

# Incubation in isolation: how distance creates the difference in New Zealand Product Design

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Isolation informs design process in New Zealand. Models from the indigenous Maori culture are explored along with the outdoor lifestyle, a record of building on overseas concepts, a capacity for cross-disciplinary teamwork, clarity and a freshness born of detachment, and a desire for a small, distant country to be noticed. Research undertaken for the author's recent book (Smythe 2011) set out to identify drivers of New Zealand product design in relevant contextual circumstances. This paper extracts key findings with greater clarity and applies more academic rigour.

## 1. Isolation nation

Isolation has always been, and remains, a significant point of difference in the development of product design in New Zealand — “the last country in the world to be discovered settled by humankind” (King 2003: back cover). New Zealand's isolation was starkly illustrated by an image in a 2002 government Growth and Innovation Framework document. It showed a 2,200-km radius centred on Wellington capturing only 3.8 million New Zealanders while the same area centred on Helsinki encompassed 300 million people in 39 countries.

## 2. Maori modelling

Although radiocarbon dating suggests New Zealand's first settlers arrived around 1250, some Maori oral histories place the

first migrations at 800 CE. Either way the initial settlement was followed by a long period of uninterrupted development in isolation that allowed a unique design language to evolve.

Maori design deserves to be reclaimed from those who have labelled it ‘art’ — it represents the objects, apparel, environments and visual communications required for daily existence. When the British Museum exhibited Maori ‘art’ from its collection in 1998, Julian Harding wrote:

There is no Maori word for ‘art’. Whakairo, perhaps the closest equivalent, has a basic meaning of design, or as a transitive verb, to ornament with a pattern. The traditional tohunga (expert) in wood carving, weaving, painting, or tattoo did not set out to create a work of art in the European sense. In making a flute or hei-tiki or canoe, he simply provided the means by which the gods expressed themselves in material form. (Harding 1998).

Contemporary New Zealand organisations interested in the triple bottom-line of economic, social and environmental sustainability might find value in traditional Maori values. The forces that shape the Maori world are: **Mana atua**, the sacred power of the gods; **Mana whenua**, the power inherent in the land to allow all things to grow and develop; **Mana tupuna**, the power of wisdom handed down through the ancestors and the responsibilities of leadership, and **Mana tangata**, the power of people to develop skills and gain knowledge. (Marae Melbourne.)

The Maori leadership model supports leading edge twenty-first century ‘design thinking’ positioning design as a central concern



Figure 1. Comparing two countries with similar sized populations — Finland and New Zealand. (2002.)

of the boardroom and executive suite rather than a back room function. Ngati Awa chief Himiona Tikitu's documentation of the many roles of the tohunga (skilled person) included leadership in the making of artefacts and structures vital to the needs of the community. Te Arawa chief Wi Maihi Te Rangikaheke explained that the tohunga was expected, above all, to be accomplished in creative expression which might be expressed in oratory, composing and/or singing waiata [song], wielding the taiaha [long wooden ceremonial weapon], or designing and making meaningful objects. (Mead 1986: 190-191.)

Today's Western management style favours an 'if we can't measure it we can't manage it' approach. Maori creative practice offers the incalculable value of ihi, wehi and wana — aspects of which can be compared to charisma, emotional attraction, 'X-factor', 'je ne sais quoi' and/or the 'tingle up the spine'. **Ihi** [power/magnetism] describes a special vitality present in all life, a human quality which includes personality as well as psychological and spiritual attributes. **Wehi** [fear/awe] is the impact that this power or influence has on other people, and within ourselves, catching us by surprise when the experience exceeds our expectations. **Wana** [thrill/pride] is the physical sensation at the impact of ihi and wehi, the energy rush or thrill resulting from being in the presence of something that moves us. (Kruger 1984: 228-236.)

The measurement of quantitative consistency is the paradoxical purpose of Total Quality Management. New Zealand designers seeking validation for a more evaluative approach might find more inspiration from the Maori model which appears to honour each person in the value-chain — from designer to maker to trader to user — than they could from Japanese versions of the methods that American statistician Edwards Deming introduced in the 1950s.

