

# Successfully Navigating the Green Market

Associate Professor Carol Boyle, Director  
International Centre for Sustainability Engineering and Research  
The University of Auckland



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SUSTAINABILITY ENGINEERING & RESEARCH

- 
- **Introduction and Welcome**
  - **Carol Boyle** - Latest trends in international best practice
  - **Peter Nielson** - Facts and Figures Internationally and in NZ  
*[coffee]*
  - **Alex Reiche** – Making Green Procurement work for you
  - **Michael Field** – NSCC+RWC 2011 Procurement Frameworks
  - **Carol Boyle** - Innovating to meet future needs
  - **Chris Lock** – Funding support from Tech NZ
  - Wrap up

# Marketing NZ Products

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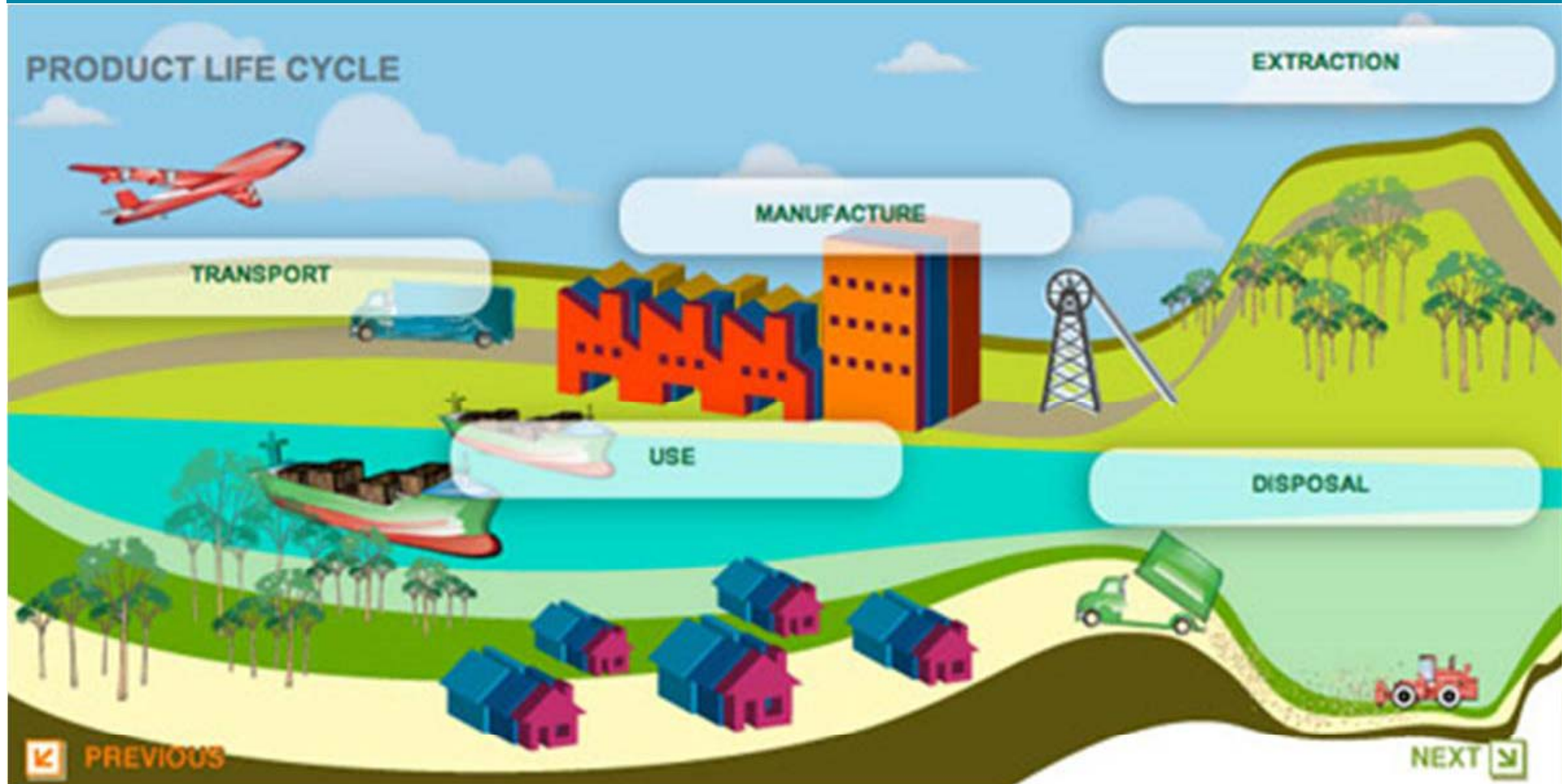
- Legislation, regulation and standards are being tightened
- Climate change, health and safety, environmental impact are now major issues
- Manufacturers are being asked to provide assurance that their product not only meets regulations and standards but also meet consumer demands and expectations
- NZ, in general, lags behind in responding to these issues

# Legislation and Standards

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- The EU has already enacted legislation which supports development of sustainable products
  - Product Take back/recycling
  - RoHS
  - REACH
- Other countries (China, Canada, US, Brazil) are following up with their own legislation
- Other legislation is being developed and will roll out over the next 20 years
  - Lifecycle analysis
  - Embodied energy
  - Life Cycle Carbon Emissions
  - Embodied Water / Water Miles

# Life cycle thinking



# Considerations at all stages

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- Reduction/elimination of waste
- Reduction of energy
- Reduction/elimination/absorption of CO<sub>2</sub>
- Reduction/elimination of land use impacts
- Reduction of inputs
- Recycling/reuse of materials/energy
- Positive social impact

# Public and Consumer Demands

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- Media and public opinion in the UK have been driving green product demands
- Green buildings, green products, green materials, carbon miles, food miles, embodied energy, carbon emissions, water miles, recycling, energy efficiency, water efficiency
- Major issues arising include estrogen mimicking compounds, BisPhenyl A, PVC, genetically modified organisms
- To a lesser extent, electromagnetic radiation is also a concern
- In other EU markets, energy efficiency is significant; local perspectives and local cultures are important

# Public and Consumer Demands

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- The US market is increasingly wary of Chinese products due to the ongoing problems
- It is highly corporate driven
- There is increasing awareness of and demand for green products
- There is also increasing interest and concern over impacts on developing countries due to resource extraction and waste dumping
- Public opinion and consumer demands in other countries are following suit





Photos Basel Action Network



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# Impacts in Developing Countries

Industry vs agriculture in  
India and China



Biofuels vs survival  
agriculture in  
Indonesia, Malaysia,  
Africa, India





# Government responses

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- Many governments have set green policies for procurement
- This includes green buildings, green materials, recycled content, sustainable furniture, energy efficient electronic goods
- Such policies are very common in local councils or local regions (states/provinces/counties)
- Federal government though is also starting to set such policies
- Only products and companies which meet their criteria are allowed to bid
- Bids usually are required to address specific issues

# New Zealand

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- Research on life cycle assessment for NZ products is ongoing
- Currently there are limited data for NZ materials and processes
- Many product components are imported; more effort is needed to identify the full life cycle of those products
- NZ has the opportunity to develop sustainable products which could lead the world
- Strong innovation combined with strong sustainability could produce innovative new products to reduce GHGs, produce energy, reduce energy consumption, reduce hazardous materials etc.



New Zealand Business Council  
for Sustainable Development



# **Green market mega trends and opportunities**

**Peter Neilson, Chief Executive New Zealand Business Council for Sustainable Development**

**Successfully navigating the green market. Owen Glenn Building, University of Auckland**

**- 7.30am Friday February 19, 2010 –**



## Pressures coming from all sides

- **Today:** World population 6.5 billion
- **2050:** 9 billion (with 8 billion in developing countries)
- While populations grow in developing countries, they will age in the developed world. In several countries, including Japan, Italy, and Singapore, the median age will rise to over 50 by 2050
- The challenge of a growing population is complicated by the pressure of urbanisation. By 2010, half of the world's people will live in cities. There are now an extra 60 million new town and city dwellers every year.



## Pressures coming from all sides

- Human activity over the past 50 years has changed the world's environment more extensively than ever before, largely to meet growing demands for food, fuel, fresh water, timber, and fibre. The use of natural resources has advanced human development, but at a growing environmental cost.
- The UN Development Programme estimates that if the whole world's population were to enjoy a lifestyle similar to that of the industrialised countries today, it would require the resources of 5.5 planet Earths.



## Pressures coming from all sides

These demographic shifts create a range of challenges for business:

- Will the new billions born be healthy, educated, and economically advanced enough to become the customers and employees of tomorrow?
- Can agricultural sectors create enough food?
- How can businesses adapt to ageing populations in developed countries, as they create increasing medical and pension costs and make it difficult to renew workforces?





## Pressures coming from all sides



- Carbon – pricing;
- Water footprint issues (for New Zealand a problem bigger than carbon content);
- US dairy farmers – plan to halve emissions over the next 25 years; Australia plans to halve the emissions intensity of its agriculture in 20 years while lifting production 50% (A\$60m project launched February 8, 2010)
- Next wave of protectionism – based around relative environmental performance.



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## The mega-trend: Customers

Time Magazine, in its September 21, 2009, cover story, describes it as a trend to *“enlightened self interest”*.

- 6 in 10 have bought organic products since January 2009;
- 82% consciously supporting local or neighbourhood businesses;
- Ethical investment funds up from 55 to 260 since 1995 (US\$2.7 trillion, 11% of all financial market investments);
- 78% would pay US\$2000 more to get a car that goes 35 mpg over a 25mpg car.

