

Henley Management College

The Influence of National Culture on New Zealand's Innovation Outcomes

**"In some ways I believe I epitomise
the average New Zealander: I have
modest abilities, I combine these
with a good deal of determination,
and I rather like to succeed."**

Sir Edmund Hillary, 1919 - 2008

By Tony Smale

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of the requirements for the degree of
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Preface

For a land blessed with many natural advantages, and having once enjoyed one of the highest standards of living in the world, New Zealand's decline to 21st out of 30 in the O.E.C.D. during my lifetime has both frustrated and fascinated me. More recently work around innovation started to suggest some reasons for the decline - a culture that traps New Zealand in a cycle of invention without fully realising the value of its creativity. While almost all of the work to explain the poor performance had focused on institutions and structures, a comment by Crocombe, Enright & Porter in their book *Upgrading New Zealand's Competitive Advantage*, which I read in 1991, stayed with me. New Zealanders satisfice and only work enough during the week to recreate at the weekend. Satisficing is evident everywhere you look in New Zealand and seemed to have all the characteristics of a culturally determined behaviour. That led to this dissertation seeking an explanation of the poor economic performance from a national culture perspective.

Many people have contributed to this work. My Henley Tutors and Supervisors, my colleagues and friends who have taken an intense interest in progress and the interviewees who so enthusiastically and comprehensively contributed their thoughts. My thanks to you all. Special thanks go to my wife Helen, for without her this work would not have been embarked upon let alone completed. For her support for our committing a considerable sum of money to fund the MBA, for uncomplainingly accepting the constraints on our social life for four years, and for her endless encouragement and belief throughout the four year process.

Tony Smale

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ABSTRACT

New Zealand's Gross Domestic Product per capita ranks it 21st out of 30 amongst Organisation for Economic Co-operation and Development nations (OECD, 2005b). The Ministry of Economic Development (MED, 2007) has identified increasing the value captured from the national innovation effort as a priority for improving N.Z.'s economic performance. The government has however taken a predominantly resource based perspective focusing on institutions and structures (e.g. Smith, 2006) while neglecting the role of human dynamics including culture in the National Innovation System.

A substantial body of literature correlates national culture and innovation (e.g. Shane, 1992, 1993, 1995; Lumpkin & Dess, 1996a). A lesser body of literature demonstrates a differential association between culture and the initiation and implementation stages (e.g. Nakata & Sivakumar 1996; Rank et al, 2004). The literature predicts that New Zealand's culture will positively moderate initiation and negatively moderate implementation. A number of published explanatory models are presented (e.g. Rank et al, 2004) along with two new models that contribute additional understanding of the subject.

The research aimed to explore whether New Zealand's national culture represented a barrier to creating and appropriating benefits from the national innovation effort. It used a purposive sampling of innovators and innovation "experts", and a grounded, subjective, interpretivist paradigm. The findings were then correlated with the literature to reveal a variety of culture-based cognitions and behaviour that negatively moderated the implementation of innovation. A profound control centrality, exacerbated by highly negative attitudes to failure resulted in narrow capital structures, friction with rules and bureaucracy and combined with a short term orientation resulted in poor collaboration. There was a profound reluctance to give and receive constructive feedback and this represented a barrier to learning. A New Zealand centric world view acted as a barrier to deep understanding of markets. A once competitive advantage in practical do-it-yourself "make and use" innovation, often "borrowing" others intellectual property, now represents a barrier to recognising, protecting and using the intellectual property for "make and sell".

Two factors in particular appeared responsible for the behaviour. The first, satisficing appeared mainly attributable to high affective autonomy (a desire for freedom and fun) (Schwartz, 1999). The second, the tall poppy syndrome, appeared to be a tension between individualism and egalitarianism. The syndrome appeared to contribute to the reluctance to deal with complexity and to utilise specialists and specialist knowledge, and to suppress the giving and receiving of feedback and the emergence of champions

By understanding the role of culture in the innovation process and incorporating the findings of this work, policy makers should be able to construct policy that will improve innovation outcomes. At the business level, it should be recognised that staff will be motivated by conditions that most closely match their cultural values, especially the desire for fun and leisure activities. New value could be created by leveraging N.Z.er's creativity and problem solving capability while recognising and mitigating the weaknesses in implementation through promoting ventures with companies located in cultures with particular strengths in implementation.

1. INTRODUCTION

1.1 Introduction

Despite New Zealand's (N.Z.) reputation for innovativeness, a weakness in translating that into commercial outcomes was apparent. There appeared to be a weakness in recognising intellectual property (I.P.) beyond its immediate process "make and use" applications, and to realising new value. Although N.Z.'s relatively poor economic performance was generally attributed to institutional or structural short-comings (e.g. MED, 2007), it was apparent that other factors such as culturally determined behaviour also impacted the outcomes achieved by N.Z.'s national innovation system (N.I.S.). This dissertation therefore sought to explore whether N.Z.'s national culture represented a barrier to creating and appropriating benefits from the national innovation effort.

1.2 Background to the problem

As the literature review (Chapter 2) will demonstrate, nations or ethnic groups within nations are defined and can be compared by *cultural dimensions* or *values*. (For the sake of consistency, as context permits, the term "dimensions" is used throughout this work.) There is a substantial literature on the association of cultural dimensions and innovation and a lesser but compelling literature predicting that cultural dimensions moderate the early (initiation) and later (implementation) stages differently and to a large degree, in diametrically opposite directions.

Culture moderates cognitive and behavioural responses to stimuli including those involved in innovation. This work is principally from cultural anthropology (focus on norms and values) and cognitive psychology perspectives. The latter is interested in how people understand, diagnose, and solve problems, and the mental processes that mediate between stimulus and response. Cognitive theory implies that solutions to problems take the form of paradigms or algorithms that are not necessarily understood but promise a solution, or heuristics (rules of thumb) that are understood but that do not always guarantee solutions.

National cultures have been categorised through a number of different dimensions typologies. Within a nation there is usually a single dominant language, educational system, military, political system, shared mass media, markets, services and national symbols (e.g. flags, sports teams) that represents the principal culture (Schwartz, 1999). N.Z. has a dominant “Kiwi” culture that extends across ethnicities. It is comprised predominantly of “imported” Anglo-Saxon values “flavoured” through 200 years of contact with Māori. Even though in some instances traditional Māori values are at opposite poles to the Anglo-Saxon values (e.g. collectivism versus individualism respectively), the effect appears as, rather than an averaging process, to have enriched the expression of the dimensions in specific (and possibly unique) ways. Except for acknowledging that distinct traditional Māori cultural values exist, this paper focuses on the dominant Kiwi culture reported in the literature.

According to NESTA (2007) it is important to consider the wealth created by innovation rather than the inputs. Gross Domestic Product (G.D.P.) per capita is the most relevant measure of wealth. There are strong correlations between economic development as measured by G.D.P. per capita and innovative activity. The success of N.I.S.s 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).

The N.Z. Government’s Growth Innovation Framework is its central policy platform to achieve the goal of returning N.Z. to the top half of the Organisation for Economic Co-operation & Development (O.E.C.D.) rankings. One of that policy’s four “pillars” is increasing N.Z.’s innovation performance, while recent work by the N.Z. Treasury (MED, 2007:38) identified improved innovation performance as a potential solution to N.Z.’s poor economic performance:

“This underlines the point that N.Z.’s growth policies should continue to focus on lifting Multifactor Productivity¹, for example through increasing innovation ...”. (Emphasis added)

¹ A combined measure of labour and capital productivity.

In less than four decades New Zealand slipped from the upper decile of the O.E.C.D. per capita income rankings to 21st out of 30 (87% of the mean) (OECD, 2005b). A number of rationalisations have been offered for this decline including distance from market, absence of large businesses, primary production base, small size, etc. (e.g. MED 2007). Economic growth theories do imply that large countries should achieve and sustain higher levels of growth. Yet, as shown in Figure 1.1, four of the six highest ranked countries are of a similar size to N.Z.. This can be explained by the *small country paradox* (Lundvall, 2006), which, although not normative, does negate the argument that being small necessarily explains N.Z.'s poor economic performance.

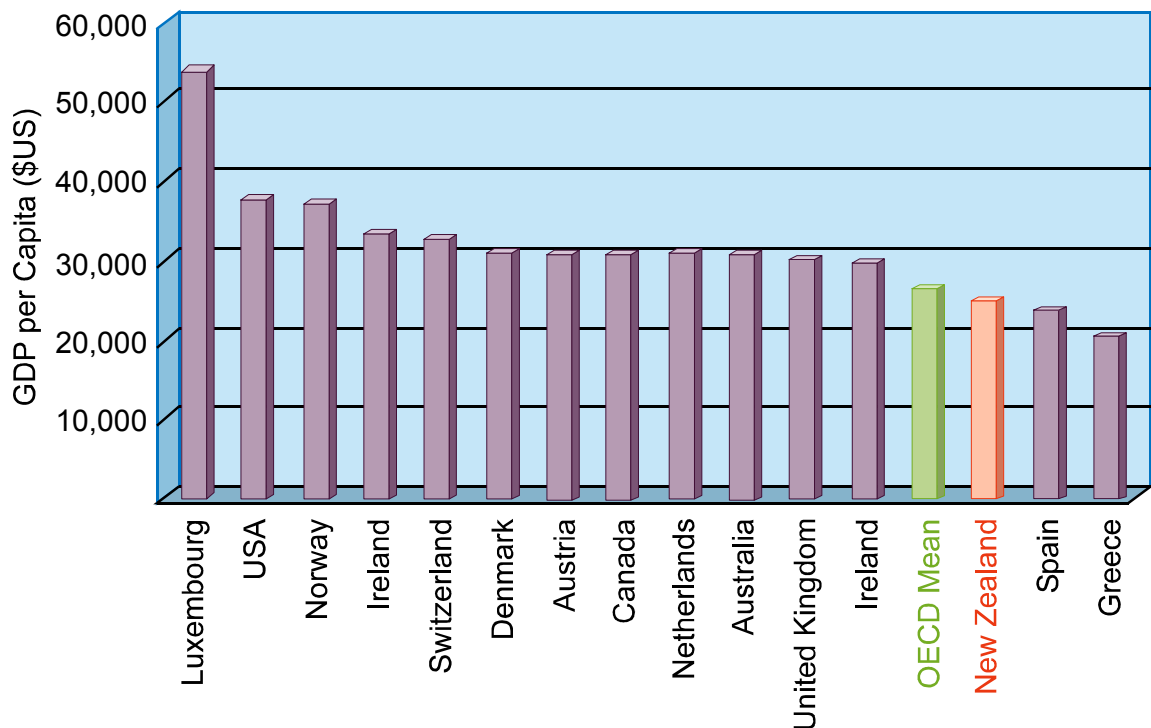


Figure 1.1: G.D.P./capita compared for comparator nations. (After Statistics N.Z. 2007c)

MED (2007) attributes much of the cause of the poor performance to the failure to appropriate as much value from the innovative effort as similar European Union (E.U.) countries. Figure 1.2 provides a summary of N.Z.'s economic performance.

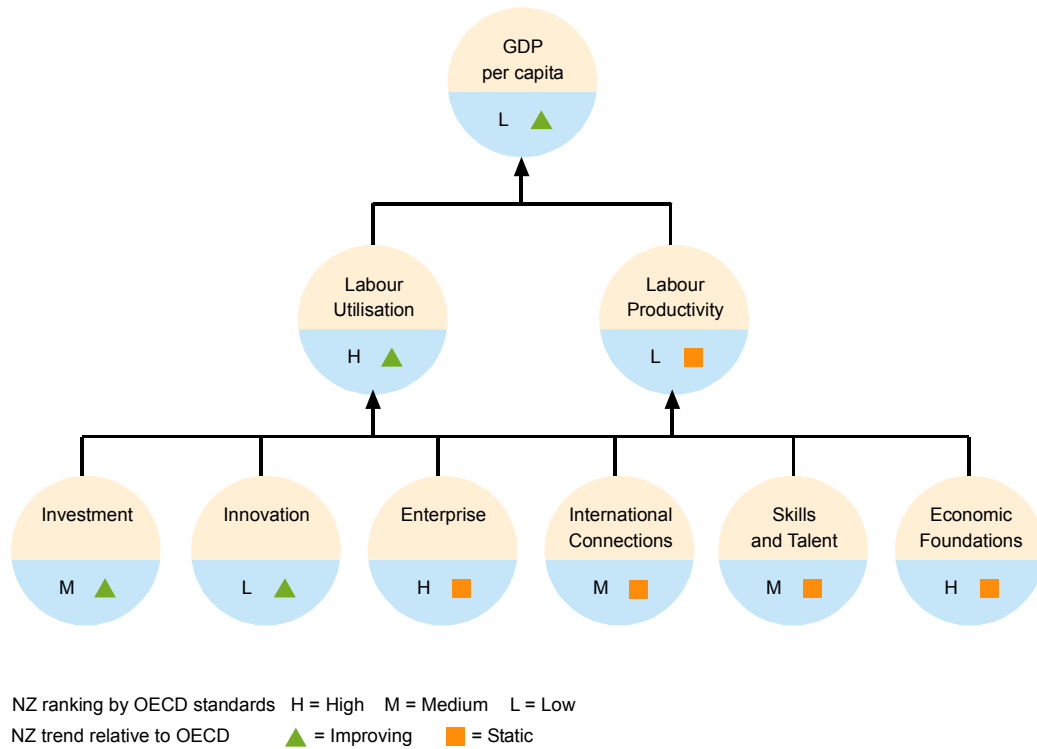


Figure 1.2: Summary of N.Z.'s economic performance (2003). (MED, 2007:6)

Measuring innovation is problematic and there is no single measure. Reflecting that difficulty, Fabling (2007:19) ponders “*Just how innovative are N.Z. firms? ... The answer is, we don't know*”, while a 2008 report to the US Secretary of Commerce (Schramm, 2008) comes to the conclusion that innovation measurement is in its infancy and more research is required before the U.S.A.'s innovation effort can be quantified.

MED (2007) use the innovation indicators shown in Appendix 1 while Cook and Memedovic (2003) provide the comparisons for N.Z. shown in Figure 1.3, N.Z. has relative weaknesses in Business Expenditure on Research & Development (B.E.R.D.), (although the absence of a tax incentive will have skewed reporting), patenting, and venture capital. It has relative strengths in Business Financed R.& D. at Government, Publication Intensity, Tertiary Education, and Innovation Adoption in both service and manufacturing firms. Innovation adoption is of particular significance as it demonstrates that N.Z. firms begin the implementation of innovation at well above the average. Consequently, when the Ministry of Economic Development (M.E.D.) concludes that there must be a “wedge” or “barrier” that impedes accumulation of capital resulting in most E.U. countries better capturing innovation benefits than does

N.Z. (MED, 2007), that wedge appears almost certainly to exist in the implementation phase.

