

The correlation between the cognition and behaviour of New Zealanders and the national innovation system performance

Background

There are strong correlations between economic development as measured by G.D.P. per capita and innovative activity. The success of National Innovation Systems may explain the differences in growth rates under both old and new growth theories. (e.g. Morris, et al, 1994; Lee & Peterson, 2000; Hull, 2003; Pohlmann, 2005; Lundvall, 2006). As such there is nothing of greater consequence to the nation's prosperity than innovation performance and in particular the ability to extract optimum outcomes from innovation efforts and investments. That the nation's productivity and prosperity indicators remain weak despite decades of efforts to improve them is the single most important measure of our innovation performance. (NESTA, 2007) It is equally an indication that something is missing from our analysis and understanding.

Innovation analysis in New Zealand

That we appear on the one hand to be highly inventive, have sound institutional arrangements (McCann, 2009) and best practice policy settings (OECD, 2003), while on the other, do not convert that into the level of wealth that should be expected from the level of effort and investment is a paradox (MED, 2007). Innovation can and should be analysed, planned and managed from a series of perspectives - science, management, marketing, economics and sociology (Razeghi 2008) and even anthropology. In New Zealand we have largely limited that analysis to science and economics providing us with only a partial picture. Traditionally analysis has focused on institutional arrangements (eg Smith 2006, Treasury 2010) and more recently via the economic geography work of Phil McCann at Waikato University (McCann, 2009). Those works are relevant and accurate, but paint an incomplete picture of a complex national innovation system. Innovation is a psychological and social process involving the thinking and actions of individuals and groups of individuals, functioning within those institutional arrangements and economic geography frameworks. (Rank, et al, 2004). How those individuals and groups function, how they think and behave has a material impact on the performance of the National Innovation System. In turn, the cognition and behaviour of those individuals and groups is a function of their national culture and varies materially from nation to nation.

Evidence base

There is credible evidence in the literature and in the author's research that substantiates three key assumptions.

- There are two key stages of the innovation process, Initiation (creativity, invention, discovery) and implementation (where value is created and harvested) (Nakata & Sivakumar 1996; Rank et al, 2004). They require different resources, systems, processes, and especially cognition and behaviour to optimise performance. Initiation does not automatically transition into implementation.
- National culture forms the mental models that people apply to interpret and respond to the world around them, how they manage, engage with other people and practise innovation (eg Hofstede 2001). Those mental models differ in material ways from nation to nation. As an example, Australians and Kiwis are quite similar but on one key cultural dimension, assertiveness, that is important in the implementation stage, they are very different. In the Globe study (Javidan & House 2001) 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. As a further example, Kiwis as practical down to earth people are uncomfortable extracting the value from intangibles and therefore from the intellectual assets. Intellectual assets that form the foundation of business development in

many of our peer nations, are significantly underdeveloped. We embed weightless, infinitely scalable and high value intellectual assets in our comparatively low value, tangible products that we export to the world. Our failure to extract value from intellectual assets may be a distinguishing feature of the New Zealand economy.

- There are statistically significant correlations between some of the dimensions of national culture and the two stages of the innovation process. The literature correctly predicts and is confirmed by the author's research, that New Zealand will have a bias towards the cognition and behaviour associated with initiation at the expense of implementation. This bias may be more extreme in New Zealand than any other nation making it a more important consideration in understanding the performance of our national innovation system and designing appropriate strategies and policies.

Measuring national culture

National culture can be and has been measured. Four international studies over a forty year period, all using different methodologies and samples came to near identical conclusions regarding New Zealand's bias to initiation over implementation.

Applying the findings and conclusions to the national innovation system

Understanding the role of the particular mental models that Kiwis apply and how that affects innovation practice while overlaying the institutional arrangements, economic geography and policy settings offers the opportunity to construct new approaches that may transform our innovation and productivity performance. In the absence of understanding the cognition and behaviour of the actors within our national innovation system, any strategies and policies that we apply are likely to deliver suboptimal results.

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