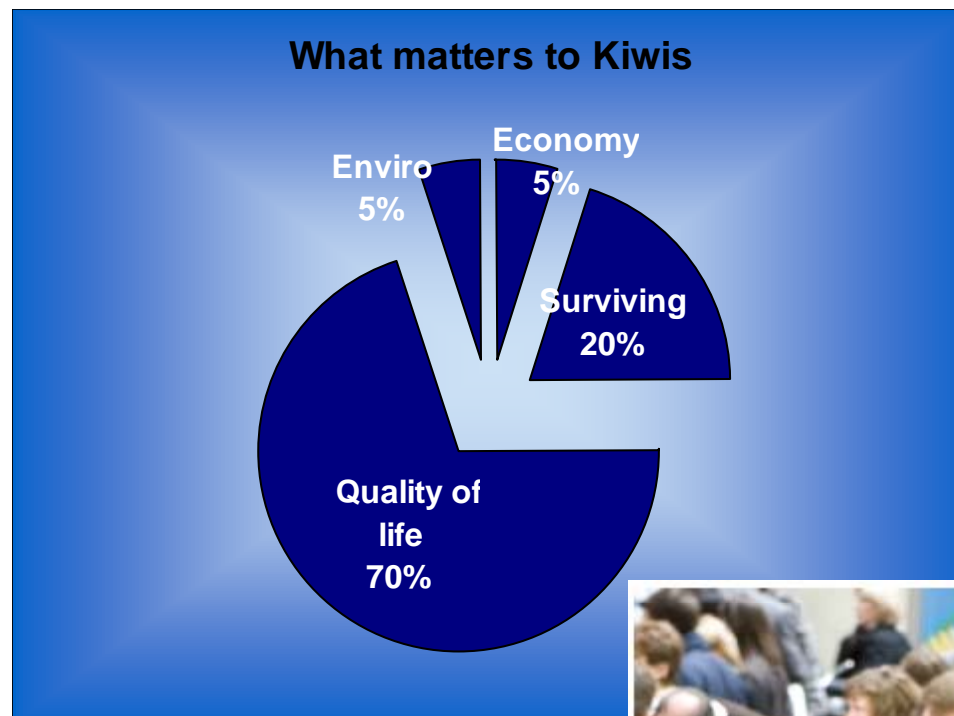




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## The mega trend: Customers



### Ask 100 New Zealanders ...

- 5 think its only about the economy;
- 5 say its only about the environment;
- 20 say that life is too hard for me to think about anything other than today;
- 70 say I want a better standard of living and to maintain my quality of life: we should make decisions on what's best long term.

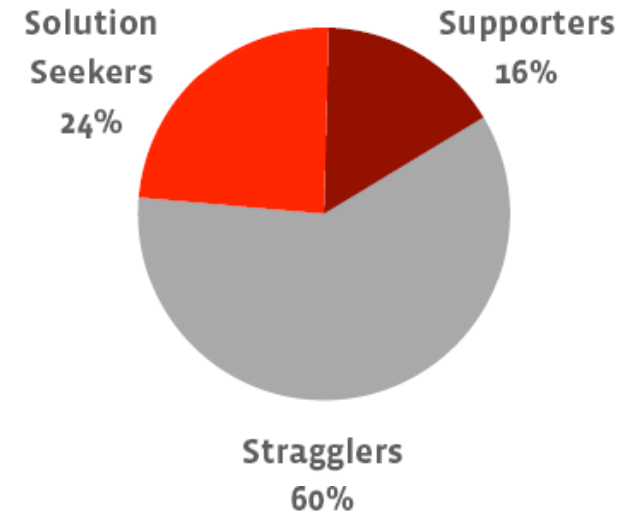
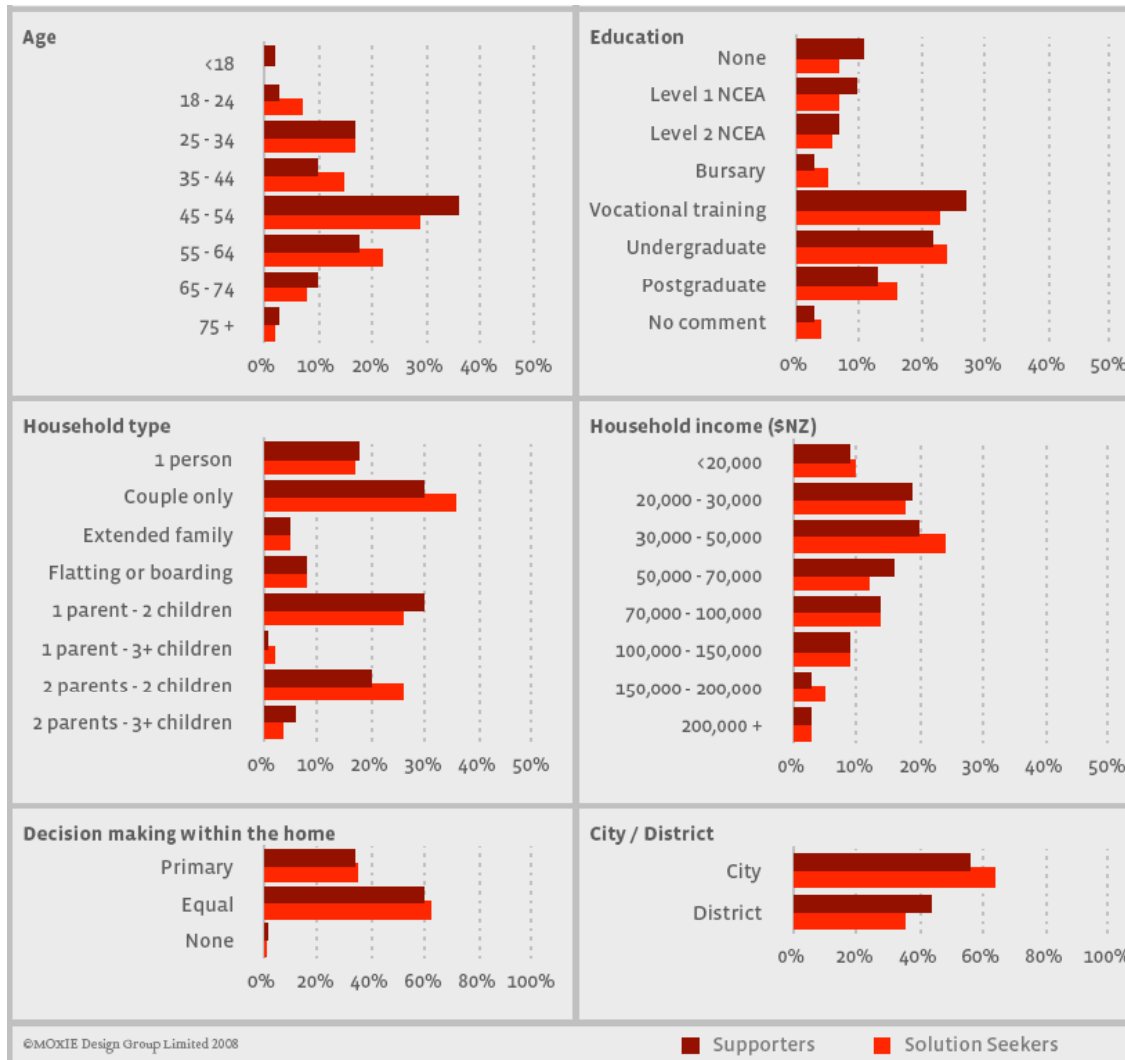
- UMR research for the Business Council



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# Values and market opportunities



**“Solution Seeker” Market 24%, 40% with ‘supporters” (2008)**

Climate change the biggest driver:

- 83% of New Zealanders aware of the problems the world faces;
- Want business and Government to take action, but loosing faith in their ability to respond;
- Want **authentic solutions they can buy.**



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## The sustainability market share opportunity

- **32% of New Zealand consumers will move** their purchases to a provider of goods and services if its social and environmental performance is better, and the cost is about the same.
- This is the sleeping giant of New Zealand business because, at the moment, most consumers cannot tell the difference between the good and the bad guys.



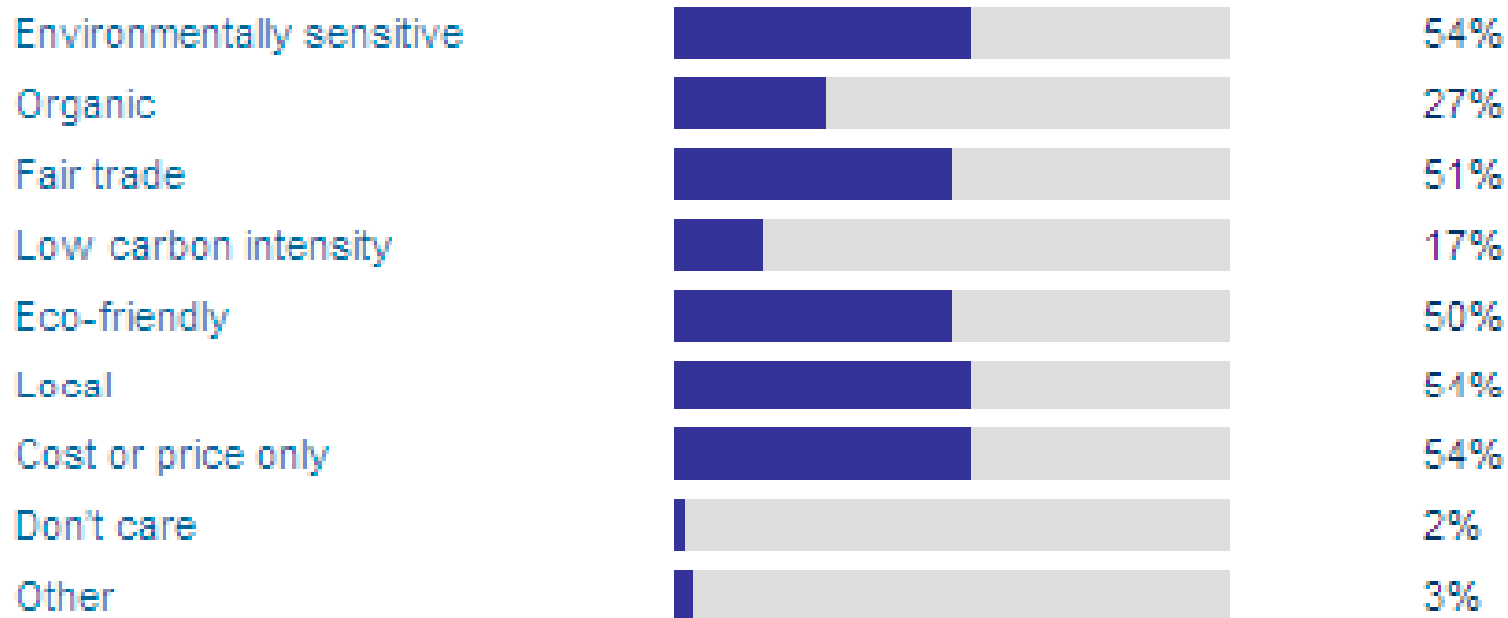


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### Driving consumer choices

*What factors do you consider when purchasing products?* All respondents



**Business owners are 10% MORE sensitive:** 64% say they consider a products environmental sensitivity..

While price and quality are important **A COMBINATION OF SUSTAINABILITY FACTORS** can provide a significant business opportunity.