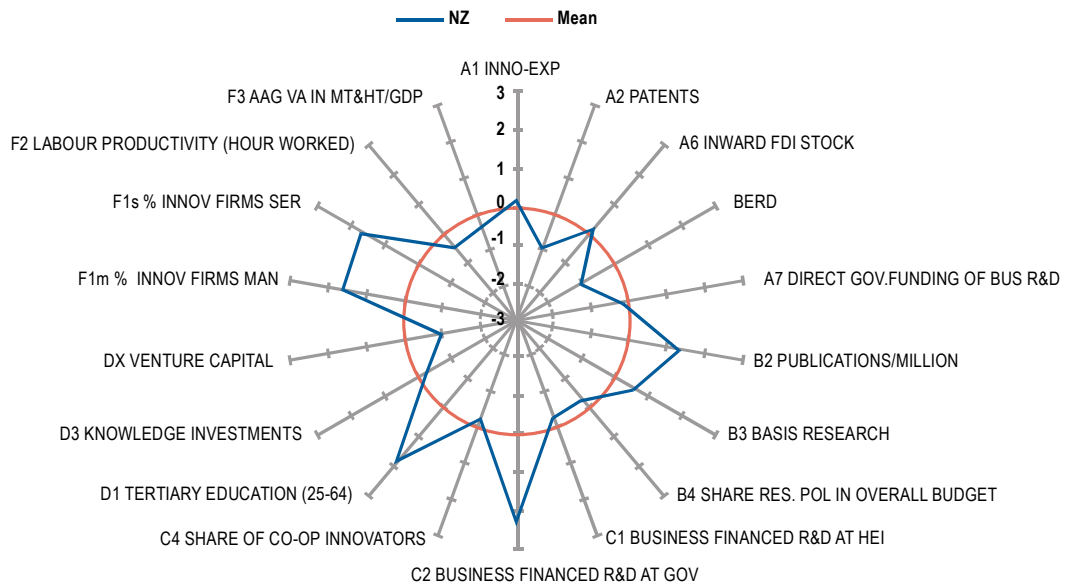


Figure 1.3: Innovation input/output indicators compared. (Cook & Memedovic, 2003:80)

Figure 1.4 visualises how the appropriation curves for E.U. countries and N.Z. may compare.

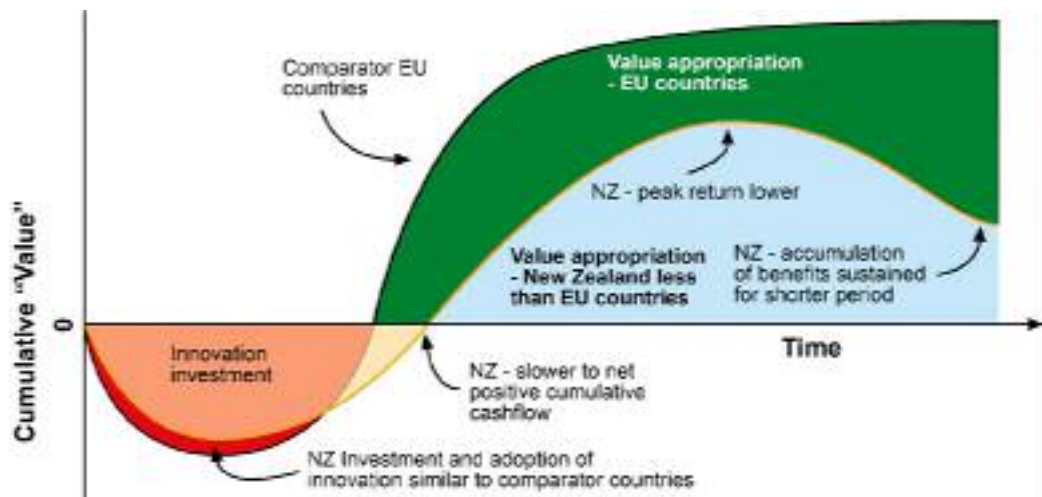


Figure 1.4: Value appropriation for N.Z. and E.U. countries compared.

It is possible therefore, that New Zealand is inventive but not innovative, that is, good at coming up with new ideas or adapting others, but poor at commercialising and creating/appropriating value from those ideas.

The following metaphor may be illustrative.

“It was actually N.Z.’s Richard Pearse, not the Wright brothers, who was first to fly. The quintessential ‘mad scientist’ inventor, he didn’t realise the historic importance of the event and so didn’t bother to have any photographs taken.” (emphasis added). (Frederick, et al, 2007:101)

Unlike the Wright brothers who commercialised their “flying machine”, neither Pearse nor those around him ever recognised such potential.

1.3 Aims of the Research

This work is of importance to N.Z.’s economic development because the nation produces comparatively poor outcomes from its innovation effort. The innovation measures discussed in Section 1.2 do not support the government’s resource based focus, e.g. Smith (2006). To provide a comprehensive understanding of the influencers of the outcomes of the N.I.S., other factors including culture should therefore be considered.

The research therefore aims to explore whether N.Z.’s national culture represents a barrier to creating and appropriating benefits from the national innovation effort.

1.4 Introduction to the Methods Used

The research used a purposive sampling of innovators and innovation “experts”, and a grounded, subjective, interpretivist paradigm. The work aimed to identify culturally moderated practices and behaviours that impact on innovation. By necessity, the work was qualitative in nature, i.e. it was intended to explore the unknown (or at least unrecorded), rather than to measure the known, and attempt to relate the observations to reported knowledge of culture. No previous published work reporting research on the association of N.Z. innovation practices and cultural dimensions has been identified.

The analysis and conclusions draw on the author’s experience over twenty years as an economic development practitioner and business consultant.

1.5 Summary of the Research Findings

The findings indicate that N.Z.ers exhibit a variety of behaviours that act as barriers to the creation and appropriation of value from the innovation effort. Those behaviours are able to be linked to the national culture. Of the major findings, firstly, *individualism* is responsible for a control centricity that combined with *uncertainty avoidance* results in a very narrow capital structure. Second, the *tall poppy syndrome* that appears to be a tension between *individualism* and *egalitarianism* moderates against the use of specialists and the emergence of champions. Third, satisficing combined with a *universalist* narrow world view leads to the failure to recognise and properly protect and exploit I.P.. Fourth, the short-term orientation acts as a barrier to accumulation of the social capital necessary for effective collaboration and exacerbates the *individualism*. Finally, low *assertiveness* and negative attitudes to failure result in a feedback reluctance that acts as a barrier to learning and performance improvement.

1.6 Structure of the Study

This study has been structured into five sections:

- A critical review of the literature defining innovation and culture and in particular the associations between culture and the initiation and implementation of culture.
- The methodology used for the research.
- The research findings.
- Discussion of the findings.
- Conclusions and recommendations on the practical applications of the study.

1.7 Chapter Summary

This chapter has introduced the principle that cognition and behaviour is moderated by culture and that culture can be categorised and compared using cultural dimension typologies.

N.Z. has an international reputation for innovativeness, yet its economic performance is shown to be poor compared to comparator countries and the M.E.D. has attributed that in part to a failure to create and appropriate as much value from innovation as E.U. countries do. Analysis of the poor performance has taken a strict economics

resourced based view and especially reference to the institutions and structures within comparator countries. There was an almost complete neglect of human dynamics, something that the Literature Review will show is not restricted to N.Z.. The Review will explore how the dimensions may impact the initiation and implementation of innovation differentially and relate those to published data on N.Z.'s dimension rankings.

2. LITERATURE REVIEW

2.1 Introduction

The innovation literature is broad and therefore a selective treatment of the subject has been necessary. The Review organises the topic in five sections. First it examines the correlation between economic growth and innovation. An overview of culture, then innovation including definitions and the various stages follows. It next examines the associations between culture and innovation including the differential impact of culture on the initiation and implementation stages in the N.Z. context.

2.2 Economic Development and Innovation

The work acknowledges that an innovation system is a complex social and economic system. It is influenced by a broad range of parameters and therefore the scope of the work is narrowed and focused to culture and innovation *ceteris paribus*.

2.2.1 Innovation and growth

G.D.P. per capita is a measure of the population unit (person) creation and appropriation of wealth from the collective economic effort. To improve wealth by this measure, more value must be created and appropriated relative to each population unit. That can be achieved by either making/selling more goods/services to offset any decline in price caused by the increased supply or by manipulating the demand/supply equation to increase the payment received for each unit of goods/services, or a combination of both. Either approach requires new ways of creating/distributing/selling the goods and services and that, by definition, equals innovation. Therefore differences in innovative activity 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).

Solow (1956) demonstrated a correlation between labour and capital productivity and economic development. Denison (1985) demonstrated that in the U.S.A. between 1929 and 1982 75% of economic growth was attributable to increased productivity and growth in human capital. Romer (1986, 1990) found that differences in rates of economic development between countries not explained by Solow's work could be

explained by differences in human capital. Creation of new intellectual capital, according to Woodman, et al (1993), equals creativity, while the World Bank (1991) concluded that investment in intellectual capital (innovation/learning) rather than physical capital is the determinant of economic development.

Two principal schools of thought have emerged, economics, and a sociological approach. The former, which is dominant in N.Z., argues that national differences in innovation are the result of industrial structure, societal wealth, research and development infrastructure, resource endowments, and country size e.g. Smith (2006).

The sociological school argues that human dynamics and culture play a major role, (e.g. Shane, 1992, 1993, 1995; Hofstede, 2001; Frederick & Chittock, 2006), while Rank, et al (2004) and Pohlmann (2005) observe that creativity and innovation are culturally moderated responses to environmental stimuli.

However as Furman, et al (2002) note, “innovative capacity” is a product of both the innovation infrastructure and the environment for innovation as well as the strength of linkages between them and Trompenaars & Hampden-Turner (1998:4) note that:
*“... the belief that human cultures in the workplace should resemble the laws of physics and engineering is a **cultural**, not a scientific belief.”*

Frederick & Chittock (2006) argued that higher G.D.P. per capita growth rates are mirrored in higher levels of innovativeness while Shane (1993) argued the converse, that increased innovative behaviour led to increases in G.D.P. per capita. The literature reports that economic development is driven by increases in productivity. Productivity growth is determined significantly by innovation, and accepting that as wealth increases the ability and willingness to invest increases, then these two apparently conflicting positions can not only be reconciled, but a predictive model can be constructed as shown in Figure 2.1. N.Z. is neither ideally placed, nor does it face insurmountable barriers from its current G.D.P. per capita and *Uncertainty Avoidance* ranking.

2.2.2 Appropriating value

Being inventive is no guarantee of creating and appropriating value (e.g. Shane, 1992; Jaumotte & Pain, 2005; Pisano & Teece, 2007). More specifically, Freeman

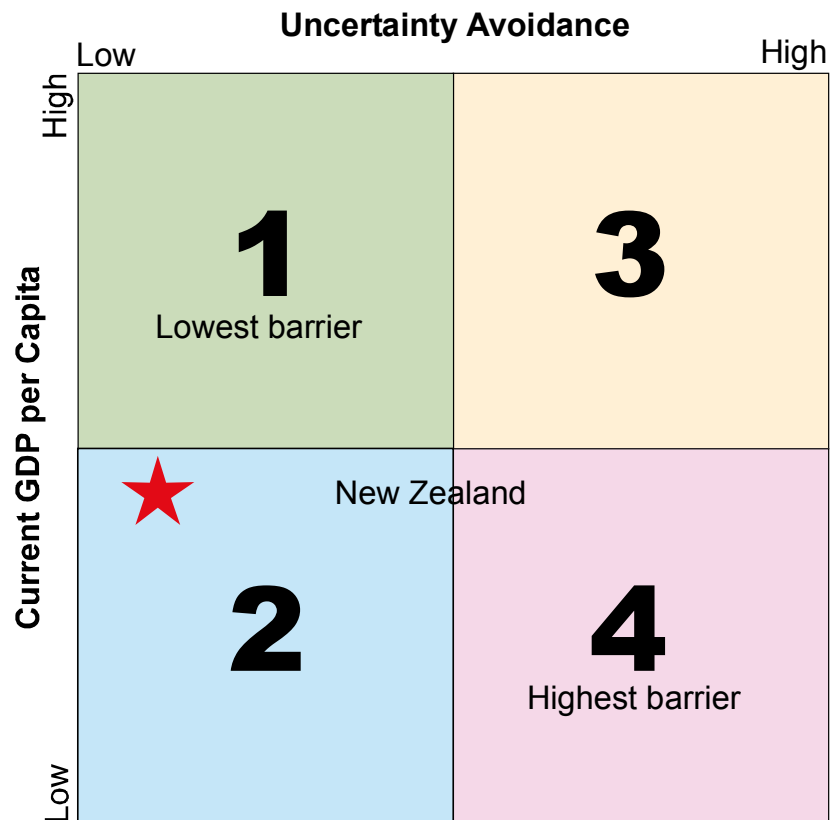


Figure 2.1: Growth barriers matrix.

(2002:199) referring to the Industrial Revolution, showed that while most of the inventions occurred in France, the implementation and value appropriation occurred in the UK because of “*culture and attitudes*” and capital markets underpinned by the “*scientific spirit pervading the national culture*”. Similarly, referring to both China and the Soviet Union, Baumol (2004:319) revealed that a high level of inventiveness did not produce economic growth because despite the “*astonishing abundance of inventions*”, there was no incentive to create new value. Harris, et al (2005) and Frederick & Chittock (2006) report that there is an abundance of new ideas and inventiveness in N.Z., but Frater, et al (1995) and GIAB (2004) found that there is a widespread belief amongst N.Z.ers that the fruits of innovation would be quickly appropriated by foreign companies. Hull (2003) reported that N.Z. does not have a business enterprise culture and GIAB (2004) reported that only 10% of N.Z.ers considered economic growth important.

2.3 Culture and Cultural Dimensions Defined

Culture is a complex psychological construct through which people interpret and make sense of the stimuli they receive from their environment. According to Doney, et al (1998), Kroeber & Kluckhohn in 1952 identified 160 definitions of culture. This section aims to provide a working definition of “culture” and to critically review the literature on *cultural dimensions*.

Although researchers have approached the study of innovation from either a theoretical or empirical perspective, there is considerable convergence conceptually (Doney et al, 1998). The correlations between cultural dimensions and innovation are based on empirical work.

2.3.1 Culture defined

Distinct cultures evolved as different groups adapted to their respective challenges.

“... culture is the way in which a group of people solves problems and reconciles dilemmas.” (Trompenaars & Hampden-Turner, 1998:6).

Culture is acquired and acts in a very specific way:

“Culture refers to a learned, socially transmitted set of behavioural standards. It is held, expressed, and shared by individuals through their personal values, norms, activities, attitudes, cognitive processes, interpretation of symbols, feelings, ideas, reactions and morals.” (Morris, et al (1994:5) (emphasis added)

2.3.2 Layers of culture

Culture is comprised of multiple layers as shown in Figure 2.2 although the layers are often referred to interchangeably. Dimensions can only be observed through behaviour, heroes and symbols (e.g. Trompenaars & Hampden-Turner, 1998; Hofstede, 2001; House, et al, 2001). Such observation is the basis of this work.

2.3.3 Cultural Dimensions

A number of dimension typologies have been published that are relevant to this work, (e.g. Trompenaars and Hampden-Turner, 1998; Schwartz, 1999; Hofstede, 2001; House, et al, 2001) and allow national cultures to be ranked or classified and

compared using empirically verifiable, largely independent dimensions or “universalities”.

