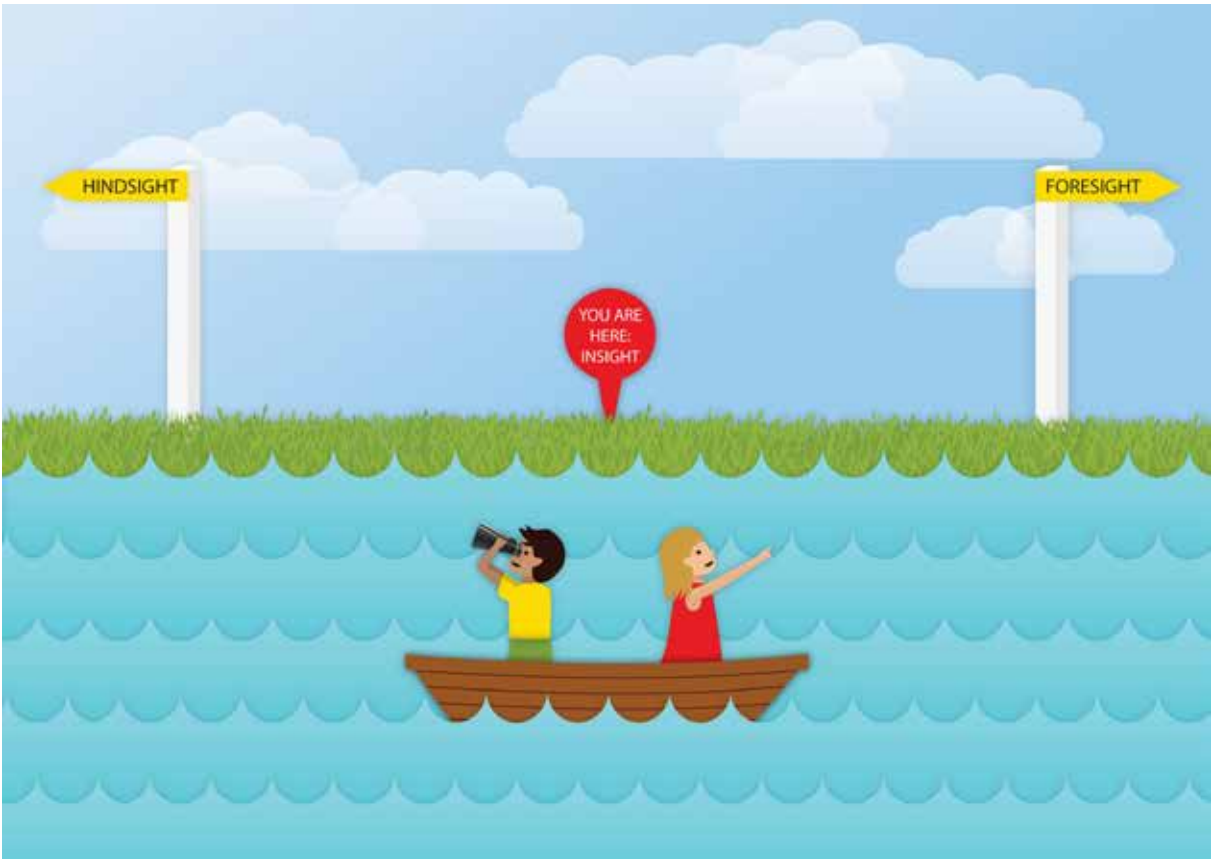
We will turn the arc-light of
Leninism
on the darkness we call ignorance
The sound is deafening.
But listen again.
Can you make out?
It's your voice mate – and
my voice –
and
It's Our Voice!
The sun is really out now.
It's our day –
and we're wide awake!

– Hone Tuwhare, from *Hone Tuwhare: A biography*.
[Emphasis added]

Case Study:

Revisiting Julius Vogel

When presented with a case study, we tend to place ourselves in the role of the decision maker: what is the problem? What information do we need? What are our strategic options? How can we best execute a solution? In this section we take you to 1870, where Julius Vogel had a problem, one that required a very integrated solution.



Case Study: Revisiting Julius Vogel



Exercise: Often we need to make decisions quickly based on insufficient information. The case study below is designed to stimulate discussion around strategy development and execution and provide a shared case study to discuss at the workshop. Frequently, strategy needs to be developed quickly and under pressure by only one or two people. With this in mind, we have called this a 'back of the envelope' exercise, emphasising that although a plan is about operational detail, strategy is about the big picture – how we are going to get from our current position to our preferred position. **Please read the text below and complete the exercise overleaf, using this case study as an example.**

Julius Vogel was a prominent figure in nineteenth-century New Zealand, variously holding the positions of Colonial Treasurer, Postmaster-General, Commissioner of Customs, and later Premier. As such he was a highly influential man, and he provides a good example of the way in which a combination of vision and a sense of urgency can produce foresight and shape strategy. Unfortunately, his story also illustrates the importance of execution, and the potential for failure when execution is not carried through.

