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“BIG R – little d” -

Why research doesn't always turn into development.

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It's easy when you look at something from a distance to see the differences rather than the similarities. I have been struck over the first day of the conference as to the similarities between the national innovation systems of our two countries – all the same issues only one has more organisations and more complicated relationships. I want to put a proposition to you tonight – that the way that we think about innovation in the West and in the Anglo-Saxon world in particular, means that we create and harvest less value than is theoretically available – and further – that by changing our perspective – we can create and harvest more of that value.

The study of innovation is made up of contributions from all sorts of different fields, engineering, science, management, marketing, economics, psychology, sociology and even anthropology. Yet despite this broad base, in the Western world our perspective is very narrow.

We need to broaden our innovation horizons and that's the aim of this address. The reason why research doesn't always turn into the development we expect may be different to what conventional wisdom dictates.

Satisficing is a term from economics describing a situation where a goal becomes a constraint, because instead of being a target to exceed, it becomes a threshold of enough. It is a product of cognition and behaviour.

In 1991 Professor Michael Porter suggested that in contrast to maximising Americans who continue their efforts to create additional wealth way past the point where Kiwis put down tools and go to the beach – that Kiwis are satisficers. We all know that's a familiar story right?

Porter was saying that how people think and behave influenced economic performance and that people in different countries think and behave differently. That was the beginning of a fascinating journey for me – the latest leg of which sees me here before you tonight.

I worked in commercial science and science management, economic development and then consulting and over and over again I saw the same story playing out – incredibly hard working and clever individuals and groups of people solving problems, inventing things, making discoveries ----- and then watching as those were hoovered into some sort of innovation Bermuda triangle. Even when the opportunity was revealed we were unable to realise it.

Then I watched with increasing frustration as my wife Helen project managed a development within our aquaculture industry that transformed the way marine biotoxin food safety testing and management takes place around the world – game changing innovations. The new methodologies and systems have eventually been adopted by the EU and FDA regulatory authorities. No small feat!

The work was lauded around the world but at home the industry simply hasn't been able to grasp the immense value on offer. Its horizons are so narrow – its focus on its core business of growing protein, that, even when the opportunities are revealed, it is unable to see how value could be realised from its own intellectual assets. It suffers opportunity myopia. It gives away value.

What I was seeing struck me as particularly odd because all the rules tell us – remove the obstacles, provide the resources and we will see maximum uptake of opportunity – but those rules were wrong – still are! Then I happened upon a reference correlating national culture and entrepreneurial orientation – and that took me on another leg of the journey – my MBA dissertation entitled *The Influence of National Culture on New Zealand's Innovation Outcomes*.

Explaining the under performance of the New Zealand national innovation system has focused on two areas – access to resources, institutional arrangements etc, and what has become known as economic geography – distance from market, small size etc. Our work provides a third dimension that overlays these other factors – how we think and behave and interpret and respond to these other factors and the world around us materially impacts the functioning of the national innovation system. That and subsequent work explains why New Zealand fails to convert its much vaunted inventiveness into productivity, profitability and prosperity. Our research is NZ focused but its findings and conclusions, with relevant interpretation, hold all the same lessons and insights for Australia.

Throughout the Western world there is growing unease – and often puzzlement – over why we are not optimising the returns from our innovation efforts and investments.

It has become a truism in both countries that there are plenty of people with ideas but too few with the ability to see them through into viable commercial outcomes and perhaps even more to the point, able to optimise the opportunities created by those ideas. Tonight I'm going to talk about a highly pervasive reason that is so.

So let's get started with the first four of the five pillars that our work rests upon.

Pillar # 1 – There is a widely held belief that people will maximise their opportunities if they have access to resources and if unreasonable barriers are removed. This is a cultural belief not a scientific one. All people engage in sub-maximising thinking and behaviour. The degree of sub-maximising varies from nation to nation and is a product of national culture. Kiwis it would seem are closer to the satisficing end of the continuum than Australians. In New

Zealand non-economic goals frequently take precedence over business and economic performance.