Sept 09 n=2931



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### Driving consumer choices on brands

*When considering brands with sustainable attributes, which of the following has the greatest influence on you?*



Top factors: Experience and Knowledge of product and brand trust





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### Driving business people

Among senior decision makers: (mangers, proprietors, self employed)

- **41%** say their business' **reputation** relies on sustainable business practice;
- **61%** say they **balance** making returns to investors with their role in the community;
- **28% actively buying on whole-of-life cost basis**, not just day-one price, while 39% practice something in-between (+7% over past year);
- **26% actively buying from suppliers who behave sustainably** (22% don't care, provided at the best price);
- **Just 5%** believe sustainable business practice is only about being "green and fluffy"
- **58%** believe their organisations should profit from sustainability initiatives (26% say expectations met)

### Why 28% sack suppliers

*Has the organisation you work for or with deselected suppliers in the past year because of their environmental, social or ethical behaviours?*

Business decision makers:

Yes		28%
No		37%
Don't know		35%

*Include social/ environmental criteria in supplier terms and conditions?*

23% + 8% = 31% Business owners:

Yes		23%
No - but we plan to		8%
No and no plans to		58%
Don't know		10%

Sept 09  
n=2931







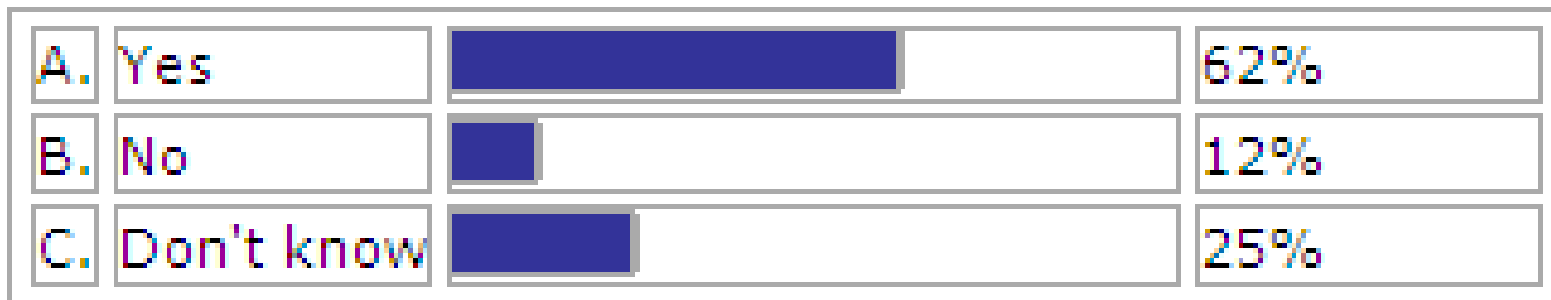
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## What Business Council companies are doing:

Member companies' annual sales equate to 43% of GDP

*Have you **de-selected suppliers** because of their environmental, social or ethical behaviours? Business Council Member Survey July 2009*



62% deselected compared with 28% for NZ business decision makers' organisations

NZBCSD member de-selections **up 4%** in 2009 v 2008

**74% of NZBCSD members are procuring from sustainable suppliers or plan to**



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## Summary of business and sustainability:

- The majority of business decision makers and owners are trying to balance their roles of making profits and community responsibilities
- This is translating into significant sustainable procurement activity (28 in every 100 buying on whole-of-life cost, not lowest price)
- 35 in every 100 surveyed New Zealand business owners say they have dumped suppliers in the past year because of their environmental, social or ethical behaviours
- *A powerful opportunity exists in getting price, quality and environmental, ethical and social considerations aligned - authentically*

Tomorrow's Leaders report: World Business Council for Sustainable Development

"Part of the bargain, the social contract which allows companies to be as large as they are, is that they become engaged in the challenges the world faces, rather than dismissing them as someone else's problem."

John Manzoni Chief Executive, Refining & Marketing, BP



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## Driving the public sector

- Sustainable procurement
- Incoming National Government decides to keep sustainable procurement – “business as usual”
- Top 10 Govt agencies by risk and value will be independently assessed on their procurement approach, skills, and outcomes. 200+ have been trained on sustainable procurement



“Businesses and Governments which  
have introduced sustainable procurement  
report between 8% and 30% efficiency  
improvements – which go straight  
to the bottom line.”

-NZBCSD Sustainable Procurement Guide, 2009  
[www.nzbcscd.org.nz](http://www.nzbcscd.org.nz)



## Voter pressure on public sector



*Should sustainable procurement, under which goods and services are bought based on their whole-of-life price and environmental and other costs, be **extended to local and regional government** in New Zealand?*

*All NZ: 75% Yes, 8% No, 16% DK*

*Among main governing coalition parties*

- 78% National
- 75% ACT
- 71% Maori Party

PARTY VOTE 2008	Yes	No	DK
ACT New Zealand	75%	12%	11%
Green Party	90%	3%	7%
Labour Party	78%	5%	16%
Maori Party	71%	17%	8%
National Party	78%	8%	14%
New Zealand First Party	68%	11%	20%
Other party	63%	24%	14%



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Moxie Design (NZ) LOHAS/ Solution Seeker survey 2008

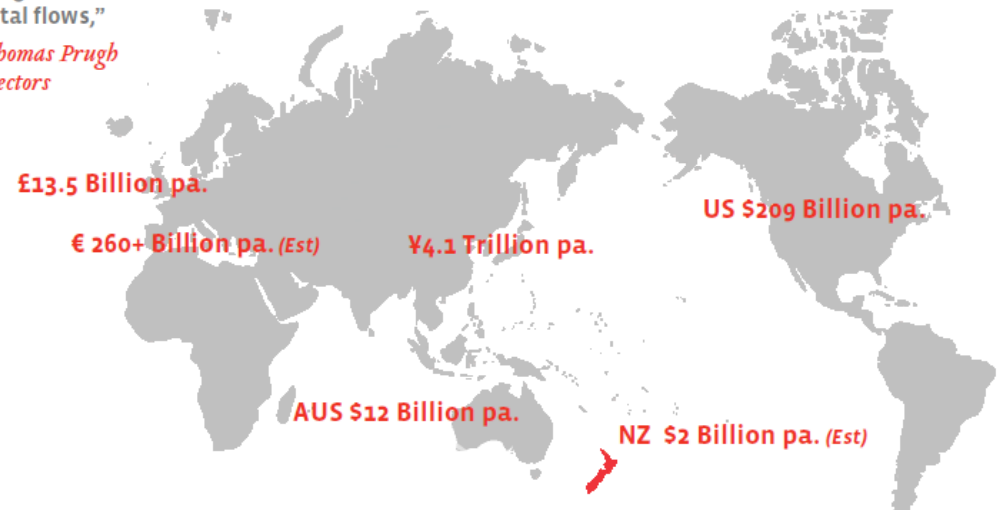
# Driving export sector

“Environmental problems are drastically rewriting the rules for business, investors and consumers, affecting over US \$100 billion in capital flows,”

*Gary Gardner and Thomas Prugh  
Project co-directors*

### GROWTH

LOHAS markets are projected to grow rapidly in the coming years, with most researchers agreeing that the markets are expected to double in size by 2010. Growth is being driven by a number of factors such as increased climate uncertainty, resource shortages and new product and service development.



- Sustainability considerations are expectations, not options, in many of our major markets (USA, Japan, Europe)
- As living standards rise we can expect consumers in other markets to see these as requirements, not unaffordable aspirations
- If we're serious about exporting we need to be serious about making our products more sustainable



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# Living up to our promise

- New Zealand has the advantage of being seen as pure
- US 2009 sustainability consumer study commissioned by NZTE finds:

*“The quality revolution has fully arrived in the US, but the sustainability trend is just starting to really gain traction. However, this is no issue for NZTE, as quality and sustainability are often two sides of the same coin.”*

**“Fresh” is an Uber-Symbol of Both Quality and Sustainability**

For NZTE, **“fresh”** is the most important product attribute for all food and beverage categories

No single dimension triggers “fresh” perceptions, rather it relies on a multiplicity of underlying elements...

- Appearance of minimal processing
- Cues of naturally sourced ingredients
- Location in perishable and perimeter food categories
- Use of natural colors and packaging materials
- Antithesis of factory farming
- Evokes a real, direct connection to the earth
- No industrial processing
- Connection to indigenous culinary traditions
- Product narratives emphasizing people, places and traditions

Sustainability and quality cues linking to the notion of “freshness”:

– Organic	– Minimal packaging
– Local	– Cage-free (where applicable)
– Fair Trade (where applicable)	– Free-range (where applicable)
– Whole	– Grass-fed, grain-fed (where applicable)
– Simple, short ingredient list	



## Living up to our promise

- What does this vital US consumer target group for New Zealand imagine quality food to be and not be?
- They don't associate quality with the "food ways of the recent past", which are collectively imagined as
  - Factory/industrial mass-quantity production (BIG companies, smokestacks, vats of chemicals, large pieces of machinery, somber hair-netted workers dotting long, complex manufacturing lines)
  - A focus on cheapness-to-manufacture and profit above quality
  - Uniform, boring and often "fake" foods.