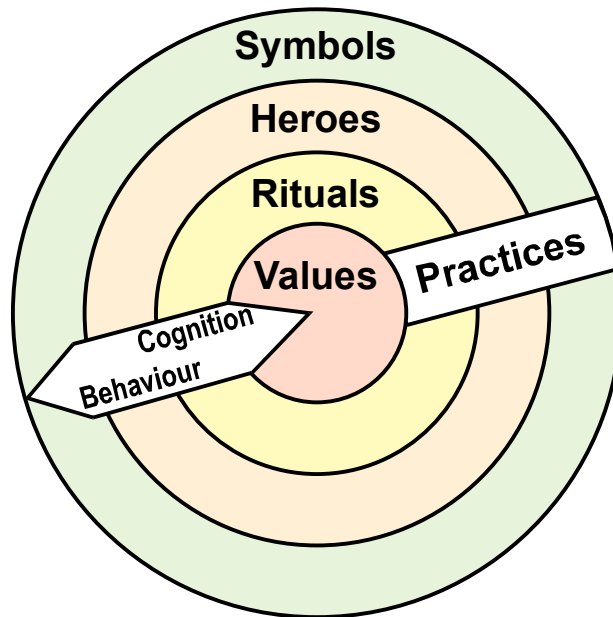


Figure 2.2: Onion model of cultural dimensions (After Trompenaars & Hampden- Turner, 1998; Hofstede, 2001).

While Hofstede (2001) maintains that by definition dimensions are independent, Trompenaars & Hampden-Turner (1998) and Schwartz (1999) report that the dimensions may act together or against each other.

2.3.4 Measuring Culture

Figures 2.3, 2.4, and 2.5 present N.Z.'s score on three different typologies. However, there is not at this time, any single measure of culture. Schwartz's (1999) theory allows nations to be positioned as a single “co-ordinate” on a contradictory or compatible, seven pole, two dimensional “co-plot” (Goldreich & Raveh, 1993) (Cited in Schwartz, 1999) and appears the closest method of assigning a single measure of culture at this time (Figure 2.6). Empirical research has established correlations between the dimensions, especially Hofstede's, and innovation including differentially between initiation and implementation (e.g. Shane 1992, 1993, 1995; Nakata & Sivakumar, 1996; Rank, et al, 2004). By examining a nation's profile and combination of dimensions it is possible to predict relative strengths and weaknesses

in the two stages of innovation. This work has then tested those predictions for N.Z. with further empirical research.

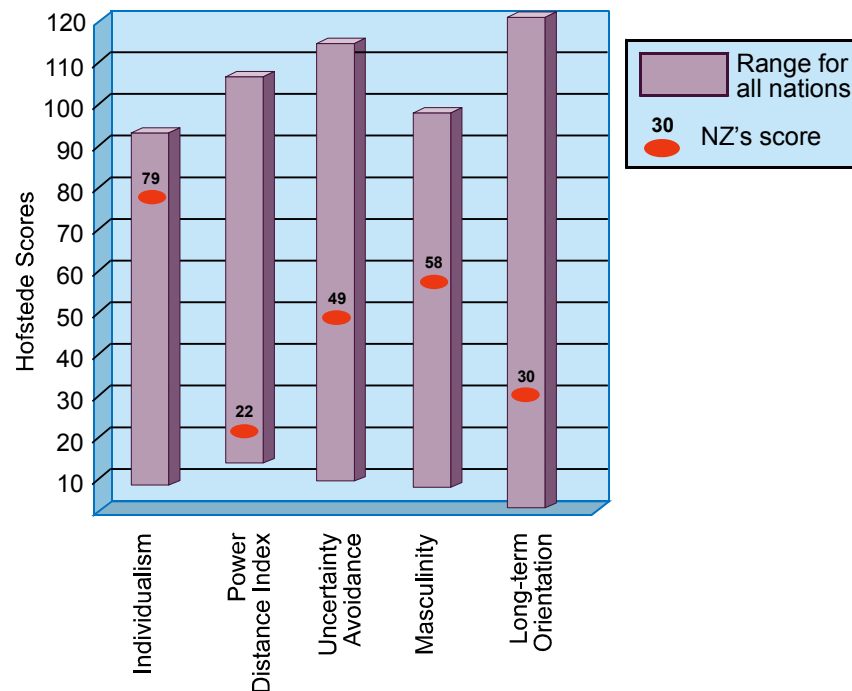


Figure 2.3: Hofstede's scores for N.Z. and reported ranges. (Hofstede, 2001)

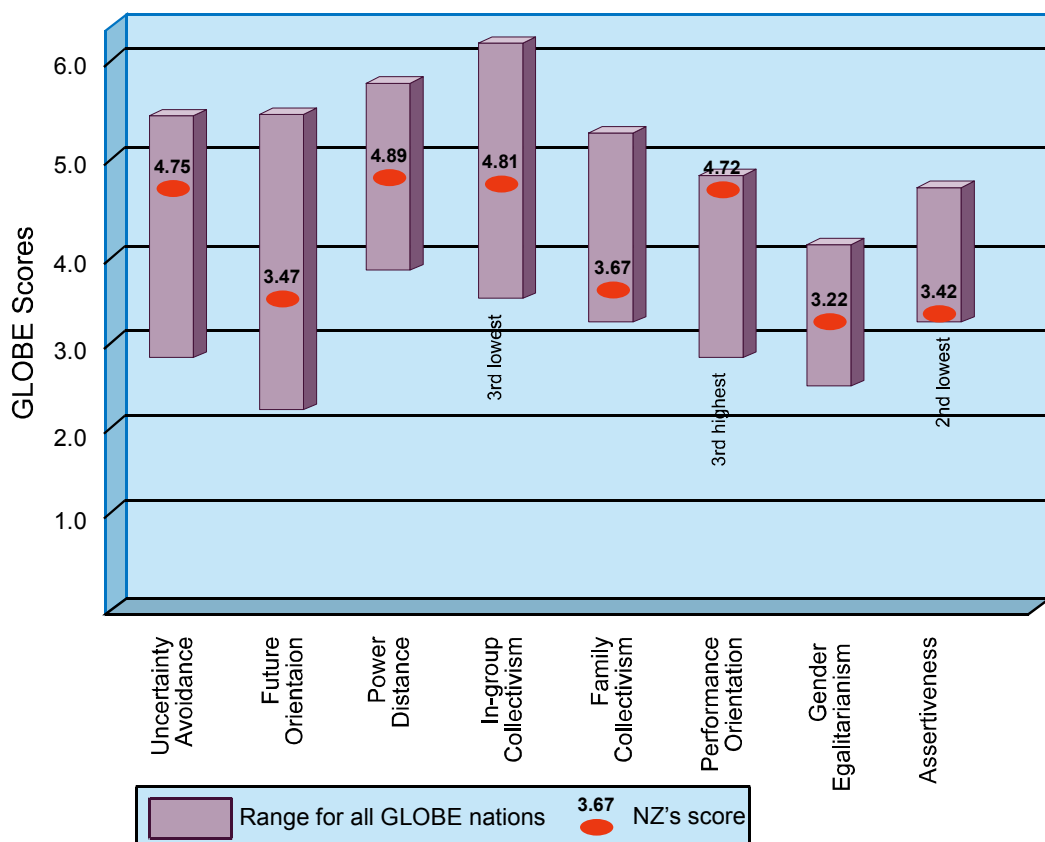


Figure 2.4: GLOBE scores for N.Z. and reported ranges. (House, et al, 2001)

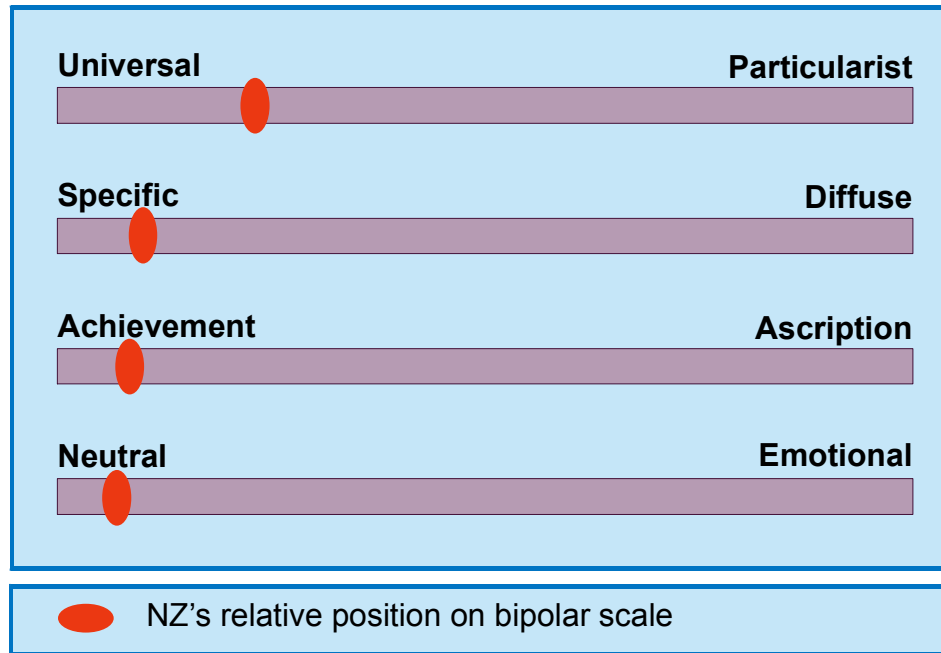


Figure 2.5. Trompenaars & Hampden-Turner's (1998) ratings for NZ.

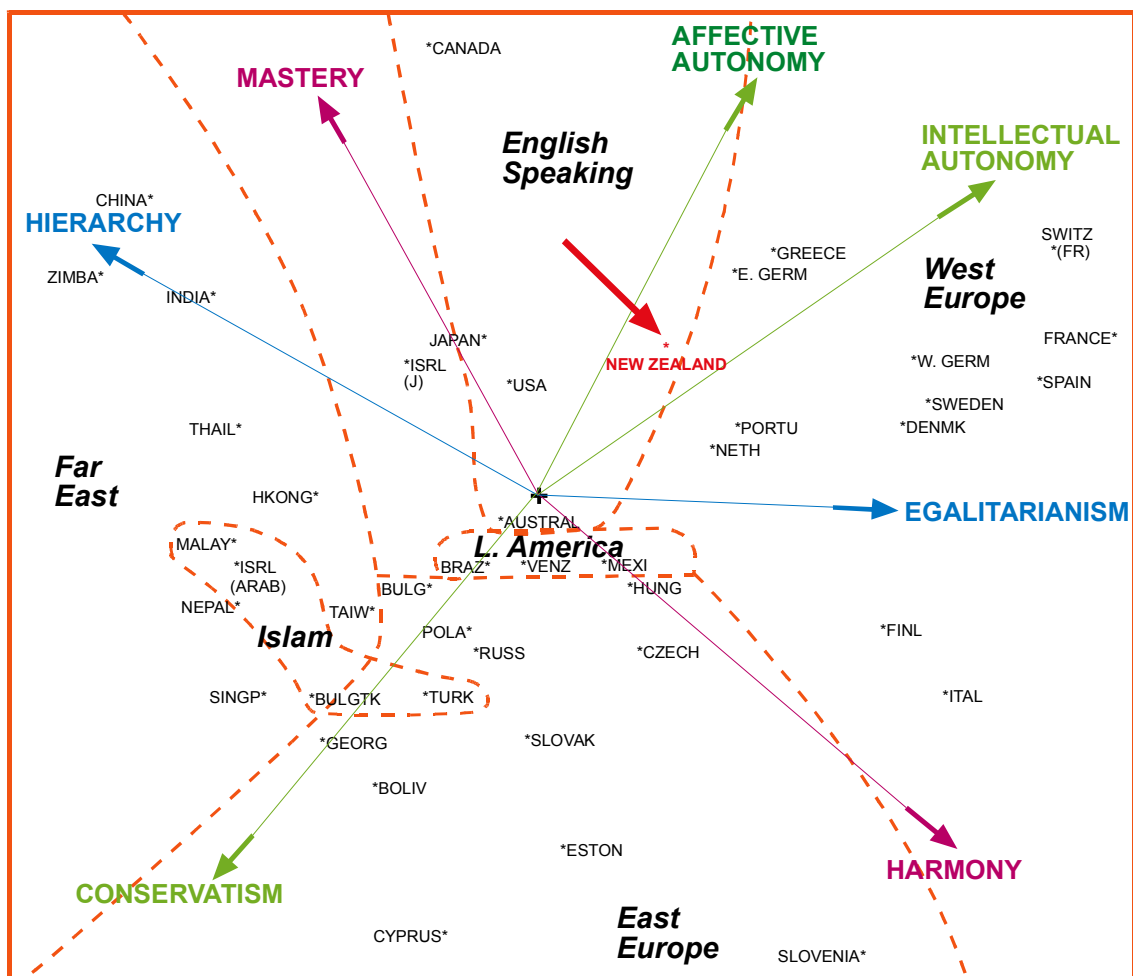


Figure 2.6: Schwartz's two-dimensional plot of national culture "co-ordinates". (After Schwartz, 1999:36)

2.3.4 Validating the methodologies

Hofstede's primary data was extracted from pre-existing employee attitude surveys from 1968-69 and 1971-73 across IBM subsidiaries in 66 countries. He determined retrospectively that statistical analysis and theoretical reasoning could reveal four largely independent bi-polar dimensions of a national culture [*Power Distance (P.D.)*, *Individuality*, *Uncertainty Avoidance (U.A.)*, *Masculinity*,) for 40 out of the 66 countries. Subsequent work in association with Bond (Hofstede, 2001) saw the addition of a fifth dimension (*Long-term Orientation* or *Confucian Dimension*) and the countries ranked expanded to 50.

Various authors have criticised Hofstede's work. Brown (2003) correctly points out that IBM employees in N.Z. in the early 1970s would have been atypical of the general population and that national "values" will have changed since the original work. McSweeney (2002) mounts a strident attack on both Hofstede's theoretical and methodological approach. He notes that of the 117,000 surveys only those from 40 of the 66 countries were used. In only six countries were the sample sizes greater than 1,000 and for a number of countries, including N.Z., the number was less than 200. McSweeney (2002) is particularly critical of Hofstede's claims, contrary to probability theory, that the samples were so homogenous that 50 or less subjects would produce valid results. In the 2001 edition of *Culture's Consequences*, Hofstede records variances at the 99% confidence limit of between 1 and 6%. (Hofstede, 2001:65-66). However, the samples were not randomly drawn from the general population but were IBM managers, technicians and marketing personnel, so the variances relate to those sub-populations. Schwartz (1999) also chose to use a subsection of the population, in his case teachers with validating samples of students. Schwartz maintains that teachers will represent a mid society sample. Like Hofstede, Schwartz claims that any variance between his samples and the general population will not invalidate his rankings. Both authors maintain that this approach produces more reliable results than random sampling that would still need to be corrected for age, gender, education and the cumulative and unique life experiences of the sampled individuals. Similarly, the GLOBE project (House, et al, 2001) sampled "middle managers".

In *Culture's Consequences* (2001), Hofstede devoted considerable attention to addressing the question of validation and confirmatory data sources. The most

important is the correlation with Schwartz's Culture Level Scores. Hofstede, 2001:264, 265) compared the scores from the 23 countries where Schwartz's and the IBM scores overlapped. He found five of the seven Schwartz dimensions correlated with *individuality* [Product moment (P.M.) correlations indicated: *Conservatism* – 0.55, *Hierarchy*, -0.53, *Affective Autonomy* 0.45, *Intellectual Autonomy* 0.53, *Egalitarianism* 0.49. $p=0.01$ all except *Affective Autonomy* $p=0.05$].