### 3. Out front outdoors

New Zealanders' capacity to lead the way in the 'great outdoors' became world famous when Edmund Hillary 'conquered' Mount Everest in 1953. His self-effacing heroism is deeply etched in his country's sense of identity and informs continuing confidence in its ability to innovate outdoors. Hillary used his fame to initiate development projects for the people of Nepal. At least one New Zealander used Sir Edmund Hillary to support a product development project.

In 1964 motorcycle merchant turned maker, Johnny Callender, sent Hillary's team a prototype of the world's first purpose-designed farm bike to test on the Himalayan slopes. Hillary's mate Peter Mulgrew expressed his approval by calling it a mountain goat and the name was adopted. But the powers-that-were did not feel inclined to empower an innovative Kiwi with a unique product that farmers desperately wanted. Import licensing regulations were used to block the import of the Suzuki motors until a wake-up call came in the form of an external threat. Callender had sent a nice photograph of himself, Sir Ed, Peter and a Mountain Goat to Suzuki so they could share in the heroic affirmation. Suzuki was so impressed it had the photo blown up and used as a backdrop to its motorcycle display at the 1965 Tokyo Motor Show — a display that included an exact replica of the Kiwi bike! Bureaucrats realised Callender might be onto something and granted the licence. But when import restrictions were removed in 1970 the company that had bought the Mountain Goat business stopped production in favour of becoming the agent for Honda farm bikes. (Callender 2008.)

While the Mountain Goat stalled in the face of international competitors, the Mountain Buggy jogged relentlessly into global markets. Jogging for health and stamina had been invented by New



**Figure 2.** from left: Basalt tiki [axe] found at Makakihi, South Canterbury — possibly among the oldest made-made artefacts made in New Zealand. It is claimed to be from the early Kai Tahu (Waitaha) Nga Kakano period, 900–1200. (Mead 1984.) (Otago Museum collection, photo: Athol McCredie.) Hinaki [eel/tuna/lamprey traps] fabricated from mangemange, a climbing fern — cleverly designed to lure eels in but prevent them swimming out. (Auckland Museum collection 23518.) Kaitaka [flax cloak with border] — honouring the skill of the maker, the mana (prestige) of the intended wearer and the importance of the occasions at which it will be worn. (Auckland Museum collection ETH815, photo: Krzysztof Pfeiffer.)



Figure 3. from left: The Fairydown brand received a boost when Ed Hillary and Sherpa Tensing Norgay used their parkas and sleeping bags during the successful Everest assault. (Mouton Noir.) The 1000th Mountain Goat, a Model 104 made by Motor Components c.1970. (Laurie Callender.)

Zealand athletics coach Arthur Lydiard. When keen Kiwi fitness fanatic and new father Allan Croad saw advertisements for Phil Baechler's Baby Jogger in American fitness magazines he decided to develop an off-road version. Croad's Mountain Buggy was born in 1992 and progressed steadily to volume production over the following decade. Urban-friendly innovations made it easier to fold and fit in a car. Export markets took sales beyond 20,000 by 2000. Recognition of leadership came with British and Italian, Dutch and Belgian awards in 1998 and 1999. (Croad 2002.)

Phil & Ted's Most Excellent Buggy Company was established in 1993 and began to gain momentum three years later when a new owner initiated a design upgrade of its rather "agricultural looking" product. Its world-first innovations for three-wheeled buggies included a swivelling front wheel (considered dangerous by fast joggers), extendable handles, laid-back support for newborns and in-line seat attachments for siblings. A 2005 branding overhaul, credited with creating a tenfold increase in overseas sales delivered a communication strategy inviting beleaguered parents to 'adapt & survive'. Growth was driven by design while manufacturing was outsourced to China. Phil & Teds turned over US\$150 million in global sales in 2008 compared to Mountain Buggy's NZ\$30 million in 2007.