Vision

Vogel had a vision. He saw New Zealand as a potential 'Britain of the South Seas', strong both in agriculture and in industry, and inhabited by a large and flourishing population. As he expressed it in a letter to his friend W. H. Reynolds:

I have an absorbing affection for New Zealand, and it is intolerable to me to see its prosperity marred and retarded. – The Statesmen of New Zealand should remember that their work is the heroic one of Colonization – Questions of Whigs and Tories liberals and conservatives are comparatively of little moment to them compared with the one main question of how they can settle in the colony a large happy and contented community.
(Orsman & Moore, 1988: 659)

Foresight

After a period of relative prosperity, by the end of 1860 New Zealand was in a state of economic stagnation. Gold production, formerly a source of considerable wealth, had fallen, and wool prices had slipped. In addition, the New Zealand Wars had created negative impressions overseas. This was not the New Zealand that Vogel envisaged nor was it the right path for New Zealand to be on. He recognised that if business continued as usual, his vision for the country would never be realised.

On his return to New Zealand in February 1870 Vogel worked on a new economic policy. The year before he had promised a comprehensive plan to 'extend the benefits of regular and systematic immigration to the Colony throughout its length and breadth'. ... Working largely on his own, Vogel now evolved a policy of forward planning, a development plan designed to revive the economy and provide the pre-conditions for economic growth. This policy was announced in the financial statement of 1870.
(Dalziel, 1986: 104)

On 28 June 1870 Vogel, by now an influential member of the government of William Fox, summarised his answer to addressing this problem in one sentence:

We recognize that the great wants of the Colony are – public works, in the shape of roads and railways; and immigration ... the two are, or ought to be, inseparably united. (Wilson, 2010)

Strategy

Vogel stated three principles of government policy regarding administration of public works and immigration: (i) both islands would share in the scheme; (ii) there would be no changes in political institutions, and (iii) although the need for colonisation was general, the government realised that conditions throughout the colony varied widely.

As Colonial Treasurer, Vogel proposed that development would be financed by borrowing £10 million on overseas markets. Further provision for the payment of interest charges of 5½ percent was to be made from receipts above working expenses, from railway revenue, and from stamp duty. As security, and to ensure that the provinces would be able to meet the repayments, Vogel intended that New Zealanders should bear a considerable portion of the financial burden. Historian Raewyn Dalziel summarised it this way:

Vogel's [1870] budget put forward a beguilingly simple, yet ambitious scheme to increase the population and revolutionise communications. He began with the assumption that if the economy were to grow the process of 'colonisation' had to be supported by the central government. The fighting appeared to be over; the time had arrived 'when we must set ourselves afresh to the task of actively promoting the settlement of the country'... He did not want to jeopardise the colonisation scheme by proposing political changes but he gave the provinces clear warning that if they obstructed the scheme and forced a choice between it and them he 'would infinitely prefer the total remodelling of those institutions to abandoning that stimulating aid which, as I believe, the condition of the Colony absolutely demands'. (Dalziel, 1986: 104–105)

Execution

Vogel was not good at administration and converting his strategy into his vision proved difficult. In fact, persevering with his plan turned out to be a double-edged sword, and as the Ministry of Culture and Heritage notes:

Vogel's great plan was to borrow heavily to build infrastructure (railways, ports and telegraphs) and to lure migrants. It was controversial, and ended in a recession, but the money and migrants stimulated the economy and created a viable consumer market for producers. (MCH, 2011)

Te Ara: The encyclopedia of New Zealand elaborates, noting that the execution of the public works programme did lead to a significant increase in the population. The census of 1871 (which did not include Māori) recorded a total population of about one-quarter of a million; 10 years later this had grown to half a million. The programme also stimulated a sense of New Zealand as a single nation rather than separate settlements, and led to the abolition of the provinces in 1876 (Wilson, 2010). On the other hand, England initially guaranteed only £1 million when Vogel had already authorised the spending of £4 million on the first stage of his policy, and so in 1870 he travelled to England and the United States to borrow a further £1,200,000 (McLintock, 1966). Before a sustainable boom could happen, overseas borrowing was cut off by an international financial crisis (approximately 1873–79). The New Zealand economy lapsed into a long depression in which borrowing and an associated debt burden (especially on land) became a weight on the economy (Easton, 2010).

Essentially, Vogel's work was visionary, showed great foresight, was strategic but was not precautionary, did not take into account wildcards and, most importantly, was not executed well.