Pillar # 2: Firms and nations can prosper from exogenous inventions but there is no substitute for implementation. The originators of ideas do not necessarily reap the rewards. The most striking example of this may be that the inventions that drove the industrial revolution mainly originated in France, but it was Britain, because of prevailing culture and capital markets that reaped the rewards. I can only speculate but it would seem that Australians should be stronger than Kiwis on the implementation part of the innovation process where reward is harvested.

Pillar #3: Because they involve people, there is no universal law of management, economics and innovation. To make sense of these laws they must be interpreted into the local “cultural dialect”.

Pillar #4: Innovation is a complex psychological and social process involving the cognition and behaviour of individuals and groups - and how those individuals and groups think and behave varies from nation to nation according to their national culture. So – understanding how national culture influences the way people think and behave within this complex process – what makes them tick as innovators, entrepreneurs, and managers - must improve performance.

National culture is remarkably influential. It is almost impossible to find something that it does not influence in one way or another. Cultural legacies are powerful and pervasive. They have a long trailing edge persisting for hundreds of years after the reasons they developed have passed into history. Culture is pathway dependent and our two nations have surprisingly different pathways, elements of which are often hidden from us by our mythology.

In Australia and New Zealand, our cultures served us superbly as pioneering nations. But put bluntly, our cultures and our mindsets can not adapt fast enough to respond to the frenetic, unprecedented rate of change we now face. You will recall that Darwin believed that it was not the fittest nor the fastest that would survive but the most adaptable. Those nations that are able to adapt, despite their cultural legacies, will be the ones to prosper in the 21st century.

We use the term “culture” very loosely and of course organisational and professional culture have come up several times during the day. So let’s be absolutely clear on what we are talking about here.

National Culture is a socially learned set of mental models & “rules of thumb” that groups of people use to interpret & respond to the world around them, to solve their problems & reconcile their dilemmas. National culture is our “software of the mind”. (Hofstede) Its affect is greater than age, race, gender, religion, education or occupation (Trompenaars) – so national culture usually trumps professional and organisational culture.

Aussies and Kiwis have lots of similarities but there are some essential differences as well and these differences between cousins provide a yard-stick for us to appreciate how profound the differences are between ourselves and many of the cultures we now attempt to engage with, make products and services for and attempt to do business with!

I think our differences are summed up rather well in this blog post by Professor Paul Callaghan, Director of the McDiarmid Institute and current New Zealander of the Year. *“New Zealanders are in no doubt about why we love this place. So why are we so melancholy, so pessimistic? Living next door to Australia, with its vibrant economy and brash self-confidence emphasises our sense of unease.”* That sense of brash self-confidence – and our sense of unease are attributable to the same element of national culture.

We measure and rank national cultures by dimensions. For dimensions like individualism, power distance and how we accord respect, we are quite similar, but when it comes to assertiveness we are oceans apart.

In the Globe study, one of the four international studies my work draws upon, New Zealand scored 3.42, just 0.04 ahead of lowest ranked Sweden. Australia scored 4.28. The highest was Albania at 4.89. That ranked Australia at 22nd out of 62 while NZ ranked 61st.

Behaviour is a complex system and this one dimension has many spill over affects. For instance, for Kiwis it contributes to a debilitating feedback reluctance and it appears to make us more highly susceptible to the tall poppy syndrome that we know negatively impacts

performance and therefore reduces productivity. It affects how our two nations communicate, Australians direct and confident, Kiwis indirect and profoundly understated.

National culture influences how we design and manage organisations, how we interpret and respond to our environment, how we manage people and how we engage with each other and with people from other cultures. It influences how we practise innovation and rather surprisingly – how we fly aeroplanes.

Let me explain because this example demonstrates just how powerful national culture is. Korean Airlines lost planes in 1977, 1979, 1982, 1987, 2 in 1989, one in each of '94, and '97 and four more in '98 and '99. You've got to admit that's a pretty awful record. The Korean President refused to fly with the national airline and the US Department of Defence banned US personnel from flying with them. - - - -

A curious thing was observed. The aircraft were not crashing when the co-pilot was flying. Airliners are designed to be flown by two people functioning pretty much as equals. At that time on the flight decks of Korean Airlines' planes there was an immense power distance between pilot and co-pilot. In simple terms, when the pilot was flying and made a mistake, the co-pilot was culturally inhibited from correcting the pilot. Planes crashed or sometimes strayed into Soviet airspace and got shot down. That's the power of national culture.