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## Living up to our promise

- There is a perception that Kiwis still hand milk their cows and know their farm animals by name.
- While they have vague notions about New Zealand they are “overwhelmingly positive” about the country when it comes to environmental law, wise resource use, biodiversity, animal welfare, employment practices, ownership, financial stability and care and attention to product.
- We will ignore the voices of the quality conscious consumer, speaking to us via Hartman and NZTE, at our national peril.





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## Living up to our promise

- New Zealand has the advantage of being seen as pure
- All the surveys indicate people want authenticity – claims they can trust
- Therefore, we are going to have to live up to being clean and green – live up to the promise – not abandon a significant opportunity on the basis it might be too hard or pose some risks

What's the first photo to show up on Flickr when you enter the words "New Zealand"?

The web site with millions of photos in its "commons", uploading 6,311 updates per minute this month:



Waiotapu, Rotorua. Posted by Robyn of Vancouver



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# Thank you

Peter Neilson

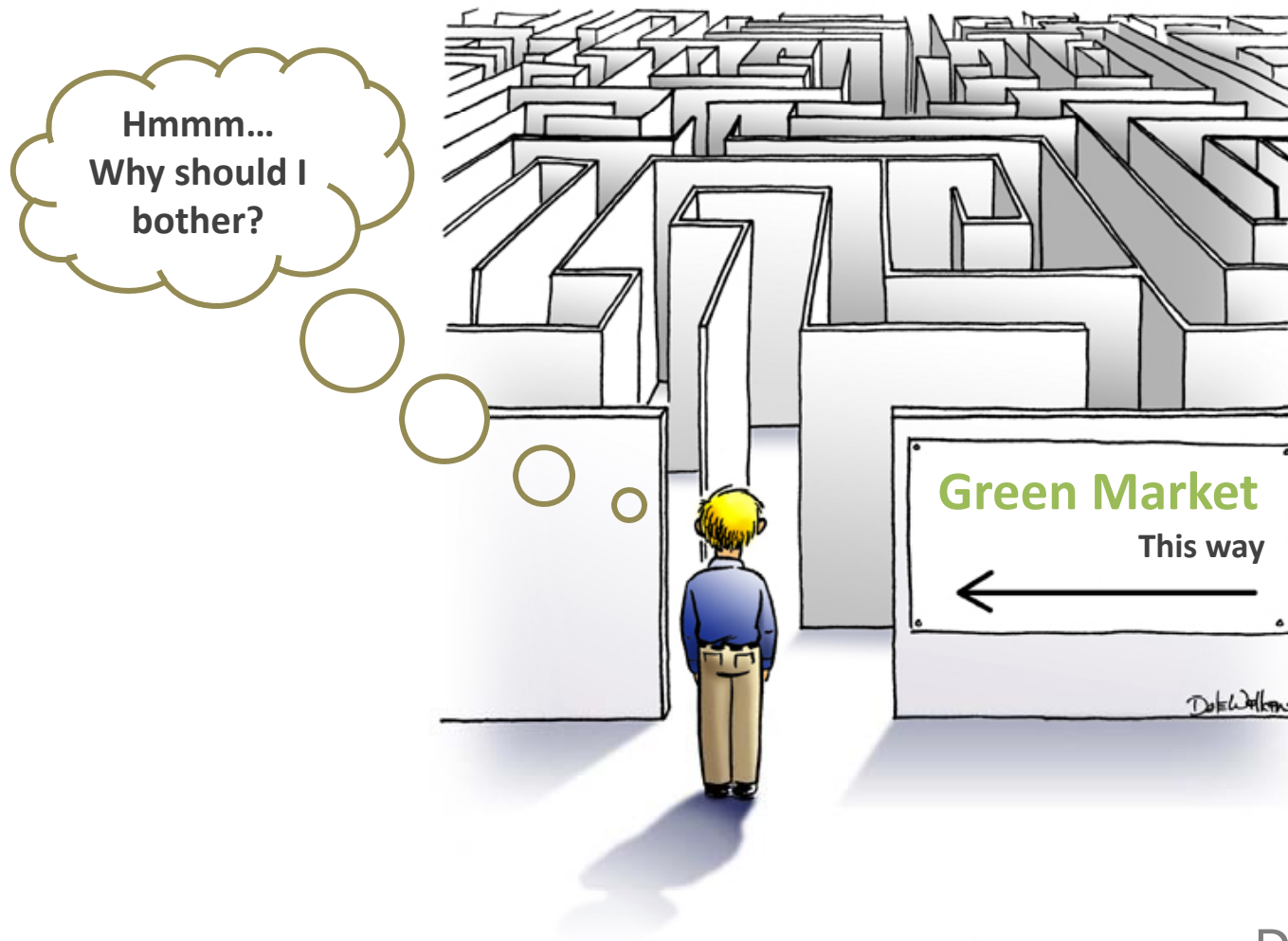
64 9 525 9727

■ E-mail: [peter.neilson@nzbcscd.org.nz](mailto:peter.neilson@nzbcscd.org.nz)

■ Web: [www.nzbcscd.org.nz](http://www.nzbcscd.org.nz)

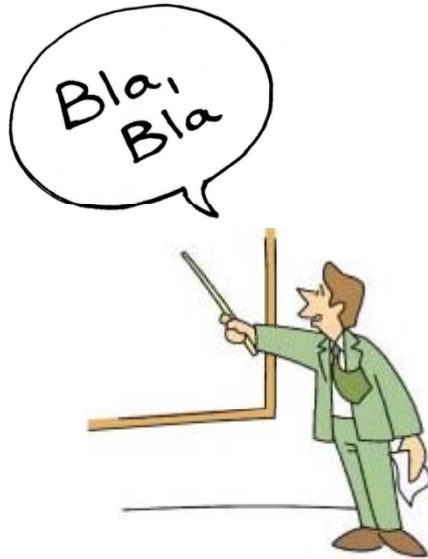
[www.shapenz.org.nz](http://www.shapenz.org.nz)

# Successfully navigating the Green Market



Alex Reiche  
Director - EnviroSpec

# What am I going to talk about ?

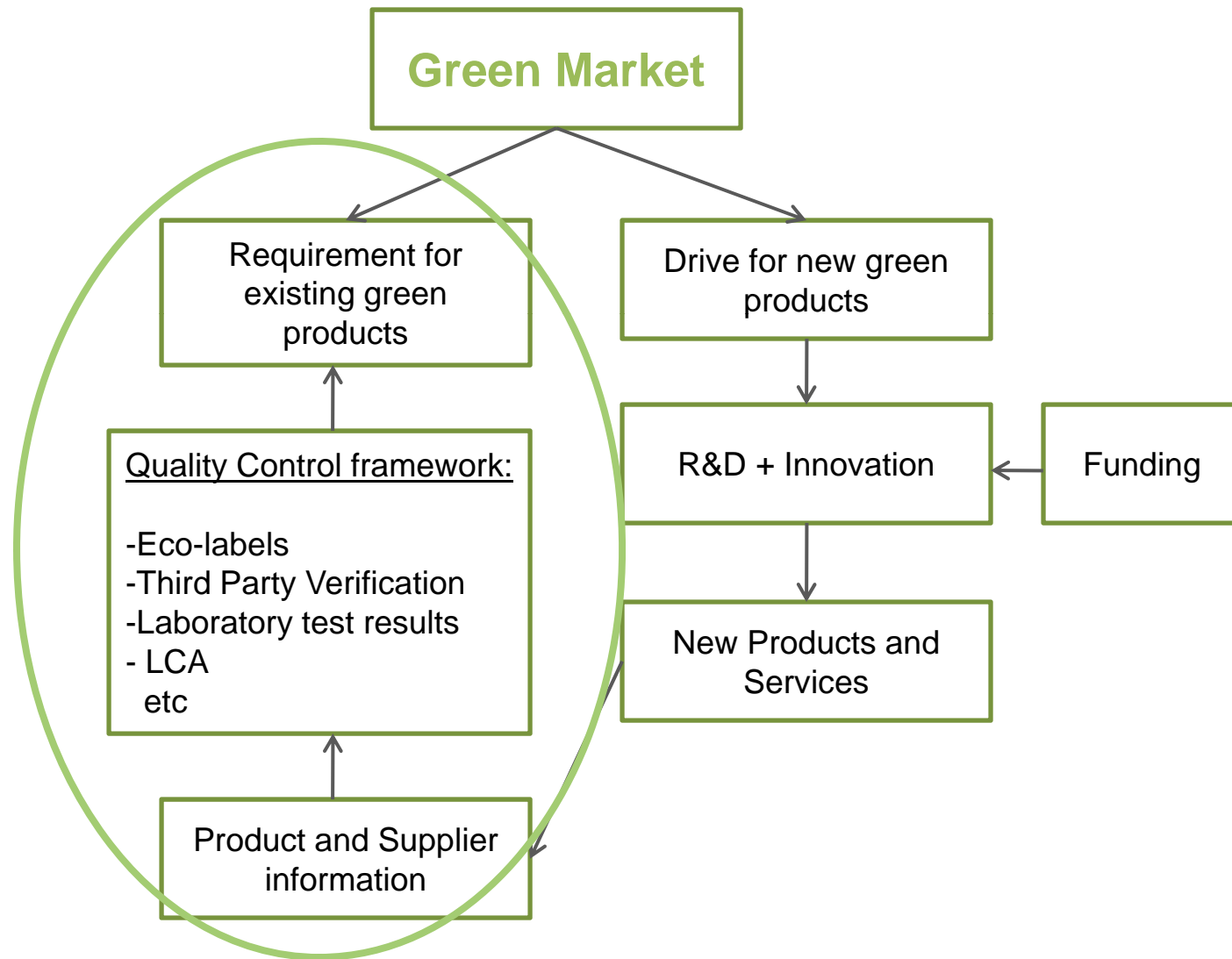


How to change **perceived barriers** into real business **sales opportunities**

## How?

- 1) By understanding the detail
- 2) By making it work to your advantage

# The Green Market at a glance



# Setting Green Procurement Policies



## What seems to be the trend?

- > Super-entities (e.g. Govt, NZGBC, IAG) are endorsing existing standards and rating systems

## Why?

- > Creates chain for compliances
- > Provides quality control
- > Reduces Greenwash
- > Spreads burden of verification



# So what do I need to do ?



Understand the details of the  
Procurement Framework that  
applies to you



## Green Star NZ

A framework for the  
procurement of  
Green Buildings

## NSCC

Procuring Green  
Products and  
Services

## RWC 2011

Sustainable  
Procurement  
toolkit

# Green Star NZ (as an example of a Green Procurement Framework)



## SCOPE

Rewards mostly design items (e.g. maximising natural daylight), then rewards products (e.g. eco-certified, low emitting carpet). To lesser extent also rewards some service industries (e.g. Building Contractors with ISO 14001 certification).