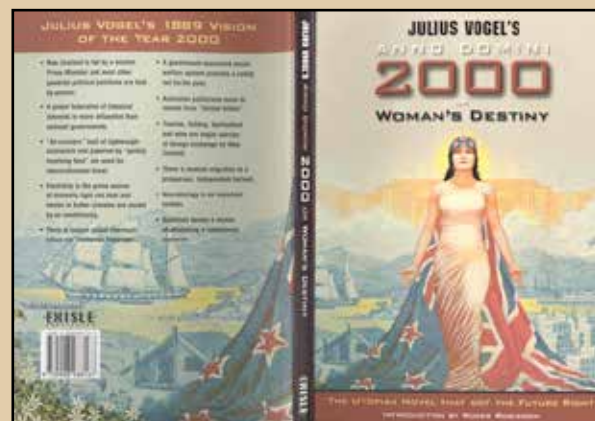
Epilogue

Vogel demonstrates the potential power of a vision, and what can be achieved in an attempt to turn that vision into a reality. He also reminds us that there is room to fall short of that potential. One wildcard, the international financial crisis, brought the country to its knees, but another wildcard, the introduction of exports of frozen meat and chilled butter and cheese, became New Zealand's saviour, turning the country into Britain's farm. Once the economy was firmly based on agriculture, the landscape was transformed from forest to farmland, and the rest, as they say, is history.

It was Vogel's investment in infrastructure that left New Zealand well poised to take advantage of refrigerated shipping. One can only wonder at the possibilities for New Zealand today, had Vogel's execution matched his initial vision.

Vogel went on to be Premier intermittently between 1869 and 1876, but his last days were spent in England, a relatively poor man. Interestingly, in 1889 he wrote *Anno Domini 2000: or Woman's Destiny*, an imaginative and prophetic survey of the future, in which he made a large number of predictions for the year 2000 which have come true, proving his mastery of foresight. The following are quoted on the book jacket:

- New Zealand is led by a woman Prime Minister and most other powerful political positions are held by women.
- A global federation of financial interests is more influential than national governments.
- "Air-cruisers" built of lightweight aluminium and powered by "quickly revolving fans" are used for intercontinental travel.
- Electricity is the prime source of domestic light and heat and homes in hotter climates are cooled by air conditioning.
- There is instant global communication via "noiseless telegram".
- A government-sponsored social welfare system provides a safety net for the poor.
- Australian politicians move to secede from "United Britain".
- Tourism, fishing, horticulture and wine are major sources of foreign exchange for New Zealand.
- There is reverse migration to a prosperous, independent Ireland.
- Neurobiology is an important science.
- Scientists devise a means of unleashing cataclysmic explosion.



Exercise overleaf: In 15 minutes write down what you believe is New Zealand's current vision, foresight, strategy, and how it is currently being executed. What are your insights?

Then repeat the exercise for two alternative futures (make them contrasting) and then your preferred future.

1870

actual

2011

probable (current)

Vision Foresight

For New Zealand to be like Mother England but better.

Critical Issues:

Unemployment increasing, gold prices falling, wool prices falling, national and regional disconnect, immigrants apprehensive due to 'Māori Wars'; transport throughout the country difficult.

These things are happening, so something big needs to be done. What can I do?

Strategy

Build railways, roads, and ports, employ Māori as labourers to develop infrastructure, advertise overseas particularly in the UK for immigrants, borrow large amounts of money from the UK and the USA.

Execution

What obstacles might we encounter?

Wild Card 1: international economic recession hits about 1880 and pushes New Zealand into long depression.

Wild Card 2: refrigeration by ship enables New Zealand to deliver meat and dairy products to Britain.

Insights

Beware Wild Cards, crises can be used to change institutions and policy quickly. Designing a strategy is not enough — this strategy needs to be connected to the process of implementation in order for it to work. The power of the individual and the importance of pursuing one's vision.

2011

possible
(Alternative A)

2011

possible
(Alternative B)

2011

preferred

A yellow sticky note with horizontal lines, positioned at the bottom of the page. The lines are evenly spaced and extend across the width of the note.

‘ Only a crisis –
actual or perceived –
produces real change.
When that crisis
occurs, the actions
that are taken
depend on the ...

... ideas that are
lying around?

– *Milton Friedman*

DEFINITIONS

What is the difference between ...

We came across this website (www.differencebetween.com) which explores the differences between key terms that often lead to confusion and a lack of clarity. This seemed a great idea, so we looked a bit further afield and investigated a few more differences.

EFFICACY, EFFICIENCY & EFFECTIVE

(Adapted from Merriam-Webster, 2011)

Efficacy is the power to produce an effect – does something have the capacity to work or not? Efficiency is not whether it works, but how well it works. In physics, this is the ratio between the useful energy delivered by a dynamic system and the energy supplied to it. Finally, if something is effective, it produces a decided, decisive or desired effect.

TOPIC & IDEA

(Adapted from Difference Between, 2011)

The topic is supposed to be in the simplest form. It should only be composed of one word if possible. The main idea is the most general idea that the writer wishes to convey. It is composed of an entire phrase or sentence expressing the main thought of the sentence or paragraph. Examples of main ideas are: dogs can be trained, cats have nine lives, your mistakes caused the team's defeat, and many others. Main ideas are stated using full statements.

PROBLEM-SOLVING & DECISION-MAKING

(Adapted from Difference Between, 2011)

Problem-solving is solving a problem; meaning, it is a method wherein a group or an individual makes something positive out of a problem. Decision-making, on the other hand, is a process that is done many times during problem-solving. Decision-making is the key that will help in reaching the right conclusion in problem-solving.