A Boeing executive commented *"We construct airplanes for people like us – maybe this is not always right!"*

How pilots control an airplane is culturally influenced.

The key is that strategies, recognising this resolved the issue. Four years later Korean Airlines received an international safety award. That's important too. We are not slaves to culture if we design appropriate strategies.

Now that has profound implications for how we go about designing and developing things.

The literature is characterised by confusion and disagreement around terminology and definitions of creativity, discovery, invention, innovation, commercialisation,

entrepreneurship and their inter-relationships. The majority treat innovation as a single homogenous process. This all makes study of this subject rather challenging.

So here's the fifth pillar. The innovation process is comprised of two principal stages – initiation and implementation. They are roughly equivalent to creativity, invention or discovery, and commercialisation or even entrepreneurship respectively. We spend money in the first part and harvest it in the second.

They require different resources, institutional arrangements, motivations, cognitions and behaviours to optimise their outcomes. There are statistically significant correlations between national culture & these two principal stages. The proportions of people with the cognitive models best aligned with either initiation or implementation varies from nation to nation.

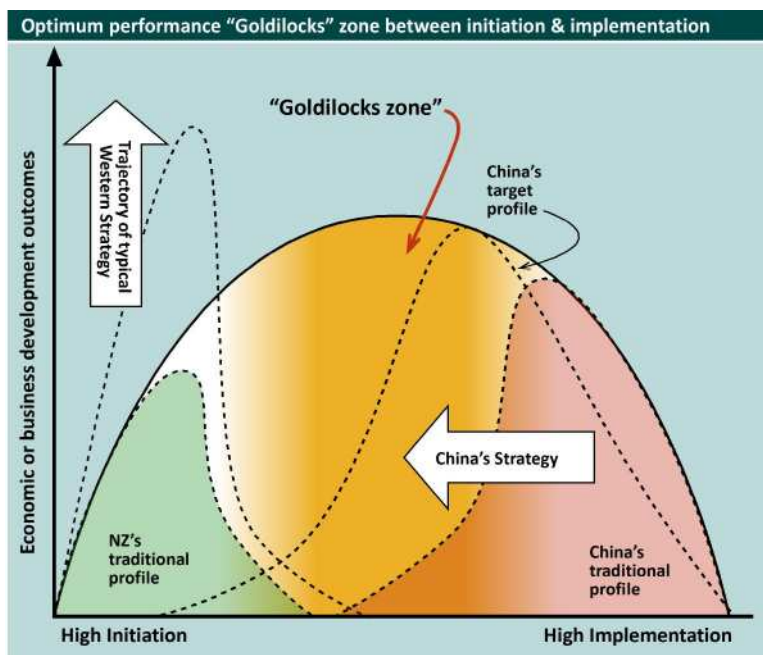
Across Anglo-Saxon nations we have a general bias towards the cognition and behaviour associated with initiation. We love doing new things but are much less inclined towards the cognition and behaviour associated with optimising the creation and harvest of value from our inventions and discoveries. New Zealand appears to exhibit the most extreme bias of all. We both love doing “new stuff” but Australia’s higher assertiveness means it is likely to be more entrepreneurial and better able to harvest reward!

We all prefer to operate in our own comfort zones and for Kiwis that is the initiation stage. Our mindset creates a barrier to transitioning into the implementation stage – so instead of proceeding quickly to customer engagement, proof of concept etc, we suffer from a “pathology of serial initiation” – returning repeatedly to the safety of the lab or workshop and delaying market entry. Then when Kiwis do eventually engage with customers we tend to think for them ---- not like them while at the same time suffering profound feedback reluctance.

Australians I expect will think for customers in a similar way, but because of their greater assertiveness will be a little more tolerant of and receptive to feedback. That has important implications.

Initiating and implementing cognition and behaviour lie on a continuum and I hypothesise that the relationship with economic performance is curvilinear. It seems probable that a firm or nation with a middling ranking for both will do better than one with a high ranking for one or the other. There is therefore a “Goldilocks zone” where cognition and behaviour are “just right” for optimum performance.

