

# *passionate about innovation*

*While New Zealand ranks well down in a global study of innovation,  
it does have some stunning examples of innovative companies.*

Sharon Cuzens investigates how we can collectively improve our performance.



(far left): Bruce McIntyre – “one characteristic of an innovative company is constant reinvention to make your own products obsolete”.

John McCombe

(left): Ed Bernacki – “if you want to foster innovation you have to foster innovative thinking – and you need to plan for this to happen”.

“THERE ARE TWO ways to be successful and encourage growth – by doing the same thing, only better, or by doing better things,” says WestpacTrust chief economist Adrian Orr. “Most growth in recent years in New Zealand has been from doing the former – more volume and increased production. What we need to do is think differently about how we can use our resources and intellectual capital. We need to do better things.”

According to the Global Competitiveness Report 2000 produced by the World Economic Forum, most goods and services produced in an economy are completely transformed within a generation, replacing older goods because they produce higher value-added ones. “Since growth is nothing more than a rise in value-added per person, innovation and change are clearly central to economic performance,” the authors conclude.

So how does New Zealand fare compared with its trading partners and competitors?

#### ECONOMIC CREATIVITY

In the report, Dr Andrew Warner of Harvard University says faster-growing countries over the past decade have tended to be those with high scores on an economic creativity index that combines measures of innovation and technology transfer with the ease in which new businesses can be started up.

The index balances factors such as a country’s spending on R&D and its number of technical and scientific research institutions against how a country’s business leaders rate it as a technological leader, the

number of patent applications, the extent of intellectual property protection, access to venture capital and so on.

It provides a snapshot of how innovative, creative and successful a country’s business community can be considered to be.

Overall, New Zealand doesn’t rate well in comparison with the countries we like to measure ourselves against. Our rate of technology transfer – making use of technologies developed elsewhere – is relatively high, while for innovation we score below Israel, Taiwan, Singapore and most major OECD countries.

New Zealand ranks a little better for ease of new business start up, giving us an overall placing on the economic creativity index of 22 out of 59 countries – between Hungary and Malaysia, and well below Australia, Ireland, Canada, the UK, US and even Iceland.

So what can we do to improve? And what about the companies that are doing well – what are they doing right?

#### MANAGING IDEAS

Ed Bernacki, a writer and international speaker on innovation in business, believes that creativity is about finding ideas, while innovation is about making money from them. Results from an international PriceWaterhouse Coopers study of 800 companies bear this out. “The one thing they found that makes companies innovative is their ability to launch new products and services regularly. Around 25 percent of

their revenues had to come from products and services that didn’t exist three years previously,” he says.

And the best performers did this not by waiting for one big idea to come along, but by focusing on their processes. “What these companies do really well is to have well defined ideas management policies. Nothing happens in business unless you manage it and you should be managing your ideas like cash.”

Innovative thinking in the top companies isn’t restricted to product design and development. The PriceWaterhouse Coopers study showed the same problem-solving and brain-storming techniques needed to develop new and better products were used to improve all of the company’s internal processes. “The whole company is fully capable of being innovative. It’s a real powerful insight – especially when you look at the traditional pattern for many companies of the executive going on retreats, getting ‘the wisdom’ and coming back to throw it at the staff. There is real value in having the contributions of all the staff all the time.

“Innovation to a lot of people means research into new software or technology or biotechnology. It can be much broader. If you want to foster innovation you have to foster innovative thinking – and you need to plan for this to happen.”

#### CONSTANT REINVENTION

Bruce McIntyre, company leader of Christchurch-based Macpac Wilderness Equipment, agrees with this idea. The



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(far left): Clive Elliott – “our laws should be consistent with the most up-to-date economies in the world”.

(left): Chris Lock with SLAB speakers which are super-thin and scalable across a wide range of sizes and shapes. Nigel Marple

company is world-renowned for its top quality outdoors equipment, including packs, clothing and tents.

“Innovation is about trying new stuff all the time,” he says. “One characteristic of an innovative company is constant reinvention to make your own products obsolete.”

“Passion” is a word that comes up a lot in connection with Macpac. “We are a passionate company,” says Bruce McIntyre. “And one of my jobs is to keep that passion alive. We do that through employing people who want to make a difference.”

The contribution of every staff member to the company’s purpose – to inspire people to explore the natural world – is taken seriously. The business is structured around a team format and its structure is constantly changing. “We spend a lot of time working on the organisational side of the business. We’re always looking forward to five years out and seeing if the current structure will get us to where we want to be.”