For details, visit [www.nzgbc.org.nz](http://www.nzgbc.org.nz)

## CATEGORIES

Management	IEQ	Energy	Transport
Water	Materials	Land Use & Ecology	Emissions

+

Innovation
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## COMPLIANCE REQUIREMENTS

- E.g. Furniture**
- Low VOC (ECNZ) ✓
  - Low Formaldehyde (e.g. AS/NZS 1859 + IANZ accredited lab) ✓
  - FSC certified timber ✓ ~~(AFS, PEFC, SFI) ?~~
  - Enviro certification (ECNZ, ISO14001, EnviroMark Gold) ✓
  - Durability – Extended Warranty ✓
  - Product Stewardship with evidence of EOL reprocessing ✓



# Where do I start ?



- 1 → Research where your market is going and what requirements are emerging
- 2 → Identify where you sit in relation to those requirements (what you already satisfy / what you need to work on)
- 3 → Map out the items you need to work on in relation to their cost , time to achieve them, outcome/payback value, your ability to achieve them
- 4 → Market those achievements and secure ROI
- 5 → Start looking at you medium to long term targets
- 6 → Review any changes in the market requirements

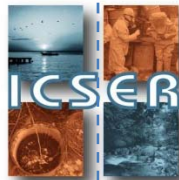
# Who do I talk to ?



## Consultants / Auditors



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## Councils / Associations



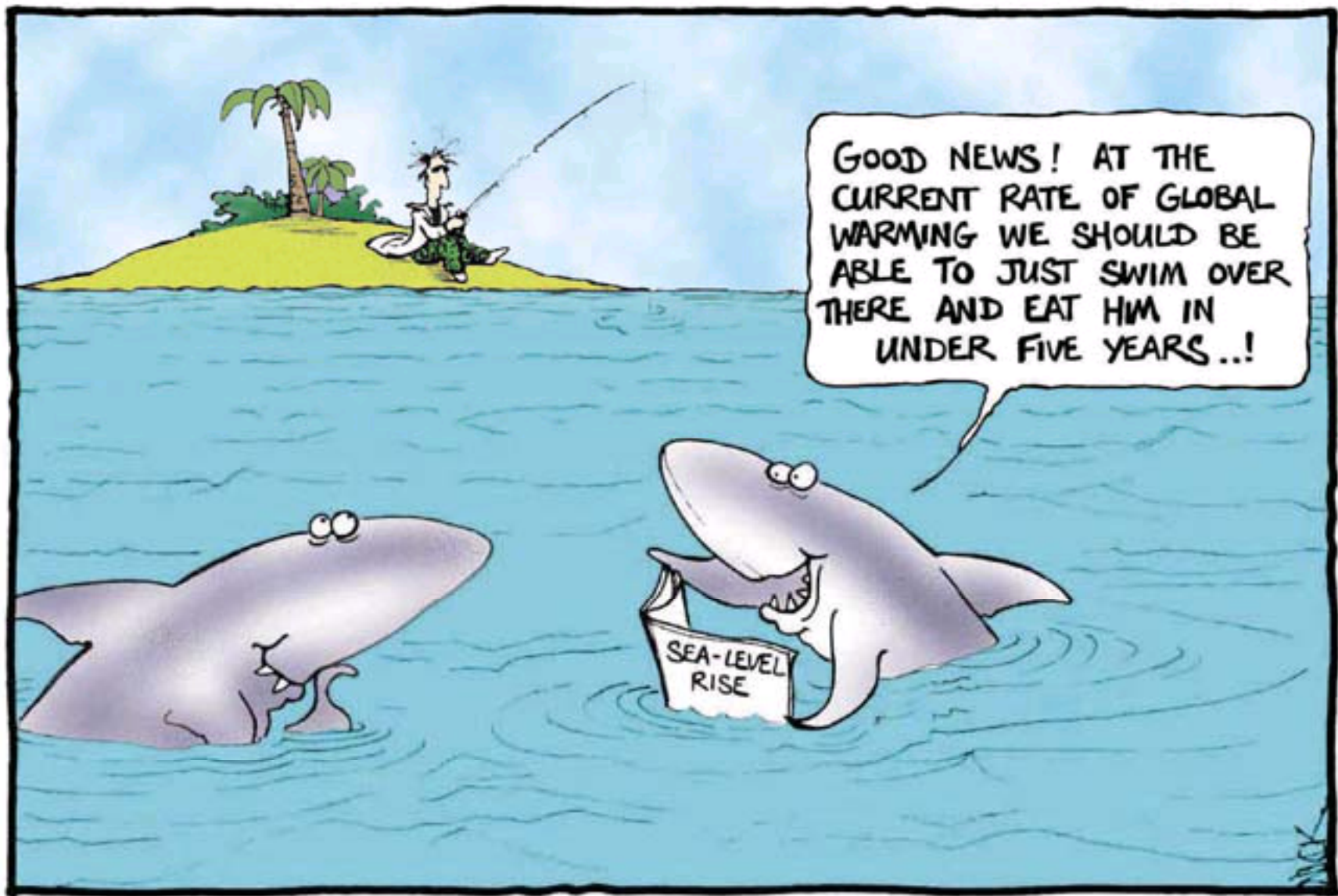
## Facilitators



... I've run out of time



THANK YOU



Next Speaker = Michael Field



**Michael Field**

Sustainability Manager, North Shore City Council

# I manage the teams that look after

- corporate sustainability programmes
- communications & education
- energy management
- **procurement**
- WasteWise workplace programme
- fleet management
- carbon accounting
- sustainability reporting

# Why do we bother?

- Whole-of-life costs
  - long term savings
- Changing the model from 'price' to 'value'
  - move away from 'transactional'
  - move toward 'collaborative'
- Enhancing reputation

# How we tender

- The biggest change is in
  - what we ask for from potential suppliers
  - how we evaluate tenders
- We use a **four stage** tender evaluation process



# Four Stage Process

## Stage 1 – Non-negotiable

Our specific requirements – might include carbon reporting, materials specifications etc.

## Stage 2 – Sustainability Attributes 25%

## Stage 3 – Non-financial Attributes 40%

Track record, Experience, Technical Skills and Process – Top percentage or number go through

## Stage 4 – Financial Attributes 35%

Overall cost of tender

# Rugby World Cup 2011

- We produced the Sustainable Procurement Toolkit for RWC 2011
  - Based on the existing NSCC guidelines
  - Dual purpose
    - Designed as a resource for business and as a resource for tenderers and assessors
- Live on the official tendering site - <http://www.aucklandplus.com/2011-opportunities/sustainability/sustainability-toolkit.cfm>

# What's in it for you?

- Gives you something to compete on, other than price (a nice change)
- Does not 'lean' towards large business
  - There are numerous points available for criterion that are relevant and applicable to small businesses
- Transparent
  - You can see exactly what we want and what it's worth to us

# Company Profile Assessment Table

- Environmental management
- Compliance
- Environmental associations
- Energy
- Climate change
- Water use
- Water discharge
- Waste minimisation
- Paper
- Travel and distribution
- Labour practices
- Community
- Awards and recognition
- Over and above

Innovation, R&D etc

*Sustainability*  
it's everyone's business

# Product and Industry Specific Assessment Table

- Generic product suppliers
- Wood-based products
- Clothing
- Food and beverages
- Packaging
- Printing
- Office consumables and electrical goods

# A resource for business

- Criteria graduate from the easiest to the most difficult to achieve within each category
- If you're unsure where to start in your own business, do the first thing in each section, then the second etc.
- Contains links to example documents and templates, as well as external certification schemes

# Third party verification

- Additional points are available for third party verified information, where applicable
  - Gives us a higher degree of assurance that the information is true and correct
  - Also ensures that the information follows international best practice
  - Helps us avoid 'Greenwash'



## Section 2: Company Sustainability Profile Assessment Table

**What we're after**

**What that means**

**Instructions for assessors**

**Examples and templates**

Category	Points Available	Description The company... (allocate points to points column if applicable)	Points Attained
Environmental Management	1	Has a documented and organisationally recognised environmental policy	
		An environmental policy is a document, often a single page, stating the organisation's intentions, aspirations and values around environmental impact management. <a href="#">Click here</a> to see an example	
		A copy of the organisation's environmental policy, approved by a senior company officer, needs to be provided to gain this point. Annual reports and website links are acceptable here.	
		Tender Response and Reference:	
	2	Has a documented environmental management plan to monitor and improve environmental performance	
		An environmental management plan is a document outlining the identified impact areas of an organisation, with clear planning on how to minimise or mitigate these impacts. <a href="#">Click here</a> to see an example	
		A copy of the organisation's environmental management plan, clearly showing plans to manage or mitigate impacts, also approved by a senior company officer, must be supplied to gain these points.	
		Tender Response and Reference:	
	2	The environmental management plan has been independently audited and verified	
		An additional 2 points are available if the environmental management plan has been independently reviewed to ensure that all impacts have been identified, and that plans are in place to effectively minimise or mitigate these.  The independent report or published reference to verification (e.g. annual reports or website links) must be supplied to gain these points.	
		Tender Response and Reference:	