Picture this essentially bell shaped curve with initiation on the left and implementation on the right and the Bermuda triangle outside the bell. We will find New Zealand to the extreme left. China by contrast sits over to the right with an implementation bias. China is implementing a horizontal “Mosaic” strategy – deliberately gathering up bits and pieces of initiating capability - to shift itself into the Goldilocks zone.



In the West by contrast and in New Zealand in particular, we favour vertical strategies. We assume that if we thrust more creativity, invention and discovery into the pipeline then inevitably more innovation outcomes will exit the far end. There is some truth to that – we should expect more to emerge but it is far from

an optimal strategy because the vertical strategy will push more of our effort above the Goldilocks zone and out into the Bermuda Triangle. We need to be more inventive about our innovation!

Often this doesn't quite make sense because our own culture is our reference point. Let me illustrate the effect of this. Kiwis think of themselves as engaging, empathetic, and certainly not money grabbing. Australians are similar – although we've already seen – not identical. Yet research for New Zealand Trade and Enterprise by Nielsen shows that in many countries Kiwis

are **perceived** as having a short term transaction approach – only interested in getting the contract signed and the money in the bank, that we have little interest in understanding local culture and demonstrate a take-it-or-leave-it attitude.

There's good news and bad news too. Good for you Aussies and bad for us Kiwis. In India we are viewed as less fun to do business with than Australians!! Kiwis are actually the second least likely to show emotion at work!!

Now the point here is that we don't always get it wrong. For example when we do business with each other and with the Americans and the Brits, our approach is a close match. But guess what – those are Anglo-Saxon countries like us and that's not where our future lays.

A recent PWC survey of CEOs worldwide reported that the majority of companies are shifting their growth strategies away from existing markets and are instead focusing on creating new products and services tailored for different markets. It is increasingly important to know which strategies are appropriate for which markets and to react accordingly. Otherwise our own cultural reference points and biases cause us, like Boeing to design and “package” things for people just like us.

Now just before concluding I want to return to intellectual assets and explore an example of the sorts of tools that we can apply to this situation – because as the Korean Airlines example showed, once we understand these things we can implement very successful strategies.

Leonie talked about South East Water developing and commercialising their assets. That's not a common practice but it offers immense opportunities. Our six step intellectual asset management plan is designed to help businesses discover and extract optimum value from their intellectual assets, many of which are hidden, invisible, out of sight and out of mind. Few if any appear on the balance sheet. Yet it should be the responsibility of every senior manager to be optimising the value of those assets. So the first step is to reveal the assets and enter them into a catalogue. Then their criticality, vulnerability and potential is evaluated. Certainly in New Zealand protection of these assets is much neglected or mismanaged so identifying appropriate protection strategies is the next step. Then we figure out how the assets can be managed to realise increased performance or developed to provide new revenue and profit

streams. And of course – the final step is implementation before looping back into a continuous value creating loop. You'll find a schematic of the plan on the reverse of my cards.

Concluding comments:

Our inherited predominately Anglo-Saxon culture equipped us superbly to deal with the challenges of pioneering nations. Since then though, that cultural legacy has made it more and more difficult to operate in the Goldilocks zone, where, if we are to optimise returns on our innovation efforts and investments, we must live and operate in the 21st century.

Our research shows we focus policies and strategies on the things that we are most comfortable with and that's usually what we are already good at. For optimum performance we must understand the dynamics of our thinking and behaviour and manage both what we are good at and what we are not.

Our current strategies and policies rely upon some questionable assumptions – like maximising, automatic transition of initiation into implementation, universal laws of management (we all respond to stimuli in the same way) - while our preference for vertical development policies and strategies push more of our efforts out into the Bermuda Triangle.

Culture is very sticky. It's associated thinking and behaviour do not change fast enough to respond optimally to the changing demands we now face. That means crafting strategies that build new behaviours that our thinking will follow, consistent with 21st century demands and without conflicting with our underlying national culture. Then and only then do we have the knowledge and tools to optimise the conversion of our "R" into "D".