Meanwhile Mountain Buggy's owners were determined to keep manufacturing in New Zealand despite a rising dollar reducing

the margin on the 90% of production that was exported. In 2009 the heavily indebted company was placed in receivership then bought by Phil & Teds as a going concern.

**Further faster**

The preceding story demonstrates a New Zealand characteristic: a capacity to pick up new ideas and take them further faster — helped by being outward looking and isolated. Bill Gallagher read about electric fences and Bill Hamilton read about jet propulsion on water in Popular Mechanics magazine. Both Bills reckoned the state-of-the-art was inadequate. A number of New Zealand entrepreneurs developed technology for electrified pasture management. In 1990 this cluster was used as a case study in a New Zealand version of Professor Michael Porter's *The Competitive Advantage of Nations*. New Zealand's electric-fencing industry was used to exemplify the effect that innovation, ongoing development, clustering, sophisticated home demand, sector co-operation, intense rivalry and internationalisation had on creating world-leading businesses based on manufactured products. (Crocombe 1991.)

Although the Gallagher brand became the global leader it has not rested on its laurels since adding a 2009 business award for Best Commercialisation of Intellectual Property to its many accolades. Industrial design and brand building now play a much larger role in driving innovation and value. (Parker 2012.)



Figure 4. from left: Mountain Buggy evolution 1992-2002 (Allan Croad). Phil & Teds Vibe c.2010 accommodates two offspring while the Sub4 2011 updates the original Baechler concept (Phil & Teds).





Figure 5. from left: *Gallagher Electric Fence* immortalised on a postage stamp. (New Zealand Post.) *Gallagher Battery-powered Energizer* c.2006. *Gallagher Smartfence* (right) makes handling and relocation easy. (Gallagher Group.)

New Zealand is at the ends of the earth and Irishman's Creek is in the back of beyond in New Zealand's South Island. That extra level of isolation can be credited with amplifying the inventive energies of Bill Hamilton. Rather than wait for electricity to be reticulated to his remote family sheep farm he built his own hydro dam. Rather than import expensive earth-moving machinery he designed and built his own. His innovative Scoop and Loader Dozer attracted customers so he developed an earthmoving equipment business that soon outgrew the farm sheds and moved to Christchurch city in 1951. That left Bill financially and physically free to pursue his real passion — finding a way to travel upstream — fast — in the shallow braided rivers of Canterbury. (Hamilton 1969.)

His first attempt, using a centrifugal jet propulsion system described in *Popular Mechanics*, achieved only 17 km/h on his calm hydro lake. Trial and error involving many people with a range of knowledge and skills led to the development of the world-leading Hamilton Jet enterprise. Engineering design created the technological breakthroughs. The resulting experience of travelling through previously inaccessible scenic environments initiated New Zealand's leadership in adventure tourism. (Bloxham & Stark 1994.)

#### 4. Egalitarian teamwork

New Zealand does not have any more brilliant designers per square metre than any other country. But it does demonstrate a capacity for interdisciplinary teamwork grounded in a heritage of egalitarian ideals, an essential versatility and its intimate

scale. It is present in New Zealand's world-class film industry where cross-disciplinary collaboration, grounded in versatility and innovation, is taken for granted by locals and promoted as a benefit. (Film NZ.)

With the help of the government-run Better by Design programme, established c.2003, integrative design thinking is enhancing the inclusion of rational and emotive criteria in the product development process as well as underpinning corporate cultures. While overseas models have been sought out, New Zealand examples of design-driven success have also been available to persuade the unconvinced. (Better by Design.)

In 1939 the unexpected introduction of import licensing regulations transformed the New Zealand importer of home appliances, Fisher & Paykel, into a manufacturing enterprise. Unlike many enjoying the benefits of protectionism, Fisher & Paykel has always seen value in investing in its own research and development. This was typically engineering based with industrial design used mainly to add aesthetic appeal. Design graduates' efforts to explain that their contribution could be more than skin deep were increasingly heard as the company expanded export markets and then confronted international competitors at home after protectionist policies were removed in the 1980s.