CIVIL RIGHTS & CIVIL LIBERTIES

(Adapted from Difference Between, 2011)

Civil liberties are the basic rights guaranteed to all citizens in a country such as the right to privacy, freedom of speech, freedom from slavery and forced labour, right to a fair trial, right to marry, right to vote, right to life, freedom from torture, right to liberty, freedom of conscience, freedom of assembly, and freedom of expression. Civil rights mean being free from discrimination or unfair treatment, and pertains to equal treatment of an individual irrespective of age, gender, race, and disability.

INVENTION & INNOVATION

(Adapted from WebFinance Inc., 2011)

An invention is a new scientific or technical idea, and the means of its embodiment or accomplishment. To be patentable, an invention must be novel, have utility, and be non-obvious. To be called an invention, an idea only needs to be proven as workable. An invention is often created by one or a small group of people in isolation. However, to be called an innovation, an invention must be replicable at an economical cost, and must satisfy a specific need. That's why only a few inventions lead to innovations because not all of them are economically feasible. Innovation is the process by which an idea or invention is translated into a good or service for which people will pay. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different value from resources, and encompasses all processes by which new ideas are generated and converted into useful products. It often requires a team approach.

DATA, INFORMATION & KNOWLEDGE

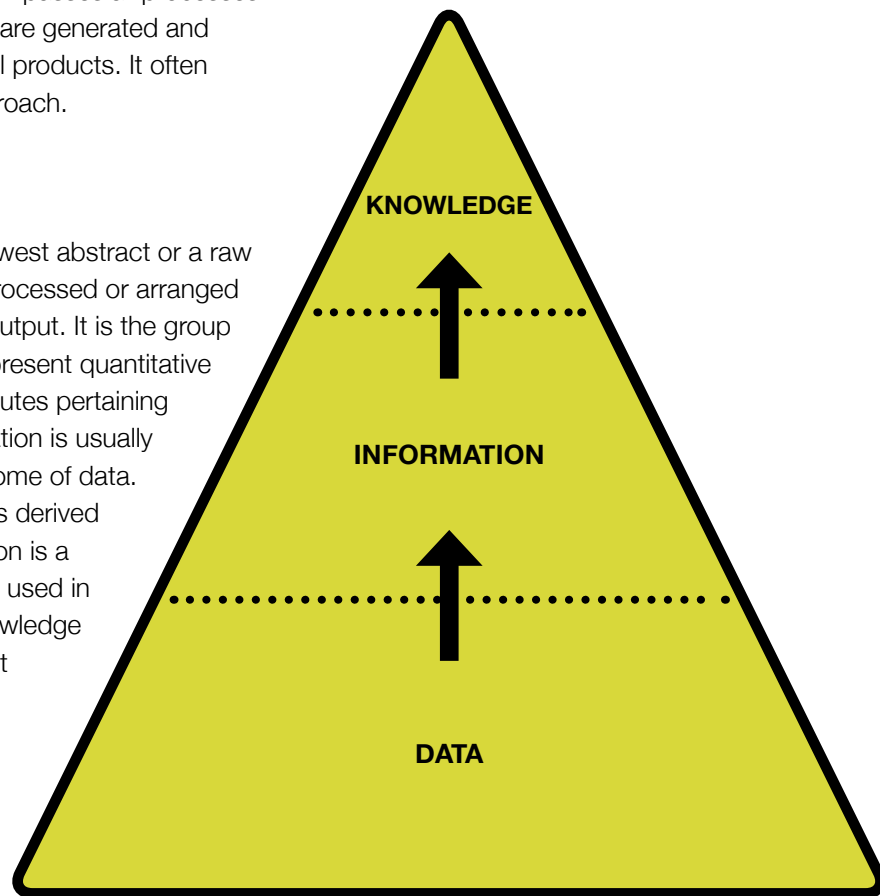
(Adapted from Difference Between, 2011)

Data refers to the lowest abstract or a raw input which when processed or arranged makes meaningful output. It is the group or chunks which represent quantitative and qualitative attributes pertaining to variables. Information is usually the processed outcome of data. More specifically, it is derived from data. Information is a concept and can be used in many domains. Knowledge is the final product. It is new or improved understanding, formed from analyzing the information from the data.

URGENT & IMPORTANT

(Adapted from Difference Between, 2011)

Urgent tasks are mostly tasks that have an immediate deadline or a deadline that has passed. It is not necessary that these urgent tasks should be time consuming or effort-intensive. It is also not necessary that these tasks will have a significant impact on your life. Important tasks, on the other hand, need not have a deadline looming. They are important because of the impact they can have on a person's life in the long term.



Backcasting
(WFS, 2011)

‘A method of forecasting or planning in which an event is posited as having occurred in the future. The question then becomes, How did this event come to be? ... Backcasting offers a way to get a group to envision a desirable future and then determine what must happen in order for that goal to be reached.’