An innovative salary system rewards employees for the skills and knowledge they bring to the company and what they’ve contributed to the company over the previous 12 months. All salaries are negotiated annually with workmates, while performance reviews are highly motivational and linked to personal development plans that include educational opportunities.

All company information is available to staff with profit/loss and sales performance

reported to the whole company every month.

“The design team is the core of the process. Everyone in the marketing side of the company is involved: people in sales, those doing the repairs – they’re the ones that see what wears out – plus anyone that’s an outdoors person.” And that includes most of the company, as experience in and a passion for the outdoors are sought-after attributes in Macpac’s employees. “Everyone has the opportunity to have a say in product development.”

Macpac’s strategy is to constantly improve its products. Bruce McIntyre believes too many companies lose sight of their customers in a drive to make money. “And a lot of companies lose their market because they stay on the same product too long. Macpac is about making great products for great customers. If you’re doing the job right, money will come along.”

### DESIGNER EDGE

Ed Bernacki suggests that Macpac’s emphasis on design as the core of its business process is something that could be emulated by many more New Zealand businesses looking for an edge in the world market.

“My impression is that New Zealand companies *can* target a niche area and they seem to be good at design. Macpac works really hard at coming up with good design. And design innovation goes further than just producing ‘stuff’. Look at a company like Les

Mills. They design training programmes that are licensed and sold to thousands of gyms all round the world. They’re a service company teaching people all over the world to sweat.”

Dorenda Britten of Christchurch-based *designindustry* Ltd believes design is what connects engineering to human need. “Engineering is largely to do with having a process and seeing what you can do with it. So often what we have are engineering solutions that don’t connect to what people need.”

*designindustry* was conceived as a platform to facilitate connections between different players in the market – government institutions and private companies – to encourage them to understand what design can offer. “This will bridge the gap between technology and creativity, assisting in the development of high-value innovative products.”

Through workshops, exhibitions, lectures and creating networks linking designers with industry, Dorenda Britten wants to establish Christchurch as a centre of design excellence for New Zealand. “We want to explore what design is, then use it to add value to exports and to our lives. We want to explore how we might do things better and create new solutions.”

### AN ELECTRIC VISION

Design is a vital component of the success of Ashburton company *designline*, which

**“You have to look at the countries succeeding today. They invest a lot of money in research and they protect their innovation assiduously.”**

***“There has been a general neglect of innovation and research and technology over recent years and this is reflected in the way intellectual property laws have been neglected. We are still working under legislation dated 1953.”***

is becoming recognised as a world leader in hybrid vehicle development. With funding help from Technology New Zealand, *designline* has combined a Capstone Micro Turbine powered by LPG with a new, efficient battery management system, producing one of the world’s first low-emission electric hybrid vehicles to operate commercially.

The gold and green buses are a familiar sight in Christchurch where they operate a free shuttle service around the inner city. Their contoured curves are the work of designer David Thornley who has collaborated with *designline* on a range of vehicles built for specific markets.

Marketing consultant Therese Banks has worked with *designline* since it was established in 1985 by managing director John Turton. She says the company survived the recession of the late 1980s by staying focused on niche products. “John moved into smaller, sophisticated community buses and specialist touring buses designed for specific routes, such as the Fiordland scenic route. He also had a vision of developing an electric vehicle and was able to gather around him experts to work on integrating the drive management system into the bus.”

*designline* outsources much of its design, development production and marketing to keep down costs and to encourage new ideas. “John employs more than 60 subcontractors to complement the work done in the *designline* workshop.”

Quality control processes are clearly defined, with one contractor picking up from another and knowing the standards and checks that must be carried out.

The hybrid vehicles have met with considerable interest overseas. One has already gone to Hong Kong and another to Japan where the Tokyo Electric Power

Company is interested in marketing the vehicle to bus companies there. “It’s a remarkable achievement for a vehicle to be shipped to Japan, so well regarded for its automotive technology,” says Therese Banks.

*designline* plans to develop the buses’ drive system into a kit that can be put into bus bodies overseas, overcoming shipping difficulties. And the process of developing new ideas goes on. “Even in the middle of the electric vehicle project, John is evaluating new ideas and meeting with his development team – which is entirely outsourced – to discuss, for example, electric rubbish trucks.”