The brand-positioning breakthrough came with the DishDrawer, launched in 1997. The board had concluded that a European look-alike could not compete and only a paradigm shift would prevent the closure of the dishwasher line. The success of the SmartDrive washing machine had been grounded in advanced



Figure 6. from left: *Loader Dozer*, c.1943. *Early jet boat trial* in a shallow river, mid-1950s (Hamilton Jet). *Jet boating* as an adventure tourism experience (Lifestyle Publishing).



Figure 7. from left: Fisher & Paykel SmartDrive washing machine, (1991). Fisher & Paykel ActiveSmart refrigerator (1995). Fisher & Paykel DishDrawer (1997). (Fisher & Paykel).

engineering design. The Quantum Project had added elegantly articulated self-confidence to the hidden electronic ingenuity of the ActiveSmart refrigerator. But it was the DishDrawer that stopped customers in their tracks. It was the first project in which end-user interaction had initiated innovative engineering — and its point-of-difference was instantly apparent. (Davies 2004.)

In 1996 Formway Design Director Noel Brown had explained the company's approach to design-led growth: "There is no place at Formway for *prima donna* designers, autocratic managers or other inhibiting dinosaurs from the age of hierarchical management." (McDonald 1996.) After the Formway Free desk system won an unprecedented two gold medals at the NeoCon 99 World Trade Fair, for 'Alternative Office' and 'Computer Support', designer Mark Pennington explained how an unheard of company at the bottom of the world could lead the way:

Our approach to the design challenge is pure Kiwi — down home ingenuity and teamwork. We simply don't accept that a thing can't be done, just because it hasn't been! 'We've always done it this way' is no reason to accept it's the best way. (ProDesign 1999: 13.)

One of New Zealand's oldest companies — Methven, established in 1886 — demonstrated the benefits of design-driven cross-disciplinary teamwork when it shifted its focus from producing plumbing hardware to creating enhanced user experiences while saving water and energy. Its SatinJet shower technology, housed in increasingly well resolved fittings, attracted hotel chains seeking both cost-savings and improved customer service. A suite of international design and water efficiency awards gained between 2007 and 2009, as well as New Zealand's 2008 Design in Business Award, affirmed Methven's leadership and expanded the market for its core tap and mixer products. By 2009 exports were accounting for 73% of sales and financial results were withstanding the sudden global downturn. (Sneddon 2010.)



Figure 8. Formway Free designing system licensed in the US to Bretford. (Formway Design.)

## 5. Uncluttered clarity

New Zealand's isolation provides an environment of comparatively uncluttered clarity that enables fresh thinking. Evidence to support this proposition has come from a number of sources.

The shift from import replacement manufacturer to competitive global brand has required Fisher & Paykel to move manufacturing operations closer to markets. The question has been asked: Why continue designing in New Zealand? The company's Industrial Design Manager, Mark Elmore, sees great advantages in cross-disciplinary teams being able to immerse themselves in 'the state of the art' across global markets and then step back to take a fresh look at the core issues. He sees detachment from the mainstream as enhancing original thinking and enabling development 'under the radar' of curious competitors. (Elmore 2010.)

The success of the DishDrawer initiated a wide-ranging 'kitchen of the future' development which has evolved into the Social Kitchen concept where appliances align with living-space interactions rather than out-of-the-way chores. As well as being suited to varied locations in the home, the CoolDrawer will save energy because cold air does not fall out as it does from a front opening refrigerator. The CookSurface provides additional bench space between cooking functions. Its control knobs, burners and trivets rise silently from the surface at the press of each knob.

Formway workspace furniture has rapidly penetrated world markets through licensing distributors who are already established in target markets. Formway's transformation from local manufacturer to global design studio accelerated when Knoll International became the licensee for the Life chair (launched 2002) and the Generation chair (launched 2009). While walking to dinner in New York with Knoll CEO Andrew Cogan in February 2010, Formway chairman David Thompson thanked him for his patience and



Figure 9. from left: *Methven SatinJet* — patented colliding jetstream technology offering a gentle, soothing experience while using much less water. *The SatinJet flow* (left) compared to conventional shower head (right). *Kiri Ultra Low Flow* shower head using even less water. (Methven.)