Bilateral agreement
(Travel Industry Dictionary, 2007)

‘A treaty or other agreement, usually between sovereign nations, detailing their mutual understanding, policies, and obligations on a particular matter, such as trade or airline landing rights.’

Counterfactual
(Princeton University, 2011)

‘Contrary to fact[,] going counter to the facts (usually a hypothesis).’

Cycle
(WFS, 2011)

‘A regular recurrence of some condition, such as the coming of night after day. Forecasts can often be made on the basis of knowledge of cycles.’

**Delphi technique
(or method)**
(WFS, 2011)

‘A method of polling people in order to produce a group judgment. Typically, this might involve soliciting individually the judgments of experts [on] a possible future event. The judgments of the different experts would later be combined to create a consensus view. The Delphi technique keeps individual responses anonymous so that social influences (prestige of a certain participant, shyness of certain participants, etc.) are minimized. However, the Delphi administrator can rephrase questions to the group to refine the consensus judgment.’

Discontinuity
(WFS, 2011)

‘A relatively abrupt change in the nature or direction of something. If the growth of a city’s population suddenly stopped and population began declining, we could say that a discontinuity has occurred.’

Discounting the future
(WFS, 2011)

‘Reducing the perceived value of a benefit because it will not be received until sometime in the future. The more distant the anticipated reward or punishment, the more the benefit (e.g. a large sum of money) will likely be ignored in decision making.’

Drivers
(Merriam-Webster, 2011)

‘Something that provides either impulse or action; e.g. a driver in the economy.’

Dynamics
(Meadows & Wright, 2008: 187)

‘The behaviour over time of a system or any of its components.’





'An anti-utopia or an imaginary society with many undesirable features. George Orwell's novel *Nineteen Eighty-four* described a dystopia.'

Dystopia
(WFS, 2011)

'The state or quality of being efficient. [In physics terms,] the ratio of useful work performed to the total energy expended.'

Efficiency
(Deverson & Kennedy, 2005: 343)

'A large distinct period of time, a major division of time.' This can be 'a period marked by distinctive character or reckoned from a fixed point or event.'

Era
(Deverson & Kennedy, 2005: 362;
Princeton University, 2011)

'A process directed at or concerned with something specified.'

Exercise
(Deverson & Kennedy, 2005: 372)

'The growth in the value of a quantity, in which the rate of growth is proportional to the instantaneous value of the quantity; for example, when the value has doubled, the rate of increase will also have doubled. The rate may be positive or negative ... very rapid growth.'

Exponential growth
(Wiktionary)

'The belief that future events are determined by external forces rather than human choices.'

Fatalism
(WFS, 2011)

'Material or information that enters or leaves a stock over a period of time.'

Flow
(Meadows & Wright, 2008: 187)

'A statement that something will probably happen in the future. Forecast implies less certainty about the event's occurrence than prediction, but the terms are often used interchangeably.'

Forecast
(WFS, 2011)

'A forecast that tends to make itself come true. For example, a forecast for rapid growth of a certain city may encourage businesses to locate there, thus causing the growth that was [forecast].' (See *Prediction* p. 96)

Forecast, self-fulfilling
(WFS, 2011)

'A forecast that tends to reduce its own likelihood of coming true. For example, a forecast of a shortage of teachers in five years may encourage many college students and others to seek teaching certification, thus negating the forecast of a shortage.'

Forecast, self-negating
(WFS, 2011)

Forecasting, judgmental
(WFS, 2011)

'Forecasting based on the forecaster's personal knowledge or expertise rather than a special forecasting methodology ... Judgmental forecasting is [often] expected of physicians, lawyers, accountants, and other professionals functioning as experts in particular areas of concern.'

Foresight
(WFS, 2011)

'The ability to anticipate and assess future events as well as to strategise to avert future dangers and grasp future opportunities.'

Forward-looking statement
(Scott, 2003)

'A projected financial statement based on management expectations. A forward-looking statement involves risks with regard to the accuracy of assumptions underlying the projections. Discussions of these statements typically include words such as estimate, anticipate, project, and believe.'

Future (adjective)
(WFS, 2011)

'Belonging to that part of time that has not yet occurred but that will occur.'

Future (noun)
(WFS, 2011)

'This term may refer to any of the following:

'The period of time following the present moment and continuing on indefinitely. "The polar ice caps may shrink in the future."

'The situation or condition of someone or something in the future. "The future of biotechnology looks bright."

'One of a plurality of possible future conditions or situations. These are sometimes described as alternative futures or just futures. For instance, three futures may be envisioned for the giant pandas: extinction, revival in the natural environment, or domestication and continued existence in zoos and private preserves.'

Future, alternative
(WFS, 2011)

'One of a number of futures that may be envisioned for a person or thing. The term alternative futures stresses that there is not a single inevitable future toward which people move through time, but a number of possible futures that are yet to be decided. In our thinking about the future of something, it is often useful to describe several mutually exclusive scenarios. These alternative futures help to clarify the options available to the decision maker(s).'