Hofstede was also able to demonstrate “significant” correlations between the Hofstede dimensions and other work using the IBM questionnaires and formulae. Of particular interest, because the sample includes N.Z., is Helmreich & Merritt's 1998 study of airline pilots. Significant correlations are demonstrated between the original IBM results and the pilots for P.D. (P.M. 0.76, Spearman rank 0.81, $p = 0.001$) (Hofstede, 2001:127), and *individualism* (P.M. 0.70, Spearman rank 0.67, $p = 0.001$) (Hofstede, 2001:263), but only marginally for U.A. and not at all for *masculinity*. Similarly, when comparing Hoppe's 1990 survey of “elites” with the original IBM data, significant correlations with P.D. (P.M. 0.67, Spearman rank 0.66, $p = 0.01$) (Hofstede, 2001:127), U.A. (P.M. 0.64, Spearman rank 0.63, $p = 0.01$) (Hofstede, 2001:187), *Individualism* (Product-moment 0.69, Spearman rank 0.54, $p = 0.01$), and *Masculinity* (P.M. 0.83, Spearman rank 0.83, $p = 0.001$), were found (Hofstede, 2001:336). Various similar correlated samples are described. Hofstede (2001:67) provides what appears to be a plausible explanation for the less than perfect correlations:

“There very likely is no single set of questions that can be used to measure national cultural differences for all kinds of respondents in all types of organisations at any point in time. Questionnaires have to be adapted to their intended respondent population, situation and period.”

But see also following section.

Although research on the same scale as the original IBM work has not been repeated, Shane (1993) was also able to cite a substantial list of validating work to supplement Hofstede's own claims.

Hofstede's dimensions are widely cited in both innovation and entrepreneurship literature (e.g. Lee & Peterson, 2000), the majority either accepting Hofstede's

dimensions without further analysis, (e.g. Shane, 1992, 1993, 1995), or using them as the basis for expanded typologies (e.g. Lee & Peterson, 2000; House, et al, 2001). Whether this represents a “*triumph of faith - a failure of analysis*” as McSweeney (2002:89) claims, or validation of the work, remains a matter of contention and beyond the scope of this (and to date any) work to determine definitively. Accepting the imperfect correlations, this review does provide validation of the methodology as a means of ranking cultures and provides an acceptable basis for the comparisons in this work.

2.3.5 Comparing the typologies

Hofstede argues strongly that his five dimensions provide a complete characterisation of cultures and is highly critical of other typologies. He describes Trompenaars & Hampden-Turner's (1998) and Schwartz's (1999) typologies as no more than “*categories*” of culture or “*intercorrelated flavours*” (Hofstede, 2001:223). The correlations he demonstrated between Schwartz's dimensions and *individualism* provide substance to his criticism. The GLOBE research increased the number of dimensions to nine, however Hofstede claims that the additional dimensions are nothing more than subdivisions of the Hofstede dimensions (Hofstede, 2006). Irrespective, Hofstede himself provides a hint that there may be greater complexity:

“Attributed wisdom that is not based on knowledge and education is a dubious foundation for the development of a country.” (Hofstede, 2001:370)

That is a clear reference to Trompenaars & Hampden-Turner's (1998) *achievement – ascription* dimension. These interrelationships and correlations lead the author to postulate that just as chromosomes are comprised of sub-units (alleles), so too might be dimensions (cultural alleles), with each typology more or less capturing all of the alleles but slicing the whole across different planes. Such a model is represented within the limitations of the author's artistic capabilities in Figure 2.7.

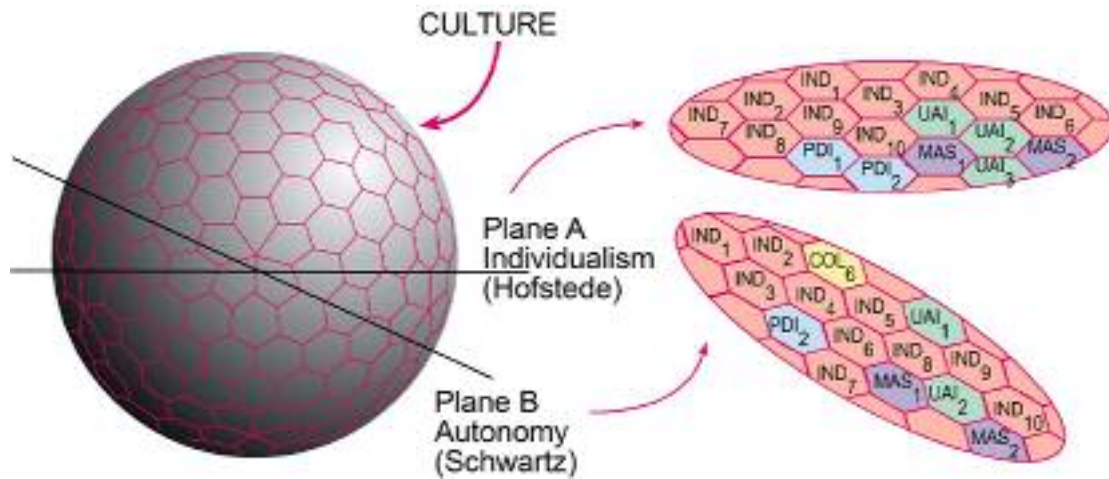


Figure 2.7: Cultural sub-components may be captured in different combinations by different typologies.

While the typologies of Schwartz (1999), Hofstede (2001), and House, et al (2001) vary in the description of their dimensions, they all result in similar groupings of nations, i.e. English speaking (or Anglo-Saxon), West Europe, Far East etc, providing some considerable confidence in the ability of the methodologies to rank nations and therefore provide useful relativity.

Table 1: compares the five most commonly cited typologies and attempts to demonstrate where the dimensions of the different typologies align.

RELATIONSHIPS BETWEEN CULTURAL DIMENSION TYPOLOGIES COMPARED & CONTRASTED				
Hofstede (2001) "Dimensions"	House, Javidan & Dorfman (2001) "Dimensions"	Lee & Peterson (2000) "Dimensions"	Trompenaars & Hampden-Turner (1998) "Value Orientations"	Schwartz (1999) "Value Priorities"
Power distance: different ways of dealing with human inequality	Power distance	Power distance	Specific versus Diffuse Universalism versus Particularism	Hierarchy versus Egalitarianism
Uncertainty avoidance: the level of stress in the face of an unknown future	Uncertainty avoidance	Uncertainty avoidance		Conservatism versus Intellectual and Affective Autonomy
Individualism versus collectivism: the integration of individuals into groups	Collectivism I: Societal collectivism Collectivism II: In-group collectivism	Individualism	Individualism versus Communitarianism	
Masculinity versus femininity: the division of emotional roles between the genders	Gender egalitarianism			Mastery versus Harmony
	Assertiveness		Neutral versus emotional	
	Performance orientation Humane orientation	Achievement orientation	Achievement versus Ascription	
Confucian Dynamicism or long-term versus short-term orientation	Future orientation (Includes Hofstede-Bond's 1988 Confucian Dynamicism)		Attitudes to time	
		Materialism Behaviour regulation	Relationship to the environment	

Table 1: Possible relationships between commonly cited dimension typologies compared.

2.3.6 Stability of cultural dimensions

Hofstede's dataset is now 40 years old although other work is much more recent. While not unanimous regarding the rate of cultural change, the literature provided confidence that the reported dimensions and correlations remain generally valid over the intervening periods.

Busenitz & Lau (1996) claim that certain values such as collectivism are enduring but P.D. and U.A. may shift more rapidly. There is considerable consistency between the reported dimensions across the typologies referred to in this paper. The only notable exception is the GLOBE work (Javidan & House, 2001) that reported higher U.A. for N.Z. than Hofstede (2001). This may reflect a genuine shift or the impact of research methodology as Hofstede has previously suggested will be the case.

The most significant change in N.Z. culture arises from the continuing high immigration. This work has attempted to control for that by examining the dominant Kiwi culture. While this is currently a valid approach, over time as the ethnic mix continues to alter, the Kiwi culture may become less dominant. Brown (2003:1) for example recognised this as an issue in Auckland and eliminated that city from her samples in an effort to control the effect of “... *a high level of immigrants from many different ethnic groups*”. No information was available on the ethnicity of the various reported typology samples however given the sample bases it is reasonable to assume that they would have represented largely the dominant Kiwi culture.

Hofstede (2001) and Hull (2003) report that behaviours may change relatively quickly in response to changed environmental circumstances and Schwartz (1999) explains that groups may voluntarily adopt behaviour contrary to their values when necessity dictates. Phillips (1987:38) referring to N.Z. pioneers offers a useful insight:

“One would not expect the cultural baggage carried by these men to be thrown away immediately. The claim is rather that the new situation enriched and expanded certain customs and dispensed with others.” (Emphasis added)

Those changed behaviours could then have been expected to be reflected in the enculturation of subsequent generations.

Hofstede (2001) claims that the values held by a culture in 1900 were already evident in 1700 and Trompenaars & Hampden-Turner (1998) make reference to tracing culture to the Roman period. It is reasonable therefore to assume that values across the sampling periods would have been sufficiently stable (or at least shifted in parallel across nations), to remain valid for this work.

2.4 Invention, Creativity, Innovation, and Entrepreneurship ...

2.4.1 Definitions

Despite falling into two reasonably distinct schools (economics and sociology), definition of innovation remains ambiguous, even within and across the same school (INNOCULT, 2006) and key words are variable and always problematic (Gartner, 1985). Definitions vary from the simple to the technically complex. At one end is Theodore Levitt's (Quotations, 2008) pragmatic "*Creativity is thinking up new things. Innovation is doing new things.*" At the other end of the scale is Cook & Memedovic's (2003:4) comprehensive definition that aligns with the work of various authors, (e.g. Van de Ven, 1986; Woodman, et al, 1993; Baumol, 2004; INNOCULT, 2006; Smith, 2006; Centre for Organisational Excellence Research at Massey University, 2007):

"... all activities of the process of technological change: problems of awareness and definition, the development of new ideas and new solutions for existing problems, the realization of new solutions and technological options, as well as the broader diffusion of new technologies."

According to Rank, et al (2004:518):

"Creativity, innovation, and initiative are psychological processes that facilitate the transformation of individual work roles, teams, and organisations into desired future states."

This definition however combines elements of "innovation" and "entrepreneurship" which Lumpkin & Dess (1996a:142) successfully distinguish:

"Innovativeness reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services or technological processes."

They then define entrepreneurship as (pp136):

“... new entry. New entry can be accomplished by entering new or established markets with new or existing goods or services.”

They thus define entrepreneurship according to Ansoff's matrix (Kotler, 2003) (Figure 2.8).

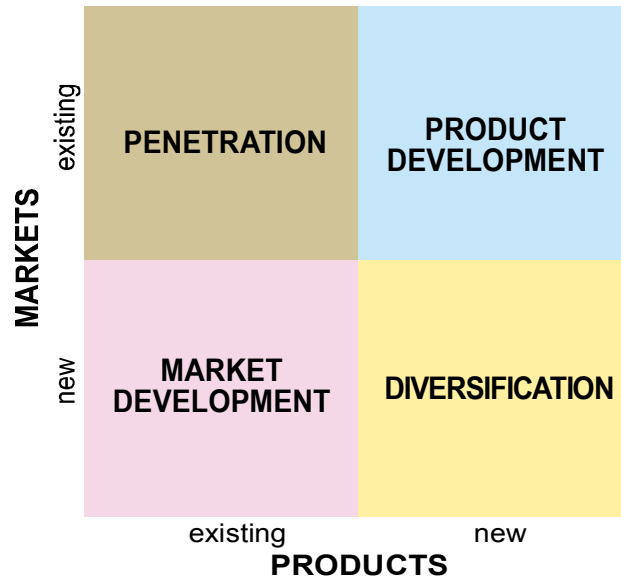


Figure 2.8: Ansoff's Matrix.

This is in contrast to the less useful definition and the usual measure of entrepreneurship, new venture creation, (e.g. Gartner, 1985; Drucker, 1998; Thomas & Mueller, 2000; Baumol, 2004; Frederick, et al, 2007). Figure 2.9 shows N.Z.'s start-up rate as amongst the highest in the world, but on high growth business rankings it was 26th out of 36 countries surveyed in the G.E.M. study (Frederick & Chittock, 2006).

Drucker (1985) and Lumpkin & Dess (1996a) portray innovation as the specific instrument of entrepreneurship while Hisrich (1988) observes that entrepreneurs demonstrate initiative and creative thinking. Lumpkin & Dess (1996a:149) in defining *Entrepreneurial Orientation* as “*Autonomy, innovativeness, risk taking, proactiveness & competitive aggressiveness*² ...” (Emphasis added) establish the relationship

² It is worth noting the correlation with the GLOBE definition of *assertiveness* as including aggressiveness in business relations and N.Z.'s low rating.

between innovation and entrepreneurship, a position supported by Morris, et al (1994). That is, innovativeness is an antecedent of entrepreneurship. Entrepreneurship by definition involves implementation (see below) but not necessarily innovation. For example, Lumpkin & Dess (1996a:150) in describing five different types of entrepreneurship, note that one, acquisition, i.e. buying other firms, requires “*little or no innovation*”.

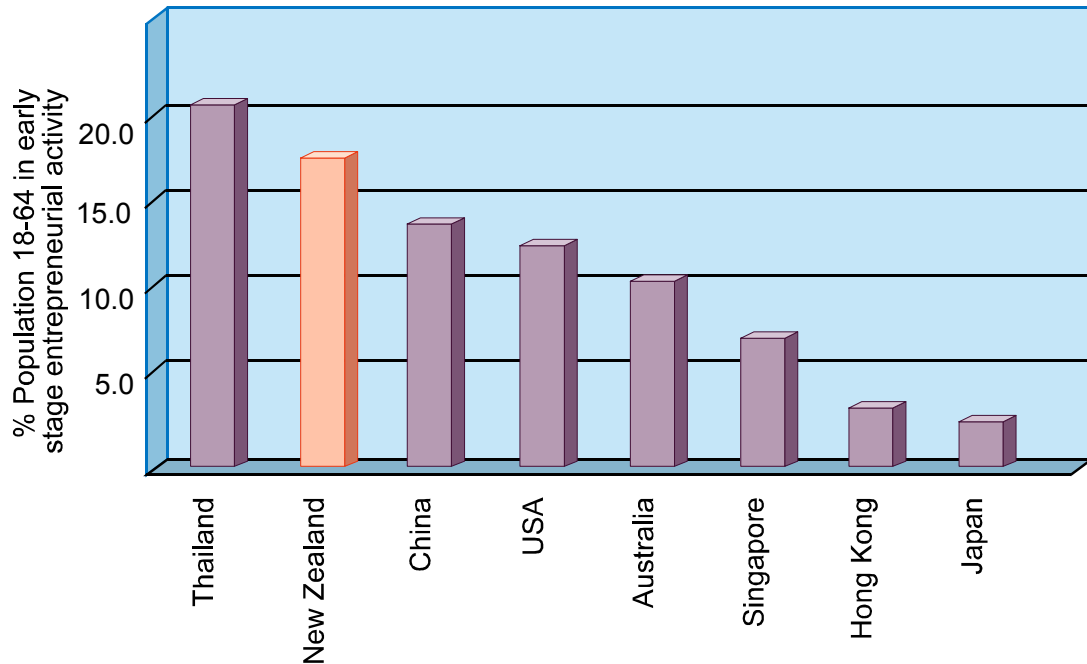


Figure 2.9: Entrepreneurial Start-up rates. (Frederick, 2007:5)

2.4.2 Stages of innovation

The ambiguity surrounding definitions is to a large degree attributable to the failure to recognise the multiple stages of the *innovation process*, as many as thirteen according to Nakata & Sivakumar (1996) and INNOCULT (2006). Various authors separate the *innovation process* into initiation and implementation, (e.g. Marino, 1982; Zmud, 1982; Scott and Bruce, 1994; Rank, et al, 2004; INNOCULT, 2006).