Figure 10. from left: *Fisher & Paykel CoolDrawer* (2008) — a world-first with five temperature settings from chill to freeze. *Fisher & Paykel CookSurface* — ceramic cook top cleanliness with gas cooking performance. (Fisher & Paykel.)

apologised for being a small company from the back of beyond consuming too much of his time plaguing him with calls and questions. David recalls:

He stopped me on the sidewalk, looked me in the eye and told me that Formway was his most cherished relationship & As he saw it, a component of our value was that our distance from the large markets of North America and Europe produced a valuable perspective — always clear, visionary, and creative. (Formway Design 2010.)

More general affirmation came in January 2011 when the British Foreign Secretary Willaim Hague stated that New Zealand is “a hot-bed of innovation and is known as such in the UK”. (Young 2011.)

English immigrant David Trubridge’s internationally acclaimed lighting designs draw knowledgeably and respectfully on the environment and cultures of New Zealand and the Pacific. Concern about his distance from markets led to a kitset range that reduces his carbon footprint while allowing customers to participate in the joy of making. Trubridge says that distance enables him to experience, feel, think and create in a fresh way that would not be possible if he was immersed in the pressures, distractions, bureaucracy and historical baggage that clutters the world’s design capitals. (Trubridge 2011.)

The Yike Bike offers an example of a New Zealander taking a fresh look at an innovative product. Christchurch serial inventor and entrepreneurial engineer Grant Ryan began by evaluating Dean Ka-

men’s Segway, launched 2001. He assembled a team to develop a more compact personal transport device that could be carried on public transport and into buildings. The simplest device for forward motion — the unicycle — was considered. A small rear wheel provided stability while a simple folding mechanism collapsed it into a compact carry-pack form not much bigger than the main 50-cm wheel. The use of carbon fibre provided strength while keeping the weight below 10 kg. (Ryan 2010.)

The Yike Bike was launched at the August 2009 EuroBike trade show in Germany. Three months later it was included in *Time* magazine’s ‘50 Best Inventions of 2009’ — it was number 15. Back in New Zealand it won the supreme Purple Pin for product design at the 2010 Best Design Awards.

## 6. A need to be noticed

Finally, it must be admitted that New Zealand’s small size and isolation breeds attention-getting behaviour. This is reflected in the manufactured artefact that has risen to the status of Queen Bee of Kiwiana. Other countries may have iconic erections like Big Ben, the Eiffel Tower and the Statue of Liberty, but New Zealanders have reached for a friendly, gutsy, noisy little object that can make its presence felt despite its size — the Buzzy Bee, introduced c.1940 and still going strong. Isolation is a defining factor for New Zealand design. Designing at a distance creates the difference.





Figure 11. from left: The Formway *Life* chair won Gold at NeoCon2002 while its *Generation* chair won Gold at NeoCon 2009. [Formway Design.]



Figure 12. from left: David Trubridge *Body Raft* attracted attention at the 2000 Milan Furniture Fair. *Kina* is among the lamp shade designs now offered as kitsets – 52 kits fit the space needed to ship one assembled unit. [David Trubridge.]



Figure 13. from left: *The Yike Bike* in use, unfolded and folded. The handle bars wrap around behind the rider and accommodate headlamps at the front and break lights and indicators at the back. [Yike Bike.]



Figure 14. from left: *Buzzy Bee*, New Zealand, c.1940. [Art + Object]. *Fisher Price Buzzy Bee*, US 1950. [thisoldtoy.com] *NZL 84 keel bulb* on Emirates Team New Zealand boat competing in the 2007 America's Cup regatta — affirming Buzzy Bee's iconic status. [buzzybee.co.nz/news]

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\* Refers to text drafted for the book — Smythe 2011.

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