'The disorientation caused by rapid social change. The term was popularized by Alvin Toffler in a 1970 book with that title.'

Future shock
(WFS, 2011)

'The study of future possibilities. The term is one of many that are used for what futurists do and is most popular in academia.'

Future(s) studies
(WFS, 2011)

'A person who engages in a great deal of futuring or otherwise demonstrates a serious rational or scientific concern for the future.'

Futurist
(WFS, 2011)

'The use of a game that simulates a real situation.'

Gaming
(WFS, 2011)

'The object of a person's ambition or effort; a destination; an aim.'

Goal
(Deverson & Kennedy, 2005: 456)

'Emphasizing the entirety of something. (Holon is Greek for "whole".) In dealing with complex systems, such as a human being or a city, researchers will often look at individual elements rather than the system as a whole, but it often is essential to consider the system as a whole.'

Holistic
(WFS, 2011)

'A conception or plan formed by mental effort.'

Idea
(Deverson & Kennedy, 2005: 540)

'Process by which an idea or invention is translated into a good or service for which people will pay. To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need. Innovation involves deliberate application of information, imagination, and initiative in deriving greater or different value from resources, and encompasses all processes by which new ideas are generated and converted into useful products.'

Innovation
(WebFinance, 2011)

'[A] new scientific or technical idea, and the means of its embodiment or accomplishment. To be patentable, an invention must be novel, have utility, and be non-obvious. To be called an invention, an idea only needs to be proven as workable. Only a few inventions lead to innovations because not all of them are economically feasible.'

Invention
(WebFinance, 2011)

(See *Innovation* above)

Leverage

(Deverson & Kennedy, 2005: 638)

'The power of a lever, the mechanical advantage gained by the use of a lever. A means of accomplishing a purpose; power, influence.'

Limiting factor

(Meadows & Wright, 2008: 187)

'A necessary system input that is the one limiting the activity of the system at a particular moment.'

Linear

(WFS, 2011)

'Following a straight line or having a single dimension. A linear relationship is one that is straightforward and direct, in contrast to a nonlinear relationship, which is complex and may involve feedback. A linear thinker might hold that a 20 percent increase in a tax rate would result in a 20 percent increase in tax collections, but such an increase is unlikely because taxpayers would be motivated by higher taxes to do more things to avoid being taxed at all, such as moving to a jurisdiction where the taxes are lighter.'

Linear relationship

(Meadows & Wright, 2008: 187)

'A relationship between two elements in a system that has constant proportion between cause and effect and so can be drawn with a straight line on a graph.'

Momentum

(Deverson & Kennedy, 2005: 725)

'Strength or continuity derived from an initial effort.'

Moral hazard

(Farlex Financial Dictionary, 2009;
Oxford Dictionary, 2010)

"'Lack of incentive to guard against risk where one is protected from its consequences.'" The risk that a party to a transaction or activity is not acting in good faith, or that one party has perverse incentives to act in a manner detrimental to the counter party. Moral hazards may exist for almost anything. For example, a plan for a government to bail out delinquent mortgages has the moral hazard that it will encourage mortgage holders to refrain from making their home payment. Likewise, deregulation has the moral hazard that companies will use it as incentive for short-term, unsustainable profits, rather than proper economic growth.'

Nonlinear

(WFS, 2011)

See *Linear* above.

Nonlinear relationship

(Meadows & Wright, 2008: 187)

'A relationship between two elements in a system where the cause does not produce a proportional (straight-line) effect.'





'The preparation of plans, that is, a set of tentative decisions about what we will do in the future. A plan may include the identification of goals that one wants to reach, as well as reasonable strategies about how to achieve the goals.

Planning, unlike futuring, is sharply focused on making immediate decisions about what one should do. In contrast, futuring focuses on developing a better understanding of possible goals and strategies as a preliminary to making decisions and plans.'

Planning
(WFS, 2011)

'The word "policy" in its natural and ordinary meaning ... represents the course of action adopted or to be adopted by a government on a stated issue.'

Policy
(MoJ, 2006)

'A public policy statement should strive to inform, disclose, clarify, illuminate, make certain ... and overall remove doubt. The same thing more simply stated is that interested persons should know from a significant policy statement, on a major issue, where they stand so as to be able to make their decisions.'

Policy statement
(MoJ, 2006)

'Referring to some group, jurisdiction, or thing that normally changes in advance of the others. For example, Scandinavian nations often adopt social policies in advance of other nations.'

Precursor (adjective)
(WFS, 2011)

'Something that commonly happens in advance of something else and therefore can be used to anticipate the later event.'

Precursor (noun)
(WFS, 2011)

'A statement that something will happen in the future. The term prediction connotes a greater degree of precision and certainty than does forecasting. Today's future-oriented scholars generally avoid making predictions and deal more in terms of forecasts or conjectures.'