For clarity, the following definitions are adapted and adopted from Rank, et al (2004) and Levitt (2008) for this work:

- Initiation = creativity or ideation stage
- Implementation = application of the new ideas
- Innovation process = Initiation + Implementation

The literature including Rank, et al's (2004) model (Figure 2.10) appears to incorrectly represent the stages as discrete and linear.

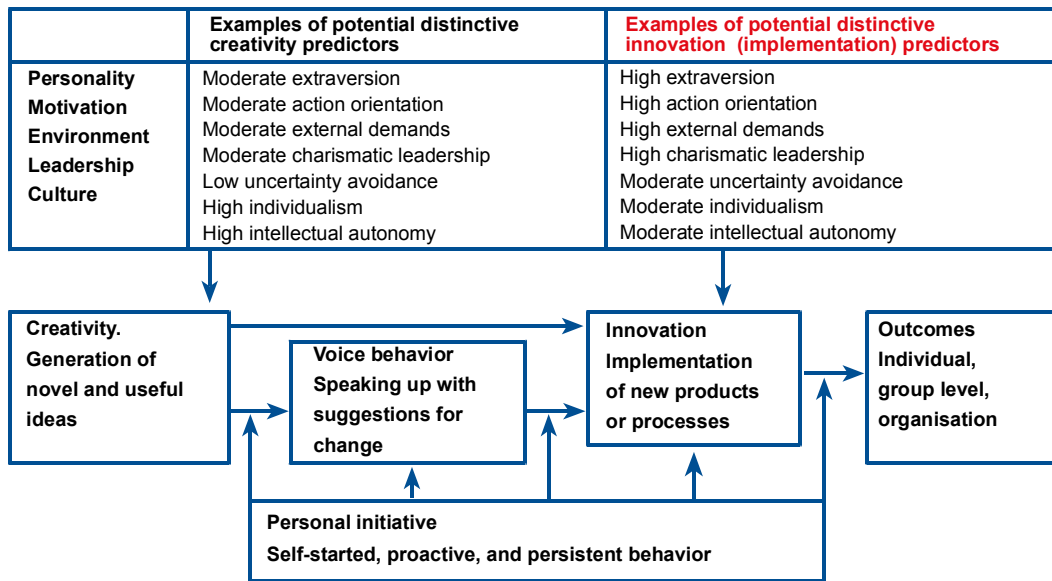


Figure 2.10: Rank et al's (2004:521) model of "creativity" and "innovation". (N.B. red text missing from published model)

The model presented in Figure 2.11 depicts an alternative model where implementation is a continuous a-linear process shrouded in ongoing creativity permeating into the implementation core as problems are recognised and solutions found.

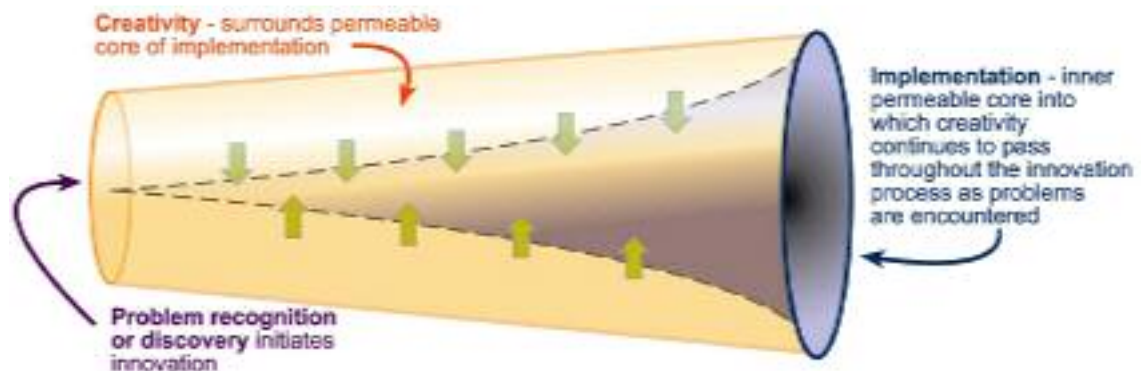


Figure 2.11: An alternative model of the initiation and implementation of innovation.

Rank, et al (2004:520) describe creativity as "... *intraindividual*" while implementation is an "*interindividual social process*", (emphasis added). In other words the process transitions from predominantly private/individual cognitive and experimental processes to an increasingly behaviour based and public/collective one with commensurate increases in psychological exposure as depicted in Figure 2.12.

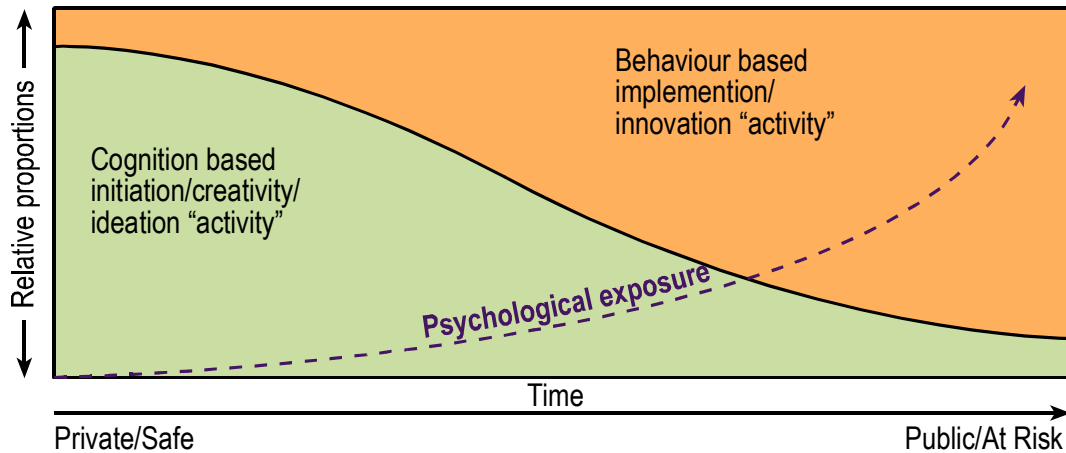


Figure 2.12: Transition from cognition to behaviour and concomitant increase in psychological exposure.

This is an important distinction in how initiative (creativity or ideation) and implementative cognition and behaviour may be distinguished. The former is private, controlled and safe. The latter carries the risk of the idea being stolen, ridiculed or discredited through analysis, as well as the commitment of money and in most instances transfers control to others. In the N.Z. context, control centricity, reluctance to receive feedback, negative attitudes to failure, low assertiveness, and the *tall poppy syndrome* combine to create preference for the intraindividual creation and avoidance of the interindividual social process of implementation.

Figure 2.13 aims to draw together an interpretation of these various concepts from this chapter into a single model.

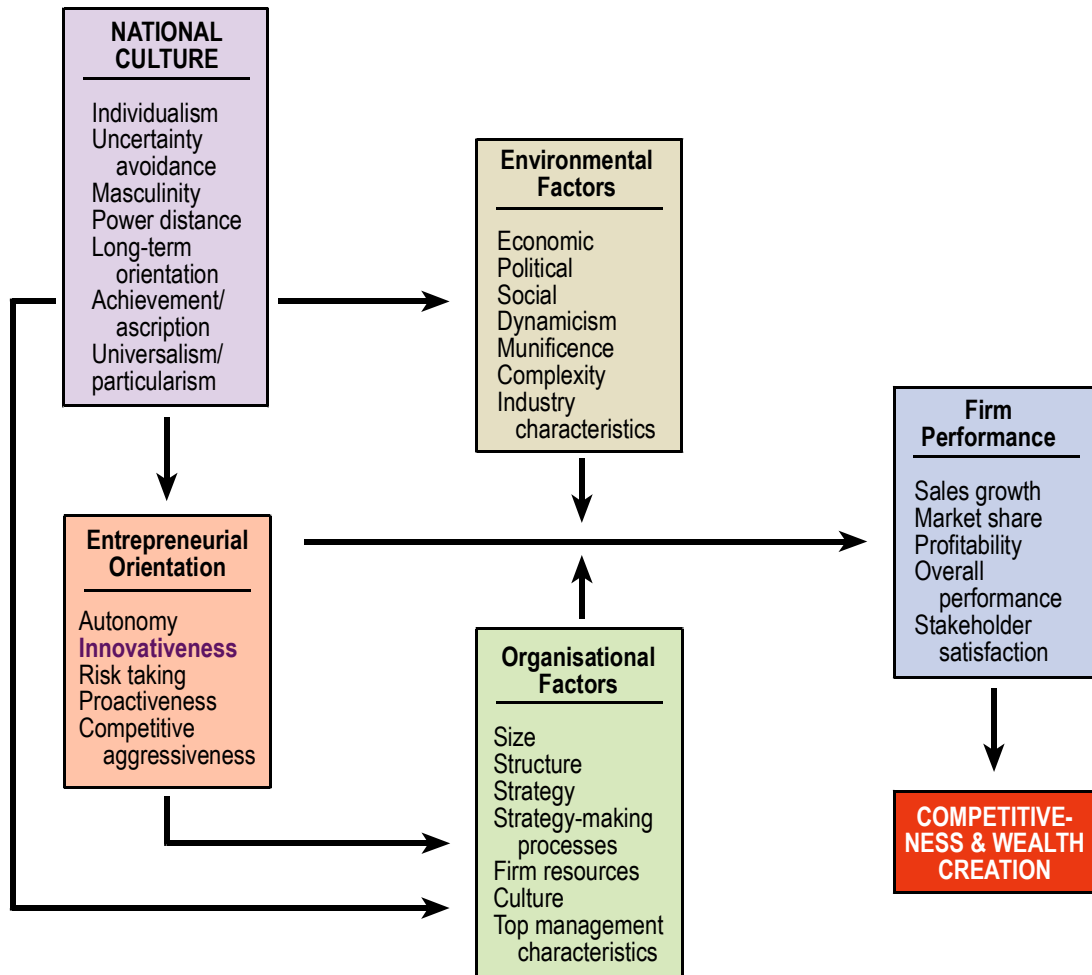


Figure 2.13: Culture and Innovation's role in *Entrepreneurial Orientation* and economic performance. (After Lumpkin & Dess 1996:152; Lee & Peterson, 2000; Hofstede 2001)

2.4.3 Where innovation begins

There is a considerable divergence in the literature as to how and where innovation is initiated. In what is most probably reference to Research, Science, and Technology (R.S.& T.), writers like Drucker (1998), Tjosvold & Wong (2004), and the Centre for Organisational Excellence Research (2007) refer to innovation as a systematic and purposeful process. However NESTA (2007) reports that only 6% of the innovation in the UK economy is derived from this source and Lundvall (2006) reports that this model was discredited by empirical work in the 1970s and 80s. Along with Rothwell (1994), Freeman (1987), and the World Bank (1991), Lundvall (2006) states that important parts of the knowledge base are tacit and arise from routine-based learning by doing, using, and interacting with work place problems. Martello (1992:83) links serendipity and innovation, describing it as the ability to “notice the clues, realise its

significance and follow it up” or citing words attributed to Louis Pasteur “Chance favours the prepared mind.”

While it is clear that systematic search and routine based learning both occur, with researchers working and reporting from these quite distinct perspectives, a further source of ambiguity is revealed.

Schwartz (1999) and Pohlmann (2005) introduce two concepts of central interest to this work. Pohlmann (2005) observes that what motivates and constitutes innovation is country/culture dependent. He writes that in South Korea it is realising growth, China & Taiwan making money in business networks, Germany making three dimensional artefacts, and the U.S.A. making money in markets. GIAB (2004) and Frederick, et al (2007) imply that in N.Z. it is independence and lifestyle.

Schwartz (1999:43) states:

“... the goals chosen by managers to motivate workers will be more effective if they are compatible with prevailing cultural emphases.”

In other words, first, the level of total innovation activity is a product of motivation (see later reference to Maslow’s hierarchy of needs). Second, individuals, and groups (including nations) will engage in those activities that most closely align with their values and psychological or aspirational needs, and avoid those that are dissonant. These ideas are drawn together in Figure 2.17.

2.5 Innovation and Culture – Correlations

2.5.1 Correlations between “innovation” and culture

Rank, et al (2004) and INNOCULT (2006) highlight the neglect in the literature of the role of culture in N.I.S.s. The vast majority of papers that do correlate innovation and culture treat innovation as an homogenous whole, a position according to Damanpour (1991) that is unsustainable and claim Nakata & Sivakumar (1996), explains much of the reported ambiguity.

The focus and scope of this work limits discussion to the correlations between the stages of the innovation process and cultural dimensions. Such reported correlations are shown in Table 2.

Table 2: Correlations between dimensions and initiation and implementation of innovation.					
	Supports INITIATION		Supports IMPLEMENTATION		N.Z. Score
	RP&F	N&S	RP&F	N&S	
INDIVIDUALISM	High	High	Moderate	Low*	High
POWER DISTANCE		Low		High	Low
UNCERTAINTY AVOIDANCE	Low	Low	Moderate	High	Mod**
MASCULINITY		Low		High	Mod***
LONG-TERM ORIENTATION	Urgency etc supports	+ pole supports	Urgency etc suppresses	+ pole supports	Low
INTELLECTUAL AUTONOMY	High		Moderate		Mod
ACTION ORIENTATION	Moderate		High		High (based on criteria)

* Strictly high collectivism, ** Below world average, *** Above world average. (RP&F = Rank, Pace & Frese, N&S = Nakata & Sivakumar)

2.5.2 Correlations between culture and the initiation and implementation of innovation

While much of the work is reported as if the dimensions act in isolation one from the other, Mueller & Thomas's (2001) study of over 1,800 third and fourth year university students in nine countries, showed that the dimensions may act collectively and Schwartz (1999) refers to the dimensions being compatible or in conflict. This is an important consideration in interpreting the research findings.

N.Z.'s rankings have already been shown in Figures 2.3 to 2.6 and their approximate (average) fit with positively moderating either initiation or implementation are shown in Figure 2.14. The plot is arranged in such a way that for each dimension the pole most favourable to initiation or implementation respectively is shown to the outside. Thus an ideal fit for both initiation and implementation would lay around the perimeter.