Category	Points Available	Description The Company.../The Product... (Allocate points to points column if applicable)	Points Achieved
Generic Product Suppliers  <i>Note: Each of these criteria may or may not be applicable depending on the product type.</i>	2	Can demonstrate full product Life Cycle Analysis (LCA) to ISO: 14040 standards (specific to the product being supplied).  An LCA is an analysis of total environmental impact associated with the entire life cycle of a product. This covers the impacts associated with the mining of raw material, transport, refining, manufacturing and final disposal.  <i>An independently certified LCA report, clearly stating compliance with the LCA requirements set forth in ISO: 14040 standards must be supplied to gain these points.</i>	
		Tender Response and Reference:	
	3	Is listed in the Environmental Choice New Zealand and/or EnviroSpec Programme to ISO 14024 or ISO 14025 standards.  <a href="#">Environmental Choice New Zealand</a> is an independent certification body, which produces environmental specifications for manufacturers and suppliers. Organisations can apply to Environmental Choice New Zealand to gain certification for their products, clearly demonstrating that these products are environmentally preferred.  <a href="#">EnviroSpec</a> specialises in environmental specification markets and certification programmes, providing third party verification for sustainable products.  <i>A copy of current Environmental Choice New Zealand certification and/or EnviroSpec certification and/or <a href="#">ISO 14024</a> or <a href="#">ISO 14025</a> certification must be supplied for each product to gain these points.</i>	
		Tender Response and Reference:	

Your response

Web-links

## FAQ's

- The table is large to ensure that it is comprehensive and useful to you as a resource
- It's **NOT** a pass or fail assessment but rather a comparative assessment of tender respondents
  - The highest scoring tenderer achieves full points even if their overall score is low

# Questions?

For copies of any documents, please contact:

[Michael.Field@northshorecity.govt.nz](mailto:Michael.Field@northshorecity.govt.nz)

*Sustainability*  
it's everyone's business

# Innovating for the Future

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Associate Professor Carol Boyle, Director  
International Centre for Sustainability Engineering and Research  
The University of Auckland

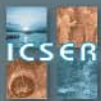


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# Innovation for the Future

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- It takes 10-20 years to develop a truly new product and get it to the market
- Our companies need a vision of the products which are going to shift us to becoming sustainable
- These will be products which are based on green chemistry, nano-production, bio-materials and bio-mimicry
- Minimal energy consumption and absorption of carbon in the process
- Non-hazardous materials – no heavy metals, no chlorinated organics
- New directions, new visions will be essential



# Global Issues – Threats and Opportunities

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- Climate change
- Pressure on ecosystems, land use, resources (particularly water and energy), loss of biodiversity
- Increasing population and consumption
- Increasing awareness of pollution and hazardous substances
- Increased awareness of global social issues
- Economic processes
- Scientific and technological innovations
- Globalisation



# Resource consumption

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- To live within our planet's resources, we need to reduce our resource consumption by a minimum factor of 10
- Most processes use high energy and resource inputs, produce high waste volumes (e.g. 1kg steel produces 21 kg waste; 1kg Al produces 85 kg waste) and have changed little over the past 100 years
- Incremental changes have reduced the waste through reuse or recycling and end of pipe technologies have reduced emissions and effluents but only minimally
- New pathbreaking technologies are required

# Considerations at all stages

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- Reduction/elimination of waste
- Reduction of energy
- Reduction/elimination/absorption of CO<sub>2</sub>
- Reduction/elimination of land use impacts
- Reduction of inputs
- Recycling/reuse of materials/energy
- Positive social impact

# New energy

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- Fuel cells
- Hydrogen
- Solar – thermal collection / photovoltaic
- Wind
- Ocean
- Biological – algae, ATP, jatropha

# New manufacturing

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- 3D printing is already being used for prototyping
- It is expected to advance significantly, recycling materials for common household products
- If the technology becomes cheap enough, designs rather than products will be marketed

# Nanotechnologies

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- At the nano level (atomic or molecular level, 100 nanometers or smaller), many materials exhibit different physical or chemical properties
- By building and combining nano level constructs, materials and products which exhibit new properties can be developed

# Nanoconstructs

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- By using nanoconstructs those nanoscale properties can increase strength, flexibility, stiffness, thermal and electrical properties
- Carbon fibres, ceramics, metal-ceramics and metal alloys are all being used to develop nanoconstructs
- These have the potential to change chemical, electrical, mechanical and civil engineering

# Nanocatalysts

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- Catalysts increase the rate of a reaction but are unchanged at the end of the reaction
- Common catalysts are nickel and platinum or paladium
- Using nanonickel can improve the efficiency
- Attaching iron atoms can enable the nanonickel to be recovered magnetically

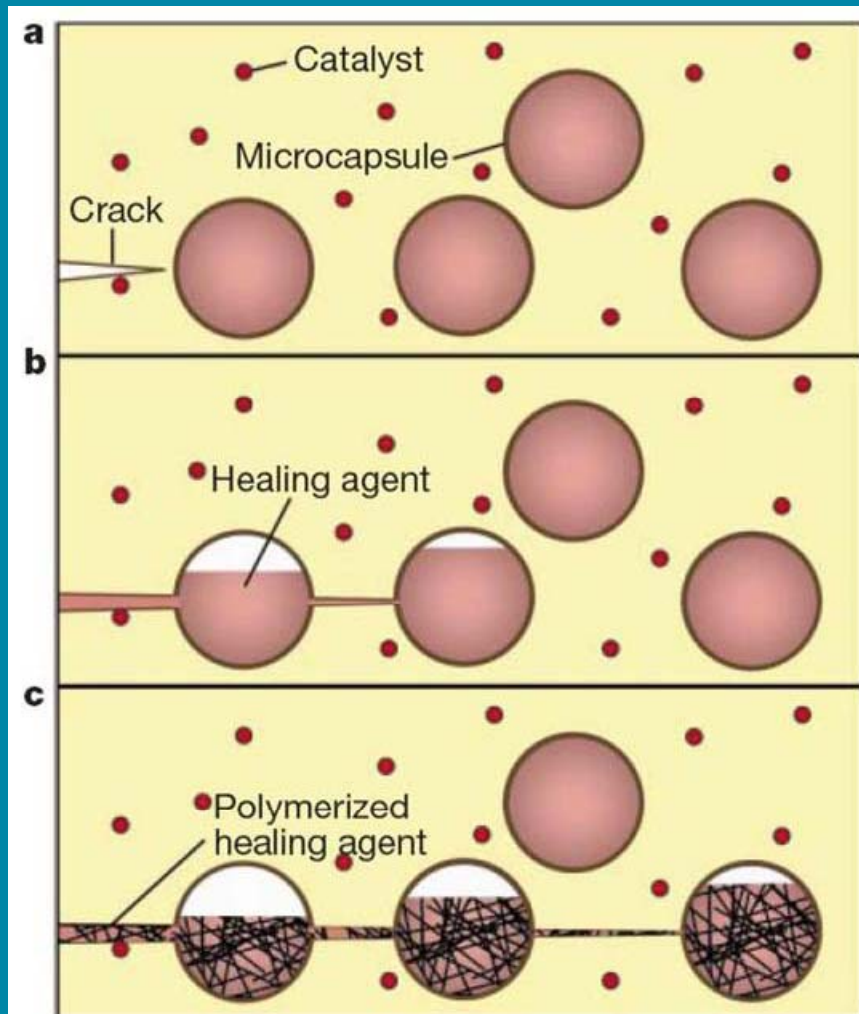


# Nanocatalysts

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- Nanocatalysts can also target specific chemicals
- They can also eliminate processes which use hazardous chemicals or produce hazardous byproducts
- At the nano level, some inactive metals such as gold become active catalysts

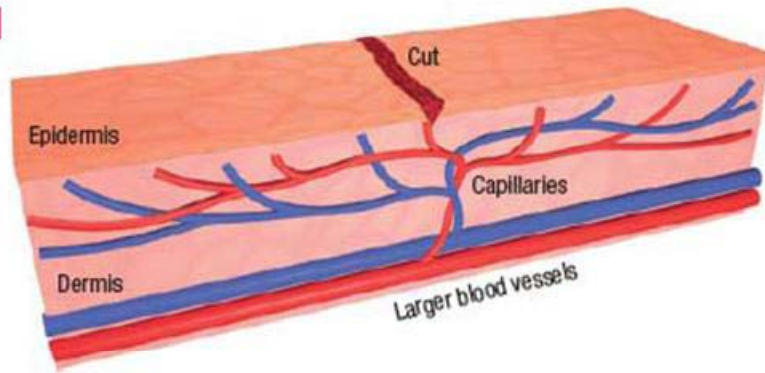
# Self repairing materials



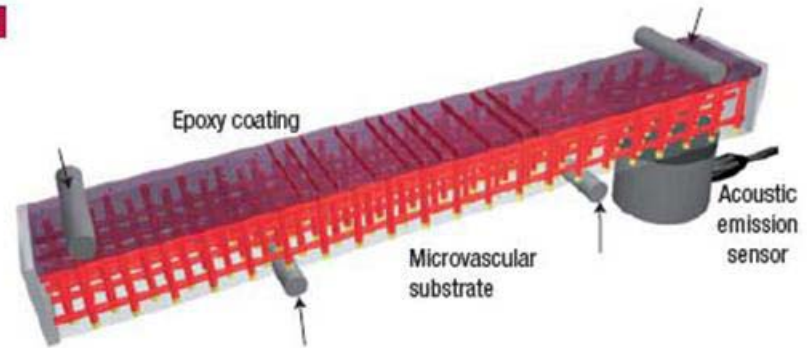
- Coatings - contain encapsulated materials which are released when triggered to repair the coating