Prediction
(WFS, 2011)

'Oriented toward dealing with possible problems before they become crises or with opportunities before they are seized by competitors. After proactive managers identify a significant challenge or opportunity, they prepare for it. Reactive managers ignore emerging problems and opportunities until they become obvious, when the time for dealing with them effectively may have passed.'

Proactive
(WFS, 2011)

Progressionism
(WFS, 2011)

'The doctrine that the human race or society is making continuous progress. Progressionism developed in Europe in the seventeenth and eighteenth centuries, along with the idea of progress, and reached its zenith in the late nineteenth and early twentieth centuries. However, progressionist views were discredited by intensifying world wars, economic depressions, the Holocaust, new weapons of mass destruction, and other negative factors.'

Projection
(WFS, 2011)

'A forecast developed by assuming that a trend will continue into the future. For example, if the population of a city has recently been increasing two percent a year and the number of inhabitants is now one million, we might assume that the population one year from now will be 1.02 million.'

Quality of life
(WFS, 2011)

'The noneconomic aspects of a human life, such as the purity of the air, security from crime, effective cultural institutions, availability of leisure and recreation, and general feelings of satisfaction and well-being. By contrast, the term standard of living emphasizes the economic aspects such as salary, size of home, retirement benefits, vacations, etc.'

Reductionism
(WFS, 2011)

'The tendency to explain a complex phenomenon by analyzing and measuring its individual parts or aspects. Whatever cannot be measured satisfactorily may be ignored as unimportant or even considered nonexistent.'

Relevance tree
(WFS, 2011)

'A diagrammatic technique for analyzing systems or processes in which distinct levels of complexity or hierarchy can be identified. A relevance tree for a new drug might start with Biomedical Objectives, under which would be listed Prevention, Diagnosis, Treatment, etc. Under Diagnosis, the tree might branch into Structure, Function, Composition, Behaviour, etc. A relevance tree enables an analyst to identify the various aspects of a problem or a proposed solution and thus arrive at a more complete understanding of something. This technique is also useful for identifying unintended side effects of innovations.'

Resilience
(Meadows & Wright, 2008: 188)

'The ability of a system to recover from perturbation; the ability to restore or repair or bounce back after a change due to an outside force.'

Risk
(Deverson & Kennedy, 2005: 969)

'The chance or possibility of danger, loss, injury, or other adverse consequences.'





‘The identification and characterization of the quality and quantity of potential adverse effects of an event, such as an investment decision, a new technology, or a natural phenomenon.’

Risk assessment
(WFS, 2011)

‘The initial and continuing process of reviewing and analyzing current literature, websites, and other media to identify and describe noteworthy trends and their possible development and future impacts.’

Scanning
(WFS, 2011)

‘A description of a sequence of events that might possibly occur in the future. A scenario is normally developed by: (1) studying the facts of a situation, (2) selecting something that might happen, and (3) imagining the various ways for that development to occur and the sequence of events that might follow.’

Scenario
(WFS, 2011)

‘The use of models, including computer and physical models, and/or role-playing exercises to test the effects of various developments or events on the system being studied.’

Simulation
(WFS, 2011)

‘A postulated time in the future when technological progress and other aspects of human evolutionary development [become] so rapid that nothing beyond that point can be reliably conceived.’

Singularity
(WFS, 2011)

‘A distinguishable condition in the development of something as time passes. In human development, a fertilized egg develops into an embryo, then a fetus, then an infant, then a toddler, etc. A new product may move from conceptualizing to prototyping, to market testing, to full-scale production, etc.’

Stage
(WFS, 2011)

‘An accumulation of material or information that has built up in a system over time.’

Stock
(Meadows & Wright, 2008: 188)

‘Strategic assets can be patents, brand names, or subsidiaries comprising most of the business or generating most of the profits of a group. In some cases the company does not actually own the assets but simply uses them under license.’

Strategic asset
(Vernimmen, n.d.)

‘Strategic asset allocation is a traditional approach to determining how much of your money should be where in order to achieve your long-term investing goals. It starts with assessing your tolerance for risk, and your investing time frame.’

Strategic asset allocation
(Anspach, 2011)

Strategy

(Treasury, n.d.)

‘The result of making decisions about what organisations want to achieve in the longer term, and how they are going to achieve it.’

Strategy map

(Kaplan & Norton, 2008: 10)

‘... provides a one-page visual representation of all the strategic dimensions, which we now call strategic themes. ... By building a strategy map around a collection of strategic themes, executives can separately plan and manage each of the key components of the strategy but still have them operate coherently.’

Sustainable Development

(World Commission on Environment and Development, 1987: 43)

‘Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of “needs”, in particular the essential needs of the world’s poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.’

Synergy

(WFS, 2011)

‘The combined action of a number of parts so that the result is greater than would be produced by the parts operating independently. In brainstorming, people freely express their ideas, thereby stimulating other members of the group to get ideas. The result: a larger number of original ideas may be produced than if everyone worked on the problem independently.’