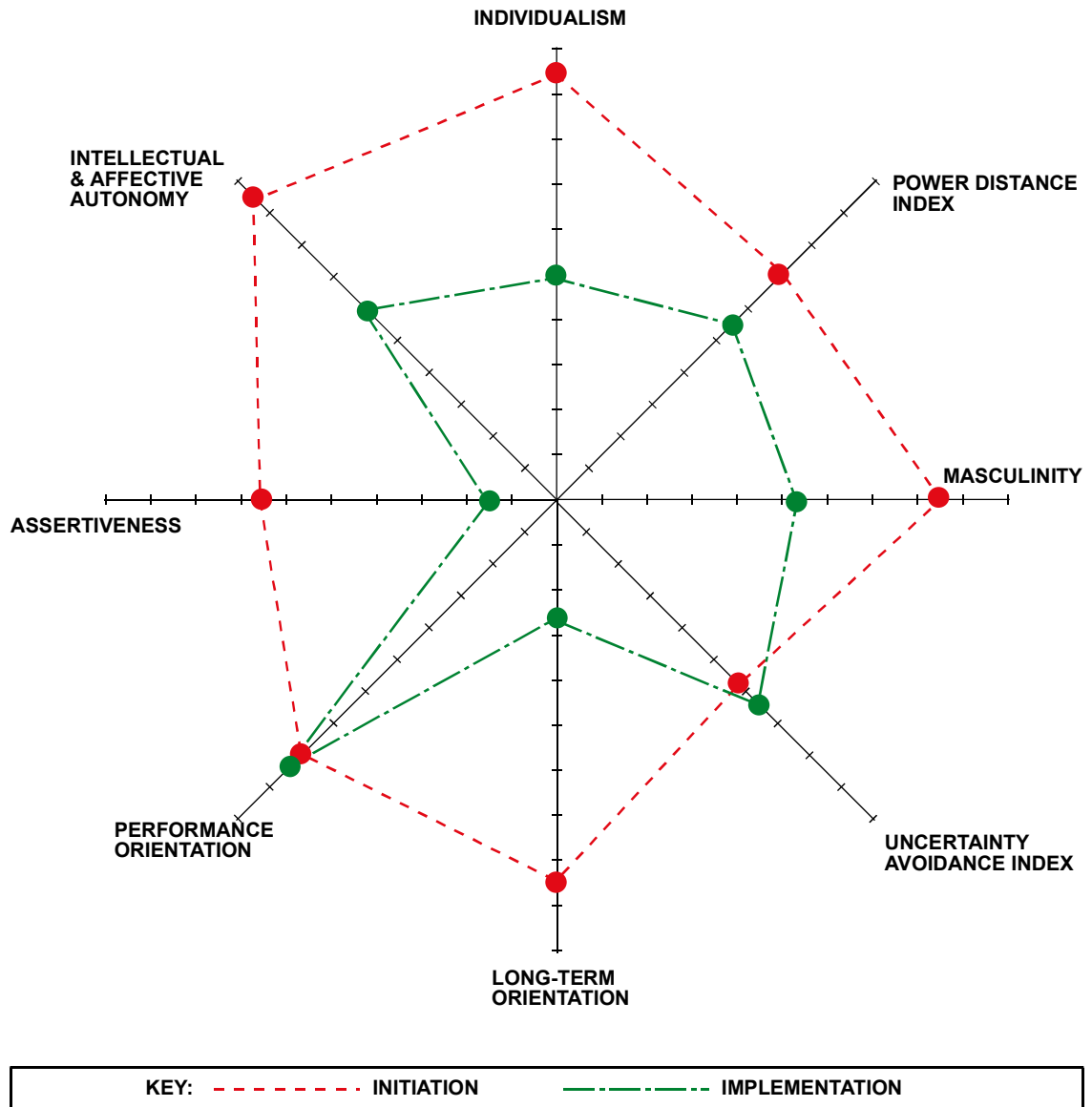


Figure 2.14: N.Z.'s dimension rankings shown as a compatibility score for both initiation and implementation.

Individualism

The literature reports a positive correlation between *individualism* and initiation and a negative correlation with implementation. (Nakata & Sivakumar, 1996).

Schwartz (1999:27) reports that *intellectual autonomy* is associated with curiosity, broadmindedness and creativity while *conservatism* ("the person is viewed as an entity embedded in the collectivity"), which he reports as being at the opposite pole to *individualism*, is associated with maintaining the status quo and placing a restraint on actions that disrupt the traditional order. In other words, acting against the

“*willingness to depart from existing technologies or practices...*” that Lumpkin & Dess (1996a:142), state is the basis of innovation.

Shane (1992, 1993) reported a correlation between *individualism* and trademark and patent data, concluding that a country's conceptual inventiveness is related to its *individualism*. Nakata and Sivakumar (1996) concluded that *individualism*, characterised by nonconformity, personal vision and a “loose” environment, encouraged the maximum number, range and novelty of ideas. Shane, et al (1995) arrived at a similar conclusion arguing that strong financial controls acted against the innovation process. (His argument appeared to relate to the initiation stage).

Collectivism is also reported as an asset as it promotes implementation through emphasis on interdependence, co-operation, unified purpose, cohesion and single-minded purpose. More directly, Larson & Gobeli (1988) (cited in Nakata & Sivakumar 1996) in a study of several hundred firms showed that organisational collaboration led to superior innovation outcomes.

Schwartz (1999) presented what appeared to be a conflicting view associating collectivism with conservatism and resistance to change but also with work centrality. It is possible therefore that the resistance is overcome by the work centrality. An alternative explanation lays in the GLOBE work that measures two components of *collectivism*.

On this dimension N.Z. culture should positively moderate initiative and negatively moderate implementative behaviour.

Power Distance Index (P.D.I.)/Egalitarianism

Much of the work relating to P.D.I. relies upon the correlation between P.D.I. and organisational centralisation (Hofstede, 2001). The literature correlating P.D.I. and initiation or implementation is not entirely consistent and reflects the ambiguity over how the stages are defined. Shane (1992, 1993, 1995), Lee and Peterson (2000) (*Entrepreneurial Orientation*), and Hofstede (2001) reported inverse relationships between the innovation process and P.D.. He also observed that hierarchical societies are more fatalistic and less inclined to the effort necessary for innovation. Rank, et al (2004) do not include P.D. at either stage while Trompenaars & Hampden-Turner's

(1998) *achievement/ascription* and *specific/diffuse* dimensions both bear a resemblance to elements of P.D.. Schwartz's (1999) *hierarchy* is similar to P.D. and he reports that *hierarchy* is compatible with work centrality and *egalitarianism* is in "opposition". Similarly *hierarchy* is in conflict with *affective autonomy*. Schwartz located N.Z. in the *mastery/ autonomy/egalitarianism/low work centrality* sphere.

P.D. appeared to impact the formation of social capital and different parts of social capital appeared to be important at different stages of the innovation process (knowledge transfer at initiation and trust at implementation). Shane (1992) made the association between innovativeness and communication, and Knack & Keefer (1997), Nahapiet, & Ghoshal (1998), and Woodhouse (2006) all argue that social capital contributes to the creation of new intellectual capital, which equals "creativity" (Woodman, et al, 1993).

Shane (1992, 1993) reported a negative correlation between patenting and trademarking activity and emphasis on social hierarchy and that inventions cause radical social change that is resisted by the hierarchy as it erodes their power. Creativity requires decentralised authority and Shane (1992) reported that hierarchical societies tend to have systems less based on trust and more on rules and procedures that inhibit creativity. Similarly, Nakata & Sivakumar (1996) argue that low P.D. cultures have less concern for formal procedures resulting in faster and more flexible thinking and decision making, acceptance of contributions regardless of identity or position in an organisation and superior communications. Even in relatively low P.D. N.Z. the importance of this could be seen in the GIAB (2004) research that showed employers thought they were much more receptive to ideas than their employees believed they were.

The literature indicates that high P.D./centralised authority supports the *innovation process* (Maidique & Zirger 1984) through communication & co-ordination, the scheduling of resources required to bring a product to market and the overcoming of resistance to change (Stewart, 1969) (cited in Nakata & Sivakumar, 1996). Booz, et al 1982) (cited in Nakata & Sivakumar, 1996) suggest that centralisation supports implementation by incentivising entrepreneurial behaviour. However it is difficult to understand why similar incentives cannot be created within a decentralised structure and Trompenaars & Hampden-Turner (1998) make a particular point that a centralised

approach to incentivisation is fraught with difficulties. Meanwhile, Pohlmann (2005) warned that increasing incentives led to bureaucratic behaviour that inhibits innovation.

Schwartz's (1999) *hierarchy* dimension is compatible with work centrality and may provide a clue to the reported correlations, that is, high P.D./hierarchical cultures have a high level of compatibility with work/task/instruction and therefore a high level of compatibility with the structured approach necessary for effective implementation.

This dimension can be expected in N.Z. to favour initiation over implementation.

Masculinity, mastery, assertiveness and performance orientation

Nakata & Sivakumar (1996) report that the purposefulness associated with masculinity promotes innovation in general and Lee & Peterson (2000) report the same association with entrepreneurialism. Thomas & Mueller (2000) predicted that societies that emphasised achievement (a masculine trait) would exhibit greater levels of entrepreneurship (implementation). Conversely neither Shane (1992, 1993, 1995) nor Rank, et al (2004) report any correlation with innovation or initiation/implementation respectively.

Ulijn et al (2001) identified that the high *femininity*, in the Netherlands and Scandinavian countries appeared to encourage technical innovation in the initiation stage through focus on people and the establishment of warm supportive climates that positively affected initiative activity. Conversely, the masculinity of Germany, Japan and other countries aided implementation.

Hofstede (2001) and Javidan & House (2001) ranked N.Z. low/medium on *masculinity* and *gender egalitarianism* respectively. The latter rank N.Z. as the second least assertive of the countries surveyed suggesting that:

"The less assertive societies like Sweden and New Zealand tend to prefer warm and co-operative relations and harmony. They have sympathy for the weak and emphasize loyalty and solidarity."

This coincides with Hofstede's femininity but conflicts with the high *individualism* and Schwartz's (1999) medium/high *mastery* (getting ahead through self-assertion) pole of the *mastery-harmony* dimension.

Javidan & House (2001) also reported New Zealand as very high on *performance orientation* (extent to which improvement and excellence is rewarded), behind only Singapore and Hong Kong. Rank, et al (2004) state that high *action orientation* (translation of intentions into goal directed behaviour) may positively predict implementation. Harris, et al (2005) found that in N.Z. "*can do*" (presumably an interpretation of *action orientation*) seldom extended to "*have a go*" suggesting that low assertiveness (or other factors) may be negatively moderating *performance* and *action orientations*. Thus the value of the evident abundance of new ideas is not fully realised. Yet Phillips (1987) reported a resentment of "slackers" or freeloaders most likely attributable to the high *performance orientation*, *individualism*, and *mastery*.

This further supports the postulate that the different typologies comprise of sub-components assembled in different combinations and are context specific. N.Z.ers are intensely competitive on the sports field and while feeling empathy for the weak, are disappointed if they are not crushed by record margins. House, et al's (2001) claim of *loyalty and solidarity* is in direct conflict with the same authors reported very low *in group collectivism* (very similar to the special obligations of *particularism*). This may also represent an example of dissonance between norms and values. Norms relate to "*how I normally should behave*", "*values give us a feeling of 'this is how I aspire or desire to behave'*" (Trompenaars & Hampden-Turner, 1998:22)

Uncertainty Avoidance:

Risk taking is the most commonly reported entrepreneurial trait. Risk propensity and tolerance for ambiguity appeared in the work of Contillon circa 1700 from where the term entrepreneur originated (Thomas & Mueller, 2000). Hofstede pointed out that risk taking and U.A. are not synonymous although much of the literature neglects the distinction.

The entrepreneurship literature widely reports an association with risk taking (e.g. Kets de Vries, 1977; Hisrich, 1988; Covin & Slevin, 1991; Morris, et al, 1994; Lumpkin & Dess, 1996a). Lee & Peterson (2000) and Hofstede (2001) both report

strong negative correlations between U.A. and innovation and entrepreneurial orientation respectively.

Various authors, (e.g. Van de Ven, 1986; Shane, 1993, 1995; Shane, et al, 1995; Pohlmann, 2005) report associations between innovation and perceptions of change, and that change, and thus innovation is resisted. Shane (1992) reported a negative association between U.A. and inventiveness and Nakata & Sivakumar (1996) reached a similar conclusion based on their literature review.

In a survey of several hundred managers in diverse industries, O'Reilly (1989) showed a strong association between risk taking and innovation. Myerson & Hamilton (1996) report a similar association. Gresov (1984) claims that there is an inherent element of chaos about the early stages of the *innovation process*. Peters & Austin (1986:119) describe the process as "*predicated on uncertainty and ambiguity*" and that detailed planning, that may be associated with U.A., can be counter productive. Conversely Cooper & Kleinschmidt (1986) (cited in Nakata & Sivakumar, 1996) studying over 200 *innovation processes* concluded that tight planning is beneficial. Booz et al (1982) (cited in Nakata & Sivakumar, 1996) noted that high emphasis on control helps with the selection process and ensures that the many stages of prototyping, testing alternatives, manufacturing and market introduction are co-ordinated and the chances of making costly mistakes minimised.

Rank et al (2004) report that low U.A. supports creativity and moderate U.A. supports implementation. This is a more realistic perspective than much of the research above that reports correlations with the extreme poles.

Harris et al (2005) reported that there is low risk aversion in N.Z. to trying out new ideas but that the application of money to implement the ideas leads to risk aversion. This is supported by an apparent trend towards experts (usually to pass off risk), tight organisational structures, and highly specialised career paths that Hofstede (2001) reports are incompatible with the cognition needed for an entrepreneurial setting.

Current expression of N.Z.'s reported U.A. ranking is unlikely to be a major determinant of any tendency to either initiation or implementation, but that does not discount attitudes to uncertainty being of importance to the research.

Long-term orientation (L.T.O.)

L.T.O. is different to the other dimensions according to Nakata and Sivakumar (1996) in that it does not differentially impact the two stages of the *innovation process* but supports or inhibits both equally.

Hofstede (2001) reports a correlation between L.T.O. and innovation although Shane (1992, 1993, 1995), Lee & Peterson (2000), and Rank, et al (2004) do not. Schwartz's (1999:28) *Mastery-Harmony* dimension aligns with elements of the L.T.O., and *mastery*, described as an emphasis on getting ahead through "*active self assertion*" is compatible with work centrality.

Both Busenitz & Lau (1996) and Javidan (2007) associate long term orientation with entrepreneurship and innovation, with Javidan making the further connection with G.D.P. per capita, happiness, confidence and competitiveness (Figure 2.15).

Referring to L.T.O. Nakata and Sivakumar (1996) suggest that initiating cultures will include N.Z..

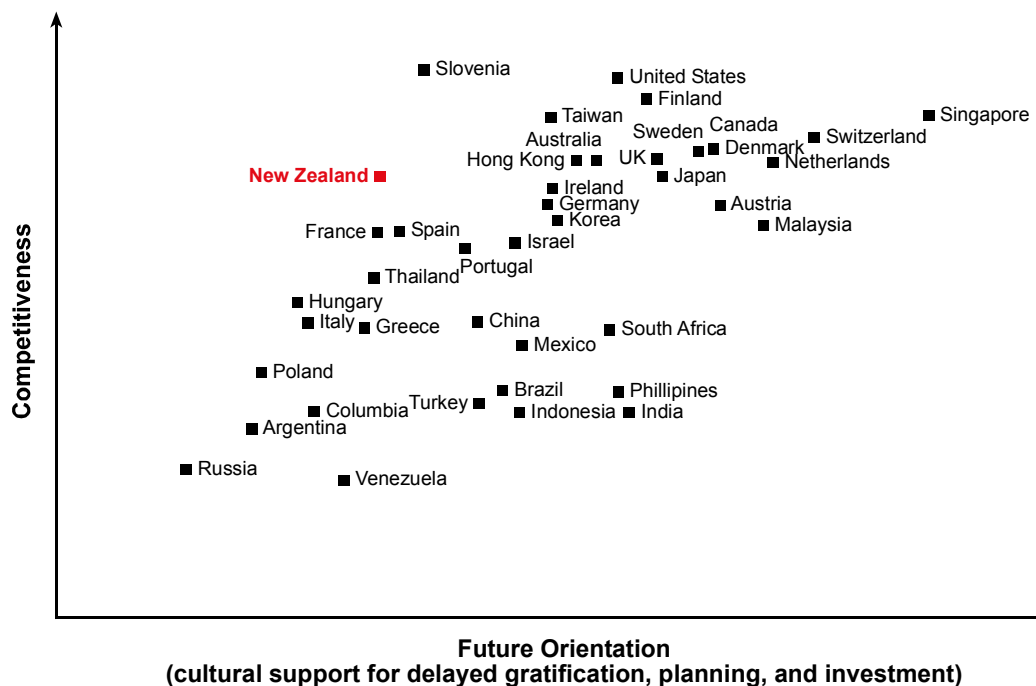


Figure 2.15: Relationship between long term orientation and competitiveness. Javidan (2007).