# Self-Repairing Construction Materials

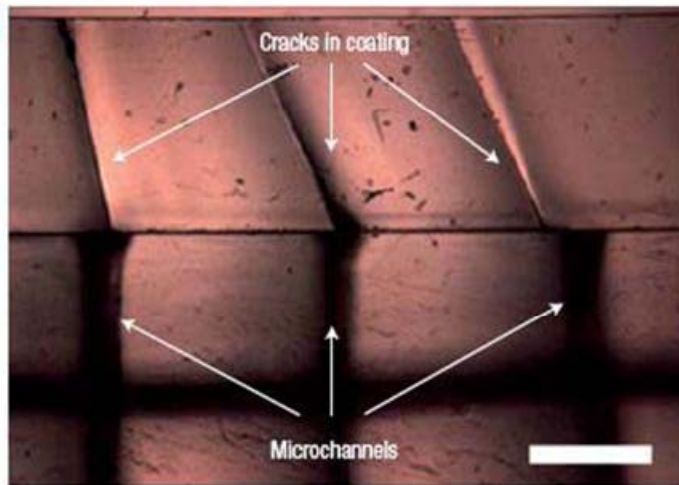
**a**



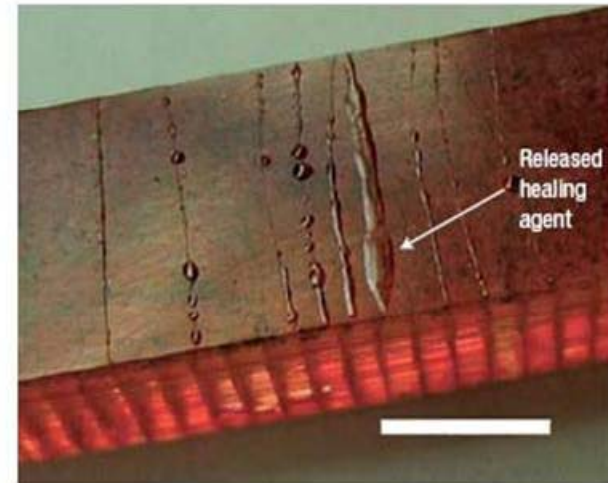
**b**



**c**



**d**



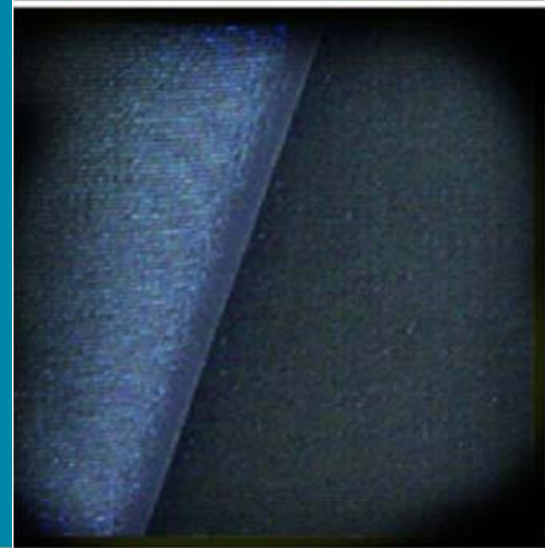
# Biomimicry

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- Using biological designs, materials, chemicals and solutions as the basis of engineering design
- Enzymes – biocatalysts
- ATP – biological energy
- Cellular production of materials (plastics)
- Protein-polymer membranes embedded with specialised proteins (aquaporinZ) for desalinating water

# New coatings

- By using nano-structures which mimic butterfly wings, new paints, fabrics, cosmetics have been developed
- These are non-toxic and require less energy to produce





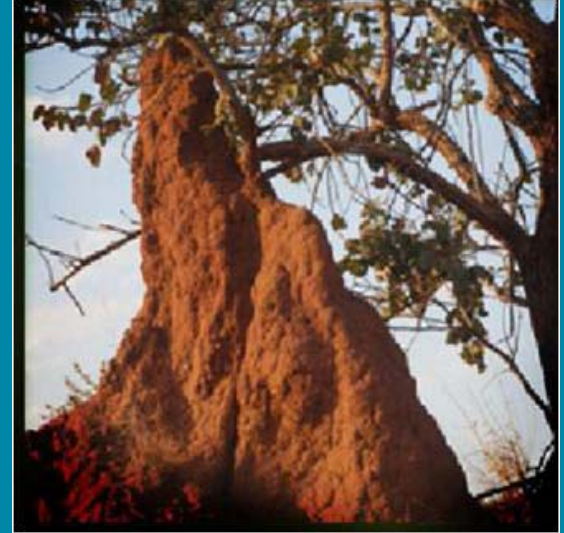
# New glues

- Mussels use thread-like flexible tentacles to attach under water – this has lead to the development of formaldehyde-free wood laminate glues



# Passive heating and cooling

- Termite mounds maintain a constant temperature using tunnels and vents – this has been used to design a passively heated/cooled building in Zimbabwe



# The future of design

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- Over the next 20 years, how we produce products and the type of products we use will change dramatically
- Consumers internationally already want to know more about the products they use
- Greenwash is no longer acceptable
- NZ will need to think seriously about its future direction if it wants to compete





Investing in Innovation  
for Business Growth



**Enterprise North Shore**  
The Economic Development Agency  
For North Shore City

# Funding Innovation

## A strategy for growth

Presented by Chris Lock

Enterprise North Shore, your TechNZ Partner



New Zealand Government

# TechNZ Partner Network

## Enterprise North Shore ... TechNZ's Partner for Auckland and Northland

Enterprise North Shore

Enterprising Manakau

Venture Taranaki

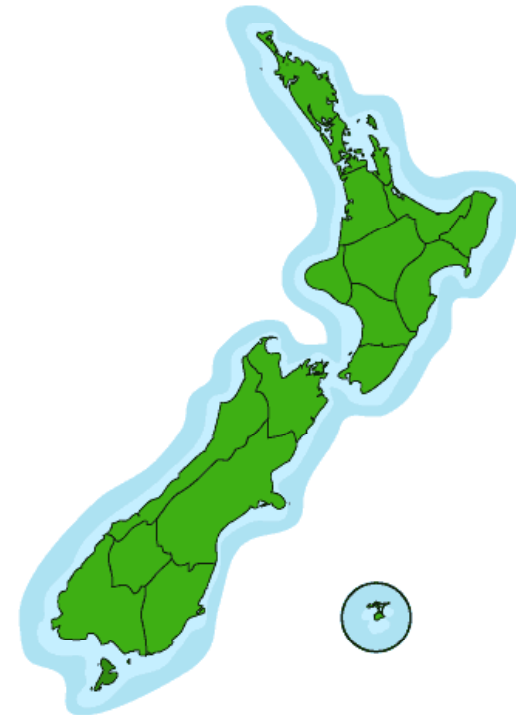
Vision Manawatu

Hawkes Bay Incorporated

Grow Wellington

Canterbury Employers' Chamber of Commerce

Dunedin City Council



# How TechNZ Supports R&D

## Basic Criteria

- Up to 50/50 co-funding
- Targeted at the barriers to further development
- Does company have management, governance expertise and resources
- Market and Growth Focused
- Desire to Grow with clear vision and focus

## Eligibility Criteria

- GST registered
- NZ registered company, sole trader or incorporated society

# Key Factors we look for

## Pathway to market

How do you intend to connect with your market, are channels in place, what history do you have and are you ready and able to go selling?

# Key Factors we look for

## Technical stretch

Will the R&D stretch the company's capacity and capability?

What are the risks and how are they to be mitigated?

# Key Factors we look for

## Benefits to NZ

Value proposition and revenue growth projections?

IP is considered and has a strategic approach?

# Key Factors we look for

## **Ability to deliver**

Financial capability to co-fund the project is sound?

Management and technical expertise to direct the project?

Is there a formal planning structure in place?

Focus on the goal

# Key Factors we look for

## Integrating R&D into the business plan

Too many companies allow themselves to be controlled and boxed in by their ideas trying to get out

Research and Development Line -----





# Key Factors we look for

## Integrating R&D into the business plan

We look for a holistic approach which synchronises the R&D investment with company-wide preparation and investment to ensure the vision is achieved.

Marketing and Sales -----

Financial and Corporate Planning -----

Administration and Operations -----

Manufacturing and Logistics -----

Research and Development -----



# Key Factors we look for

We look for and encourage expertise



“An EXPERT is someone who has succeeded in making decisions and judgements simpler through knowing what to pay attention to and what to ignore”.

*Edward de Bono - Lateral Thinking Guru*

# Global Expert Your Knowledge Network

Give us 15 days and we will find the right people with the right skills, who are available to help your company solve its challenges from concept to commercialisation and all steps in between.

