

Sir Paul Callaghan: Wellington

Tribute to a star scientist, communicator and no-nonsense champion of NZ Inc.

Were Sir Paul Callaghan not a world-leading scientist, mentor, businessman, author and economic activist, he'd be great on the stage. Delivering Victoria University's inaugural chancellor's lecture at the Wellington Town Hall on September 14, he quickly wins over a full house with his warmth, comic timing, and compelling argument for how to steer New Zealand toward a prosperous future. As I listen, unexpectedly riveted, the talk takes a personal turn.

Flashing up onscreen is a scan showing his terminal cancer before and after it was shrunk (though not cured) by a \$28,000, four-cycle treatment of Avastin, a drug funded by governments in Australia and Canada, but not here. His previously chatty tone is suddenly full of fire as he admits he's lucky he could afford what many others could not – and he's not dissing Pharmac's priorities or our healthcare system, but simply making the point that if New Zealand doesn't lift its prosperity, the gap between what our health system provides and what medicine can offer will widen. As he reminds us, New Zealand can either earn more money, or spend less on healthcare, superannuation, the environment, Christchurch...

Over the past five or so years the game-changing physicist in the fields of nanotechnology (manipulating matter on an atomic and molecular scale) and magnetic resonance has tackled a wider brief: meticulously investigating the best agenda for New Zealand's economic growth. Enter his 2009 book *Wool to Weta: Transforming New Zealand's Culture and Economy*. Now, just as he translated science to the masses through his National Radio talks with Kim Hill, his mission is to get a message out to us all: that New Zealand can and must lift its economic game to be a country with a bright future, a country worth living in. And he hasn't



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just got the why, he's got the how.

In 2011 the Wellingtonian became a trustee of Pure Advantage, an organisation set up in July by business leaders to promote the growth of a green economy in New Zealand. Pure Advantage's message? The global green economy will soon be worth \$7 trillion, and New Zealand can grab a piece of the pie by living up to and leveraging its currently undeserved "100% Pure" slogan. Pure Advantage's plan? To work with communities, businesses, government and iwi to help New Zealand become a leading exporter of high-value produce, renewable energy and clean technology.

Of course, action starts with words, and that's why, back at the town hall, Callaghan is proposing a prescription for New Zealand's economic prosperity. I imagine I'm better to spread his message than add to saturation coverage of his achievements, so here's a quick summary (you can also view the lecture online at vimeo.com/29126569).

Sure, he argues, selling milk and tourism has helped keep the country solvent, but if NZ Inc. wants economic growth there isn't much room for more cows or people – and certainly not without ruining what makes this a great country to visit and live in. So how do we do it? Contrary to the belief that only China makes a living making stuff, manufacturing is one of New Zealand's largest export earners, but we don't export flat-screen TVs, plastic tat, or cheap clothes; instead it's medical devices (Fisher & Paykel Healthcare), information services (Datacom), magnetic resonance instruments (Magritek, which Callaghan founded) and so on.

Given our geographical distance from the big markets, Callaghan points out we do best in "high value-added" manufacturing, which contains lots of intellectual property while the cost of making and transporting the product is a small fraction of the price. So he reckons we need to find more "weird" niches too small for the behemoths (Samsung, Apple, General Electric etc) to bother with – and he's sure we can. In 2010, New Zealand's top 10 manufacturing companies made about \$3.5 billion – increase that tenfold and, move over Don Brash, we've just about caught up with Australia.

As he argues, expected gains from "focusing on our strengths", like biotechnology, haven't materialised, while who would have predicted Peter Jackson's Weta would become so big? So, because picking winners upfront is almost impossible, we should encourage investment in underfunded research and development to see what emerges, close the gap between a world-leading scientific-publication rate and a world-trailing patent rate, while protecting the environment and natural beauty that make New Zealand a place where talent wants to live and businesses will base themselves, despite its remoteness from the big markets.

As his talk ends, 1500 people stand for an ovation that leaves my hands sore. My partner and I leave utterly convinced by his argument and inspired to contribute to this vision of society.

In days to come, I keep thinking about the fact that, while fighting cancer, Callaghan's found the time and energy to fight for his country's future. He's the man.

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