System

(Meadows & Wright, 2008: 188)

‘A set of elements or parts that is coherently organized and interconnected in a pattern or structure that produces a characteristic set of behaviors, often classified as its “function” or “purpose”.’

Systems theory

(WFS, 2011)

‘A theory that seeks to explain the behavior of systems, which are aggregates of interacting units. One important aspect of a system is the existence of feedback; that is, when one part of a system is acted upon, the results of that action, propagated through other parts, cause the original one to be affected.’

Taxonomy

(Merriam-Webster, 2011)

‘The study of the general principles of scientific classification especially the orderly classification of plants and animals according to their presumed natural relationships.’



‘Consider; be or become mentally aware of.’

Think
(Deverson & Kennedy, 2005: 1170)

‘The process or power of thinking; the faculty of reason.
An idea or piece of reasoning produced by thinking.’

Thought
(Deverson & Kennedy, 2005: 1172)

‘The test of a concept through the use of imagination and logic. Typically, the thinker posits a certain state or situation as being true, and then asks the question, if that is true, what might result?’

Thought experiment
(WFS, 2011)

‘The point at which a change produces some new effect. Certain types of change proceed without noticeable effect, but at a certain point a notable reaction occurs. Example: when water reaches 100°C, it begins to boil.’

Threshold
(WFS, 2011)

‘The period of time that one is assuming for the purposes of decision-making and planning. For instance, a planner might think normally in three-month segments.’

Time frame
(WFS, 2011)

‘The farthest distance into the future that one considers in forecasting and planning.’

Time horizon
(WFS, 2011)

‘A chosen or taken course.’

Trajectory
(The American Heritage Dictionary of the English Language, 2009)

‘An ideal society or a description of such a society. A utopia normally exemplifies desirable things that might happen in the future. The things judged desirable may reflect the period of history in which the utopia is conceived, as well as the author’s own preferences.’

Utopia
(WFS, 2011)

‘A thing or idea perceived vividly in the imagination.’

Vision
(Deverson & Kennedy, 2005: 1261)

‘The process of creating a series of images or visions of the future that are real and compelling enough to motivate and guide people toward focusing their efforts on achieving certain goals.’

Visioning
(WFS, 2011)

‘An unexpected event that would have enormous consequences if it actually occurred. The term often refers to a future event that is unlikely during the period of time being considered but would have great consequences if it did.’

Wildcard
(WFS, 2011)

References

A complete list of reference details are available in the online version of this report, see publications at www.sustainablefuture.info

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IF...

BY RUDYARD KIPLING

If you can keep your head when all about you
Are losing theirs and blaming it on you,
If you can trust yourself when all men doubt you,
But make allowance for their doubting too;
If you can wait and not be tired by waiting,
Or being lied about, don't deal in lies,
Or being hated, don't give way to hating,
And yet don't look too good, nor talk too wise:
If you can dream – and not make dreams your master;
If you can think – and not make thoughts your aim;
If you can meet with Triumph and Disaster
And treat those two impostors just the same;
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to, broken,
And stoop and build 'em up with worn-out tools:

If you can make one heap of all your winnings
And risk it on one turn of pitch-and-toss,
And lose, and start again at your beginnings
And never breathe a word about your loss;
If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And so hold on when there is nothing in you
Except the Will which says to them: 'Hold on!'

If you can talk with crowds and keep your virtue,
'Or walk with Kings – nor lose the common touch,
if neither foes nor loving friends can hurt you,
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And – which is more – you'll be a Man, my son!

RUDYARD KIPLING was an English poet, short-story writer, and novelist, who received the Nobel Prize for Literature in 1907. He is specifically remembered for his commemoration of British imperialism, writings about British soldiers in India, and his children's tales. 'If...' is one of his best-known fictional works and is one of Sir Paul Callaghan's favourites.

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Staff

The content and design of this workbook was made possible by the following people:

Author: Wendy McGuinness

Research: Geeta Balakrishnan, Helena Hallagan, Jess Prendergast, Lisa Bazalo, Liz Allan, Louise Grace-Pickering, Lucy Foster, Mia Gaudin, Miriam White, Penny Garty, Rory Sarten

Editing: Susan Brierley

Design: Angus McBryde, Gillian McCarthy, Kelly Gordon, Mitchell Lee

Project Manager: Lara Rapson

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Bronze:

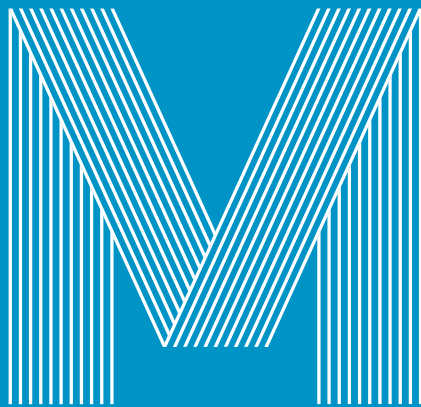


Deloitte.

Scratch *design from scratch*



Brainstorm



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