Affective/neutral (range of feelings expressed)

N.Z. is reported as the fourth least likely out of 49 countries to show emotions at work (Trompenaars & Hampden-Turner 1998). This appeared to have an early foundation with Phillips (1987:38) citing Elkington (1891) “*The true colonial is not demonstrative ...*”.

Specific/Diffuse and Achievement/Ascription

Trompenaars & Hampden-Turner (1998) report N.Z. as high on both their *specific* and *achievement* dimensions. In a salient comment, Trompenaars (1998:113) writes “*In Britain, however, presenting myself as ‘doctor’ may suggest a rather too academic bent for a business consultant.*”

2.6 N.Z. Specific Literature

N.Z. has a global reputation for innovativeness, often referred to as the “Number 8 gauge wire mentality” and summed up famously by Ernest Lord Rutherford as “*We haven’t the money so we must think*” (Frederick, et al 2007:123). Similarly, the commercial potential of one of N.Z.’s most iconic innovations, Sir Edmund Hillary’s audacious “make and use” adaptation of Massey Ferguson farm tractors to journey to the South Pole, was never recognised as a commercial opportunity, despite it having proved superior to the commercially available products of the time.

Research indicates a strong belief that being “innovative” is part of the N.Z. character (GIAB, 2004; Harris, et al, 2005), although this may be a belief common to Anglo-Saxon countries. Schramm (2008:x) for instance in referring to the U.S.A. writes: “*We believe our propensity [to innovate] is central to our character...*”

Fabling (2007:18) reports that “*... very few innovation activities are found to be significantly linked to positive innovation outcomes four years on.*” (2001– 2005). N.Z.’s under performance is often attributed to lifestyle factors, especially the “3Bs” – *Bach* (holiday home), *Boat* and *BMW* (e.g. GIAB, 2004; Frederick, et al 2007; Quinn, 2007) or “satisficing”. Frederick, et al (2007) have explained N.Z.’s lack of “serial entrepreneurs” as a consequence of the “*tall poppy syndrome*” and “lifestyle entrepreneurs”. Research by Quinn (2007) (Figure 2.16) showed the top nine

Reasons for being in business



Figure 2.16: Top nine motivators of business development in N.Z.. (Quinn, 2007)

motivations for N.Z.ers being in business. Note that the number one reason reflects *individualism* while three of the next four are related to *affective autonomy*.

Schwartz (1999) identified compatibility or conflict between certain attributes and groups of dimensions, for instance reporting *mastery* and *hierarchy* as compatible with *work centrality* and *affective autonomy*, *egalitarianism*, *harmony* as conflicting. Schwartz (1999) reported N.Z. as high on *Affective Autonomy* (in the student sample, the highest), that is, emphasis on leisure and having fun (at the expense of focus on work). Conversely the fact that N.Z.ers work longer hours than any other developed nation after Japan (Messenger, 2004) may provide an example of an environmental factor (economic necessity) acting against culture.

Phillips (1987) provides an insight to the practical, highly adaptable cultural characteristic. The earliest European arrivals (sealers, whalers, gold-miners) were hardy, self-determinant men with great practical ability and adaptability, but little formal education. By the mid 19th century literacy was higher amongst the Māori natives than the European settlers (DOL, 2007). Manufactured goods were, as a result of transport costs prohibitively expensive, so the colonist had to make do with those things he could make. That early versatility and practicality was complemented by recruiting large numbers of lower class, largely illiterate English agricultural workers. The admiration of versatility continues to this day. Phillips (1987:18) writes:

“In the UK the term ‘Jack of all trades’ was inevitably accompanied by the qualifier ‘but master of none’. In New Zealand, ‘Jack of all trades’ was a term of unqualified approval.”

Entering the First World War, the N.Z. troops were commanded by public school educated aristocratic British officers who treated the colonials with considerable contempt. This was reciprocated by the Kiwis who rarely saluted their officers and when N.Z. officers emerged, often referred to each other by their given names. It is not difficult to postulate that the enculturation of a new generation of N.Z.ers would have been greatly influenced by the admiration of practical skills and the contempt for/distrust of authority/leadership and “book learning” (Phillips, 1987).

2.7 The Role of Champions

Shane (1995) reported that organisations often resist new ideas and only innovate when some force such as champions pushes them.

Although the reviewed literature does not make specific reference, it is probable that there is a correlation between *individualism* (+ve), U.A. (-ve) and P.D. (-ve) and the emergence of champions which should favour N.Z.. However, associated factors such as the “*tall poppy syndrome*” and low assertiveness may significantly moderate against the emergence of champions.

2.8 Chapter Summary

This chapter has sought to define culture, cultural dimensions and innovation. It has distinguished innovation from entrepreneurship and initiation (creativity or ideation) from implementation (actioning the ideas), including determining that there is a close association between implementation and entrepreneurship. The differential moderation of dimensions at the two principal stages of innovation has been explored in some depth. A summary of the reported dimensions for N.Z. from a variety of researchers have been aggregated to determine that N.Z. is highly *individualistic*, *short-term oriented*, and is *egalitarian* but believes in self-determination. It tends towards *femininity* although is one of the least likely cultures to show emotion in the work place. It is *performance oriented* but lacks *assertiveness*, accords respect on the basis of *achievement* and tends towards reliance on rules rather than relationships. It is highly *specific*, i.e. status associated with work is separate from that in the social environment. The reported findings have been analysed and explanations sought to explain N.Z.’s unique culture. As the Findings will show, it is a *conditional culture*.

The model presented in Figure 2.17 represents an effort to explain what motivates innovation and how it may impact initiation and implementation differentially and the model supports and is supported by the findings described in Chapter 4.

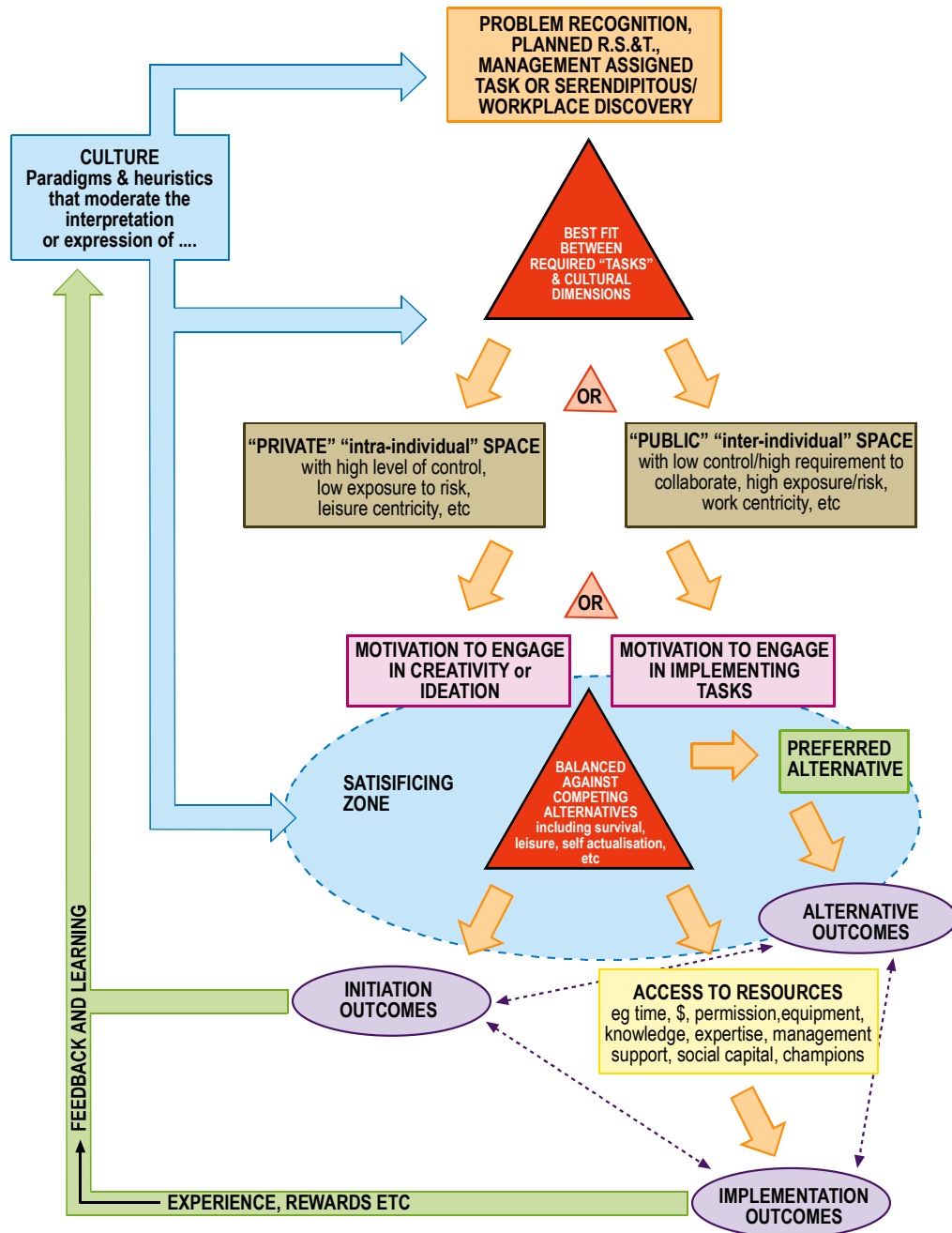


Figure 2.17: Culture and the motivation to initiate or implement innovation incorporating elements of Rank, et al, 2004 (brown boxes).

3. RESEARCH METHODOLOGY AND DATA COLLECTION

3.1 Introduction

This section identifies an effective methodology appropriate to the purpose of the work. Qualitative research used a grounded, subjective, interpretivist paradigm to identify and explore causality between the observed behaviours and practices, the semi-quantitative cultural dimensions reported in the literature and N.Z.'s innovation effort.

“Grounded theory is an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data.” (Martin & Turner, 1986:141).

The research was conducted using purposively chosen interview subjects. In a number of instances the interview findings were complemented with further specific enquiries.

3.2 Research Question

The literature predicts that N.Z. should have comparative strengths in the initiation of innovation but comparative disadvantage in the implementation stage. Value is appropriated in the implementation stage. It is possible therefore that a barrier/s moderate against the transition from the initiation to implementation stages or the creation/appropriation of value from the implementation and provides an explanation for N.Z.'s poor performance in realising value from its innovation efforts. Part at least of that barrier may be culturally derived. Culture provides the paradigms and heuristics through which people interpret the stimuli they receive from their environment. An acceptable body of work exists defining and quantifying N.Z.'s cultural dimensions. This work seeks to determine if those cultural dimensions influence cognition and behaviour in a way that may explain the relatively poor appropriation of value from the national innovation effort.

The research question for this work therefore is:

“Does N.Z.’s national culture represent a barrier to creating and appropriating benefits from the national innovation effort?”

It is hypothesised that consistent with the literature, a number of behaviours rooted in the national culture will represent barriers to appropriating benefit from the country's N.I.S.

3.3 Purposive Sampling

A purposive sampling approach was adopted with the subjects chosen because of their recognised expertise and credibility in the subject. A schedule of the interviewees is shown as Appendix 3.

Grounded theory indicates that unlike quantitative research, it is impossible to determine in advance the sample size and instead the principle of theoretical saturation must be applied (Pandit, 1996). For this research, theoretical saturation appeared to be reached at a comparatively early stage and the researcher was confident that saturation was achieved by the time 23 principal interviews were completed.

A mix of native born N.Z.ers and immigrants, as well as N.Z.ers who had worked in other cultures was chosen to provide internal and external reference points. A series of complementary discussions were used or referred back to where necessary to further explore or demonstrate points that appeared to require additional clarification.

3.4 Design Testing and Evolution

The methodology was iterative. Findings were analysed progressively and incorporated into subsequent interviews where appropriate to explore lines of enquiry that had not previously been identified. The design also accommodated the need to explore different specifics with different interviewees. According to Saunders, et al (2007) this is a valid methodology and for this type of topic possibly even a desirable one.

3.5 Research Design

Culture and the implementation of innovation are both social processes (Rank, et al 2004). The research was grounded in the experiences and understanding of the interviewees. The methodological approach was validated by various authors (e.g. Pandit, 1996; Ulijn, et al, 2001; Saunders, et al, 2007).

The research paradigm is a grounded, subjective, interpretivist epistemology. It used the grounded approach as a strategy rather than a set of procedures in the Strauss and Corbin sense which is a *“less formalised and proceduralised way while still maintaining a systematic and rigorous approach”* (Saunders, et al, 2007:499). The methodology was chosen for four main reasons:

It acknowledges that the researcher is part of the research process. It is particularly helpful for predicting and explaining behaviour. It is based on the collection of qualitative data and allows the research emphasis to be refined throughout the research process. Finally, there is less concern with the need to generalise. That is, the work sought to discover the unknown (or unreported) rather than quantify the known, and to establish the rationale (and the irrationalities) linking culture and innovation specifically in the N.Z. context.

The research used primary research to support interpretations of the previously published quantitative data in the N.Z. context.

The interviews used a semi-structured one-to-one, face-to-face and telephone interview methodology. The approach supported a large number of complex questions where there was a need to tailor the questioning to accommodate the particular experiences and expertise of the interviewees.

3.6 Generalisability and Bias

There may be issues of generalisability associated with qualitatively based interviews and that is accepted as a limitation on the research. Generalisability is aided by the use of the quantitative data from other research. The research findings should in the first instance be limited to N.Z. but with careful interpretation may have wider application.

According to Saunders, et al (2007) the validity of findings using this approach is not at issue.

A common issue with this approach is interviewer and response bias. The subjects were all senior in status and intellectual strength and had no incentive to bias their responses. Culture and life experience may influence the researchers interpretation of data and a personal statement as recommended by Saunders, et al (2007) is provided in Appendix 4.

3.7 Interview Process

Prospective participants were approached by letter sent by email providing background to the research, and requesting their participation. All approached except two replied without prompting and agreed to participate. Interview times/places were arranged by phone. Interviews were conducted in four N.Z. towns and cities.

The 23 formal interviews were conducted, face to face where possible and by telephone in three instances where a face-to-face meeting could not be arranged. The interviews took place between December 2007 and February 2008. In each instance the interviewees chose the location and ranged from the author's own office to airport lounges. The interviews ranged in duration from 50 minutes to 1 hour 50 minutes and were digitally recorded.

The interview guide sheet shown in Appendix 5 was used to provide as much structure and consistency to the interviews as practicable. However because the interviews were exploratory in nature and the interviewees so willingly contributed their views, the exact pathway through the interviews varied from case to case. Saunders, et al (2007) confirm that this is an acceptable approach and should not bias the results.

The formal interviews were supplemented by a number of confirmatory "discussions" intended to enrich the original findings.

3.7.1 The interview process

The process is described below:

Scene setting and permission: A standard introduction to the subject including confirmation that the previously provided information on initiation and implementation stages, N.Z.'s poor economic performance and its relationship to innovation, a description of the stages of innovation and the purpose of the interview was understood. Permission to record the interview was obtained and interviewees were provided with an assurance that they would not be identified in the dissertation without express written permission being obtained.