TechNZ helps companies find the ***Right Expert***



# How does Global Expert help your business?

- Save time and money
- Reduce time to market
- Make better decisions faster
- Get the world's best on your team
- Better connections lead to business growth, improved capability and increased exports



Enterprise North Shore  
The Economic Development Agency  
For North Shore City



Investing in Innovation  
for Business Growth

# Exciting new offer - find and fund experts

- Funding support for the experts fees on a matched 50/50 basis
- International search: \$1,995 plus gst
- New Zealand search: \$495 plus gst

# TechNZ Investments and the Role of the TechNZ Partner



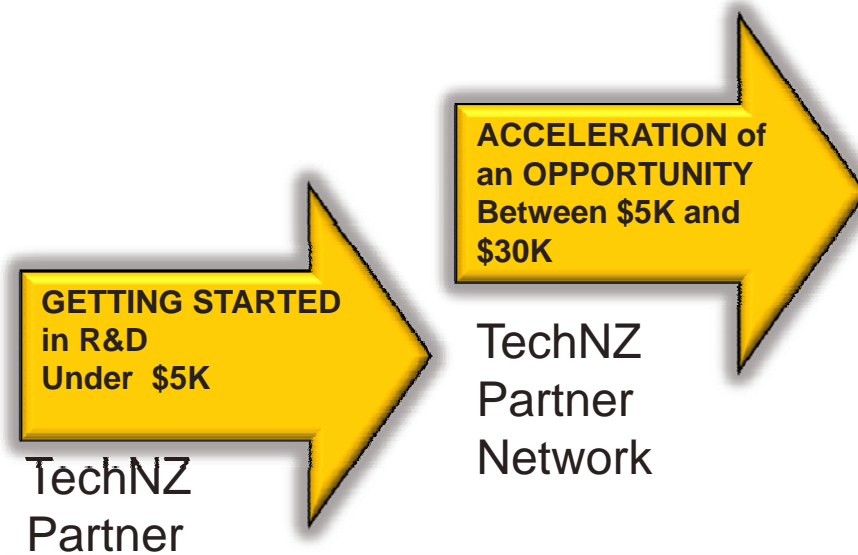
**GETTING STARTED**  
in R&D  
Under \$5K

TechNZ  
Partner

To help overcome an initial R&D problem, get strategic advice, scope a new project or to check your freedom to launch the new IP into a crowded market and not be blocked by existing IP.

Provides up to \$5,000 on a 50:50 basis to contribute towards the cost of a single external expert.

# TechNZ Investments and the Role of the TechNZ Partner

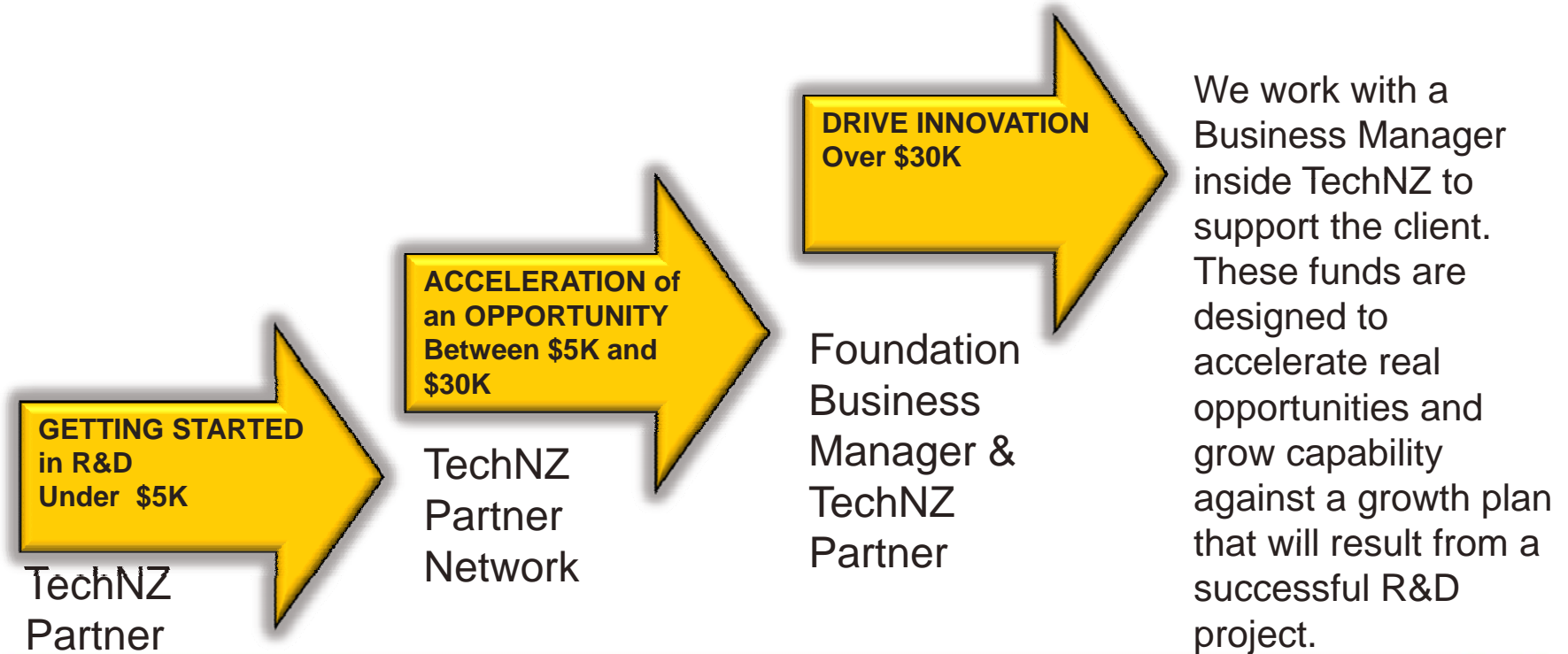


To assist in the implementation of the R&D project supporting up to 33% internal man hour costs and at least 67% external expertise. Can provide for more than one expert to as well as some items related to the R&D project.

Is generally used of a couple of external experts to focus on key milestones in the R&D project, also is often applied to having expert advice in scoping a major project.

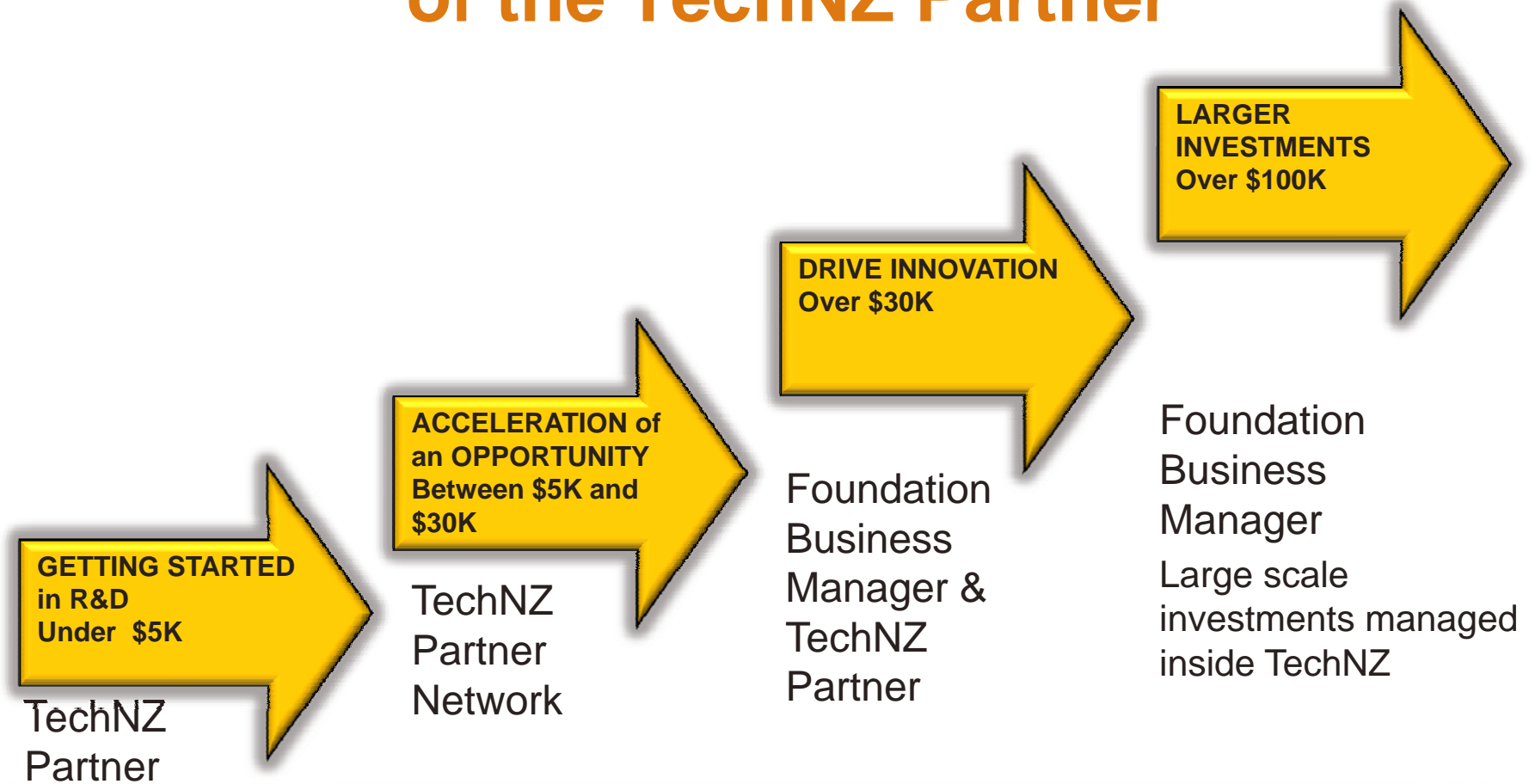
Provides up to \$30,000 on a 50:50 basis to contribute towards the costs of the project manager or key internal staff and the external experts contracted to support the project.

# TechNZ Investments and the Role of the TechNZ Partner





# TechNZ Investments and the Role of the TechNZ Partner



# TechNZ Investments and the Role of the TechNZ Partner

We look for

- Top students who will benefit from the project and
- Who will benefit the company to
- Overcome a technical stretch



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TechNZ  
Partner



TechNZ  
Partner  
Network

# TechNZ Investments and the Role of the TechNZ Partner

We look for

- Top students who will benefit from the project and
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# Tips for a successful application

- **Get good advice and an advisor...**  
Initially contact your local TechNZ Partner
- **Seek information...**  
Before spending a cent!!!  
Investment funding starts from the date the project is approved
- **Understand the process...**  
It is important, good business practice and straight forward
- **Be patient...**  
Give sufficient time in planning your application

# Enterprise North Shore

## Contact Details

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Enterprise North Shore

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