#### PROTECTING INVESTMENT

For innovation to pay off, investment in research and development needs protection and support – the most important aspect being the protection of intellectual property. Auckland barrister Clive Elliott deplores the lack of action in New Zealand on updating intellectual property legislation. “There has been a general neglect of innovation and research and technology over recent years and this is reflected in the way intellectual property laws have been neglected. We are still working under legislation dated 1953.”

He compares that with the situation in Australia, where he says intellectual property law reform receives close attention from a number of bodies working together to refine the laws.

“Just one example of where we’re out of step is the concept of novelty. To get a patent you have to show that an idea is new or novel. Overseas, that means showing that an idea is novel everywhere. In New Zealand law, we only have to consider if an idea is new to New Zealand.

“If our laws are not up to date, some companies will not want to invest in tech-

nology here. Our laws should be consistent with the most up-to-date economies in the world, and that will provide us with a climate for investment as good as anywhere else.”

The cost of patent protection is seen as a barrier, particularly by smaller businesses. “People are happy to accept substantial costs in advertising, but not in putting together a decent patent portfolio. It’s a mindset that doesn’t place enough value on R&D. We need to educate people on why you invest in R&D and why you should protect it.”

Justin Hygate of the Intellectual Property Office of New Zealand (IPONZ) says any changes to New Zealand’s intellectual property legislation are waiting for the outcome of the Royal Commission on genetic modification and the resolution of outstanding Treaty of Waitangi issues on flora and fauna. “At ministerial level, there is currently a lot more energy to drive these changes because of the natural relationship between the knowledge economy and timely IP protection systems,” he says.

As for cost, he points out that New Zealand’s statutory costs for registering a patent are among the lowest in the world at only \$250. “The bulk of money that is paid for IP protection goes to lawyers for preparing the specifications. If you’re looking at international protection, that means significant amounts of money, with attorney fees for each country it’s being lodged in.”

Justin Hygate says IPONZ prides itself on the efficiency of the service it offers businesses, with trademark searches, for example, being processed in only five days. And while Clive Elliott agrees IPONZ is doing a good job, he believes more input is needed at ministerial level. “You have to look at the countries succeeding today. They invest a lot of money in research and





Artist's impression of the University of Otago's Centre for Innovation which will open in June.

Adrian Orr – “we need to thinking differently about how we use our resources base and intellectual capital”.

they protect their innovation assiduously. It's no use complaining and saying we're too small and are being left behind. What we do come up with, we need to protect and hang on to. Of course it's expensive, but if we want to compete internationally, then we need to pick areas and dominate them.”

### BREAKTHROUGH SPEAKER TECHNOLOGY

Auckland company SLAB International is looking to do just that with its revolutionary flat panel speaker technology, originally developed in the early 1990s. CEO Chris Lock says SLAB (short for sound lab) has created what has the potential to be a new world standard. “We have no doubt about it – because people are both trying to throw stones at us and to buy us!”

SLAB speakers are super-thin electro-dynamic speakers, scalable across a wide range of sizes and shapes. The depth of the freestanding panels ranges from nine to 18 millimetres.

SLAB is vigorously contesting patent challenges from an international competitor while continuing to pursue the development of technology that has captured worldwide attention. Inventor Graeme Jones initiated the development and was joined by three others, including Chris Lock, in engineering forms that could be turned into mass-producible products.

“By 1998 we started it as a business and were confident that we had a real technology we could take to market.”

That confidence was tested with a planned appearance visit at a world fair later that year. “We had less than three months to take the product through final R&D, into application R&D, then into concepts for pre-tooling for industrial design and onto the world market,” says Chris Lock. For the fair they created 15 to 20 products, which

immediately created enormous interest.

“We went into production for about five customers at once and achieved total reliability from day one.” This was thanks to careful quality control that saw initial production delayed while mass production issues were sorted out.

The panel speaker systems are being adopted for use in a number of new audio applications including home theatre and high-end stereo. The company is also investigating the application of the technology for the automotive and aviation markets.

Interest in other applications of the technology has come from organisations such as NASA and Boeing, intrigued about the ways in which it could be adapted for noise cancellation. SLAB has followed this up with the establishment of SLAB DSP Ltd which researches, develops and commercialises innovative digital signal processing technologies for audio enhancement and noise reduction.

Both companies license their technology for assembly and distribution directly under the SLAB brand or by companies co-branded as an original equipment manufacturer.

SLAB International has had a timely injection of capital from AMP Henderson Private Capital and Caltech Capital Partners. “The venture capital has injected new life blood and enabled us to go forward as a completely different company,” says Chris Lock.

He says while parts of the business will have to move closer to the markets, the company will retain its New Zealand roots. “I'm just so proud that what we've achieved has come out of New Zealand. Whenever we do business overseas, New Zealand is recognised as a pioneering country that excels – people ask us how we think up all this stuff down here.

“I'm very conscious of the talent of our

people and have a lot of respect for the training and skills young people have brought into our company. It's important to move people much faster forward than they think they're capable of. We're developing relationships with the universities and we have to find a way to keep these people here.”

### CENTRE FOR INNOVATION

The University of Otago is taking links between research and industry a giant step further with the establishment of a Centre for Innovation. This will be a \$8.5 million purpose-built building, fully fitted out to the highest of international laboratory standards, where fledgling companies will be able to research new technologies and develop their commercial potential.

John Scandrett is head of the university's commercial development arm, which is being rebranded Innovate Otago. Innovate Otago plans to move into the new building in June, progressively with anchor tenant BLIS Technologies, another new university spin-off biotech company and two prominent IT organisations.

The centre's 25 research suites will be available for lease on a project-driven basis, John Scandrett says. “We envisage three to four-year tenancies where new intellectual property will be developed resulting in spin-off companies that will create new employment and investment opportunities beyond the university.” Dunedin City Council is supporting the centre with \$150,000 annually for five years, earmarked to attract and assist new tenants.

“Innovation in our terms is the successful transfer of research to the market, with support provided at all stages,” says John Scandrett. Innovate Otago will offer advice on project planning, strategic management,

**“Intellectual capital is completely mobile. If there are no incentives, either ideas leave or people leave.”**

intellectual property protection, commercialisation and financial planning. “The building will also be used to give a profile to what we’re doing in an innovative sense across the rest of the university and will be used to support research objectives across the region.”

Commercial returns from licensing technology and sale of the university’s intellectual property are already bringing around \$50 million a year into the university. John Scandrett says this will expand as researchers are attracted back because of increased opportunities. Researchers already working at the university can be released from their contracts for up to three years to work on projects at the centre. “If they’re successful, they can start their own company. If not, they can go back to their old job at the same level.”

Economist Adrian Orr believes increasing the value New Zealand can get from innovation comes down to creating incentives – allowing business to connect strongly to research and enabling innovators to work with entrepreneurs. “Intellectual capital is completely mobile. If there are no incentives, either ideas leave or people leave.”

What New Zealand needs to do, he believes, is to ensure that we “clip the ticket before these things disappear”. “Innovation needs an idea + money + a connection to the rest of the world.”

If those incentives are in place then, as Chris Lock says: “This country has so much to offer. If we’re successful and go out there, we have every right to be one of the most successful countries on earth.”

## Writing an innovation plan

by Ed Bernacki

*Are you ready to get serious about innovation in your business? Take your strategic plan and add a page entitled ‘Innovation Plan’.*

*Set as its goal: “Create new ways to enhance the value we offer customers and related stakeholders”.*

*Fill in the page, guided by the following advice.*

1. Outline objectives that foster a sense of urgency to solve the problems of the business as well as to create new opportunities. Keep in mind two important points:
  - the sooner you stop a problem, the sooner you save resources that can go into other opportunities
  - the sooner you start a value-adding opportunity, the sooner you create new resources.
2. Make sure the plan cuts across divisions or functions to focus on overall business activities. Build in innovative practices as an underlying day-to-day capability, not a separate function from normal business activities.
3. Include training in the plan. Help staff develop the skills needed to brainstorm, assess ideas, enhance ideas, solve problems and create opportunities. Assist staff in learning how to transform insights into ideas and actions.
4. Develop an agenda to drive the plan.
  - Exactly which problems and opportunities will be addressed?
  - What processes will be employed to address these challenges and opportunities?
  - Can staff budget two or three hours per week to work on new opportunities?
5. Tie the plan to performance appraisals. To strengthen staff buy-in, make sure that the results of the innovation sessions in which staff members participate will be considered when their performance is evaluated.

*At some point, the activities involved with an innovation strategy and plan become the normal way of doing business. This fulfils your goal: people are taking their own initiative to solve problems and offer suggestions.*

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