Inventiveness: Interviewees were engaged in a discussion of their concurrence with the literature claims that N.Z.ers are comparatively inventive. Their reasons for agreement or disagreement were then explored.

Barriers to implementation: Interviewees were engaged in a discussion of their concurrence with the literature claims that N.Z.ers should be relatively weak on implementation. Again the rationale was explored.

Prompting: Where interviewees failed to raise any of the issues, prompting as shown on the interview sheet was used.

Termination: The interviewees were then offered a copy of the completed research findings, thanked and the interview terminated.

3.8 Recording the data

Where travel and interview schedules permitted, each recording was reviewed and transcribed wherever practical as notes, interpretations and associations.

3.9 Data analysis

A grounded strategy was used for the data analysis (Saunders, et al, 2007). Using a “visualisation” process adapted from earlier training in the Accelerated Planning Technique[©] (<http://www.applan.com/>) each unit of data was disaggregated, labelled (open coding) and a brief note transcribed to Post-it Notes[®]. Appendix 6 shows the

original codes and Figure 3.1 provides an example of a labelled data unit. Although a number of these were terms that also appeared in the literature they shared common meanings and did not cause confusion. As relationships emerged (axial coding) the groups of labelled data were regrouped into emergent themes. "Observations" or memos were recorded throughout this process and subsequently used as the basis of the Findings section (See Figure 3.2). Finally the themes were refined into central categories from which the Conclusions emerged. See Figure 4.1.

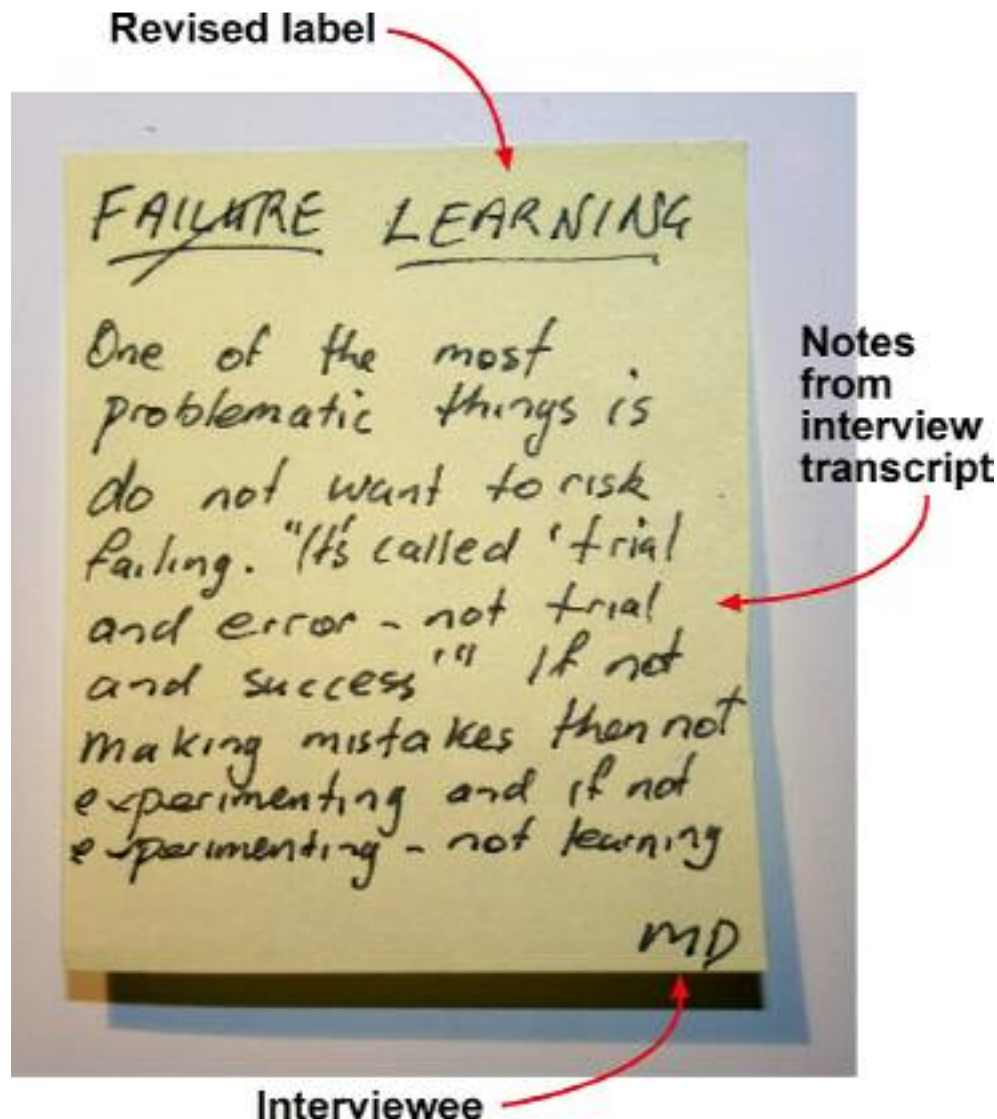


Figure 3.1: Labelled data unit.

Chapter 4 presents the findings and establishes assumed causal relationships between the observed behaviours and opinions, the reported cultural dimensions and innovation outcomes. It demonstrates a number of instances where culturally determined behaviours moderate against the implementation of innovation and especially against the optimisation of value. The most significant manifestation of the

culture is in satisficing, that the conclusions chapter will link to Maslow's hierarchy of needs.



Figure 3.2: The author coding the research findings. Arrows show the emerging themes.

4. FINDINGS and OBSERVATIONS

4.1 Introduction

This chapter reports the findings from the research described in the preceding chapter. The coding and theming process undertaken during the analysis revealed a number of behaviours that support the literature claim that a wedge or barrier to implementation of innovation exists. The research sought to discover behaviours that were manifestations of the underlying culture. The interviewees ranged across wide occupational groupings, public and private sector, native and immigrant N.Z.er's and politically liberal and conservative. Irrespective, their observations, understandings and insights into innovation in N.Z. and its association with determinants that may be associated with culture coalesced into remarkably consistent themes, supporting the claim that theoretical saturation had been achieved in the sampling.

The findings reveal a highly creative culture but significant “wedges” or barriers to optimising implementation and appropriation of value exist. The negative moderation of implementation is very specific and conditional and in several instances it may reflect unique “Kiwi” variants of the reported dimensions.

4.2 The Research Findings

The research supported the widespread belief in N.Z.er's inventiveness. However, even though there was no lack of novelty, the inventiveness was predominately practical, trial and error, incremental adaptation “make and use” problem solving. The distinguishing feature increasingly emerged as the ability to translate ideas into practical reality and the preference for this activity led to a “pathology of serial initiation” (INV3).

The “make and use” innovation was often based on ideas and I.P. acquired without thought for property rights. There was rare recognition of “make and sell” opportunities beyond the initial application and no organised effort to identify and commercialise such I.P. either at individual business or sector level. Purposive response to a recognised opportunity was in the minority although the knowledge and skills applied in the “make and use” context were portable.

Many companies offered almost unrestricted opportunity to experiment and one serial initiator appeared to run a multi-million dollar enterprise more as an R.& D. lab than a profit maximising business. There was no organised pathway to commercialisation.

There was awareness of the need to protect I.P. and the consequences of failing to do so. However there was a lack of appreciation of the potential arising from properly protected I.P.. A number of reasons were offered. Cost was the most frequent even though this was minor compared to what had been spent on R.& D. and the opportunities available. There was a belief that any protection obtained would not be able to be defended in the face of external illegal appropriation of the I.P. and a belief that protecting I.P. in N.Z. and Australia would meet the inventors' aspirations. There was little understanding of the effect of leaving an invention exposed to legitimate appropriation and possible protection in countries that produced products that competed with N.Z. in global markets. Premature disclosure was a significant problem.

In many quarters and particularly in the Public Service, I.P. was considered a currency of trade between colleagues, including between countries, even where that I.P. was not owned by the State. The author encountered one example where officials gave away industry owned I.P. (detailed documentation) to a competing nation's industry and then delivered a conference paper on the competitive advantage to be derived by N.Z. from that same I.P.. (International Conference of Molluscan Shellfish Safety, Galway, Ireland, 2006. Attended by the author).

- **The failure to recognise the value of and protect I.P. negatively impacts the ability to appropriate value from inventions.**

Consistent with the literature, there was little to suggest that wealth creation was a motivation for business endeavour. The most common early stage capitalisation relied on the three "Fs" (Friends, Family, Fools)³ and debt finance, usually secured over the

³ Unless a prospectus is issued, the N.Z. Securities Act (1978) limits capital raising to friends, family and close business associates.

family home with only 1:10,000 businesses using V.C. (Frederick & Chittock, 2006). At the same time there was a strong control centricity surrounding ownership that acted as a significant barrier to use of V.C.. The net effect was that the majority of firms had narrow and tightly held capital structures, were under-capitalised and growth dependent upon cashflow. The effect of that was to place a constraint on the rate of growth even though it was recognised, consistent with the literature that speed to market was of increasing importance (e.g. McGrath, et al, 1996; Roberts & Amit 2003). There were two stand-out exceptions. One was a former accountant who despite claiming that he was not money focused developed his business using private equity because he “*understood what money could do*” [in terms of growth] (INV21). The other was a professional company director who confirmed that there are no insurmountable institutional barriers, successfully using a portfolio of capital raising channels including V.C. and Initial Public Offerings. (INV6).

Similarly there was a reluctance to delegate or even engage in succession planning (subsequently confirmed in research by Battisti (2008). The reluctance to delegate is further reflected in an apparent tendency to centralise information flows irrespective of organisational structure. While in theory a degree of centralised control should benefit implementation, the benefits may be lost in the log-jam of information and decision making minutiae that results, with a subsequent negative impact on the macro-view and trust.

- **The low wealth creation motive accompanied by a strong control centricity represented a barrier to proper capitalisation and management of businesses, thus placing a cap on the speed of growth and value creation.**

Contrary to the literature, the interviewees reported a relatively high need for certainty. This appeared closely associated with a desire for simplicity and avoidance of complexity and ambiguity.

There was a widespread negative attitude to failure that led to an extremely cautious application of capital. This attitude was exacerbated by the scarcity of “big time” payoffs from investments and in fact only one example could be offered (*Trade-me* sale to Fairfax Media, 2007). This was compounded by the friends and family

connection with the capital that resulted in the entrepreneur having a heightened sense of responsibility to limit risk taking.

- **Negative attitudes to failure and the narrow capital base combine in an extremely cautious approach to investment, limiting the speed and quantum of realising value from innovations.**

There was a paralysing avoidance of risk within the Public Service. This impacted on policy and more particularly the way in which rules and regulations imposed on businesses were interpreted and the lack of urgency around decision making. However, although the literature predicted that bureaucracy suppresses creativity, there was no evidence offered of this being the case. Instead, almost all of the entrepreneurs related stories of personal bureaucratic encounters impacting their motivation to implement, the stage at which rules and regulations first became salient.

N.Z. (government) bureaucracy was strongly criticised, but deeper exploration often led to examples of worse experiences in overseas environments including neighbouring Australia.

- **Government bureaucracy significantly reduced the motivation to develop ideas into the implementation phase.**

There was a clear dichotomy of views regarding N.Z.er's assertiveness. One group reported views and experiences consistent with the literature claims of very low *assertiveness*. They saw this as a major barrier to pursuing big opportunities with one interviewee noting "*N.Z.ers lack the confidence to try big things, to pick up the phone and call important people.*" (INV4). A second group, especially immigrants, cited examples of sports success as evidence of assertiveness.

- **A lack of assertiveness may place a constraint on the willingness to implement big and bold innovation developments.**

Distance from market, which is generally considered from a freight cost perspective, was thought by a number of the interviewees to be more important from a psychological isolation perspective that made proper connection with and understanding of markets and their true potential difficult. This combined with an evident tendency to believe that all cultures do, or at least should, think the same way as N.Z.ers. An important rhetorical question was posed by one interviewee (INV13) *“How comfortable are N.Z.ers with the feelings necessary to understand the customer experience?”* This appeared to result in an unrecognised dis-engagement with markets.

At the same time the isolation created the perception of a “cloak of invisibility”, a belief that practices in N.Z. would not be observed in far away markets. This manifested in issues surrounding corporate social responsibility and more importantly in the context of this work, in the belief that “borrowing” (a euphemism for “stealing”) ideas and designs for incorporation in adaptations would not be noticed.

- **Psychological isolation limits proper market engagement and legitimises “borrowing” I.P..**

The interviewees reported a strong reluctance amongst N.Z.ers to provide or receive feedback of any sort. This appeared to be related to lack of assertiveness and self-confidence. *“Not complaining is an enduring legacy”* (INV 5). *“Even though N.Z.ers expect praise, they are ill equipped to give and receive praise but resent it when they don’t receive it”* (INV 20). This initial finding was tested against Dutch, German, Belgium, Canadian, and English immigrants who all reported being struck by the difficulty in obtaining and offering honest feedback.

Similarly, there was a significant reluctance to offer positive endorsements either verbally or through tangible rewards. Where reward systems did exist they were reported as reinforcing the *status quo* rather than change (innovation).

Although fully aware of the *tall poppy syndrome*, none of the interviewees were aware of being victims of it, although it was noted that to succeed in N.Z. it was necessary to have a particularly *“thick skin”*.

- **An endemic reluctance or inability to provide and receive feedback represents a significant barrier to learning, improvement and change management associated with effective innovation implementation.**

The research revealed an apparent conflict in the attitudes to rules. On the one hand there was a profound abhorrence of being required to comply with rules, for instance *“Rules are for the guidance of the wise and instruction of fools”* (INV21) and *“If you think the rule is silly you are duty bound to break it”* (INV5)]. Apparently paradoxically, N.Z.ers exhibit a strong belief in contracts as the basis of business relations. Possibly reflecting the flip side of this dichotomy, there were only modest personal sanctions for violation of the rules.

In so far as language is revealing of culture, the following, referring to a banking merger, was insightful. *“There was a strong move to adopting rules and contracts rather than the previous nonsense of a handshake.”* (INV12). This played out in a profound undervaluing of the importance of trust, relationships and networks. The need for contracts was, in this context, attributed to the lack of assertiveness to enforce personal undertakings.

N.Z.ers have a strong belief that “playing by the rules”, especially in business dealings and international trade will bring its own rewards. For instance the Minister of Agriculture the Hon. Jim Anderton (2007) argued (Pers. Comm) that NZ had nothing to worry about from the foodmiles debate (a belief system) because the science proved N.Z. products had a lower carbon footprint than similar products shipped from Italy to the UK.

- **N.Z.ers propensity to undervalue the importance of relationships, trust and networks in business conduct represents a significant barrier to maximising opportunities in some markets.**

A certain discomfort surrounded the valuing and utilisation of specialists and specialist knowledge. The most pertinent example was of a former senior airforce officer explaining how he had struggled with the elevation above his subordinates by his specialist status rather than having *“earned it”* (INV22).

Even though there was ready access to specialist knowledge there was a reluctance or inability to access it, especially in relation to business analysis and planning. This may have reflected confidence in the “do-it-yourself” generalist approach. This was typified by the labelling of a group of clients who it was claimed had become “expert” in finance in just two weeks by “*reading a book and talking to a few people.*” (INV18).

Outside of Government there was a reluctance to seek and pay for specialist knowledge and “*even when they seek advice they don't take it*”. (INV7). The confidence in generalists often meant that managers did not know when specialist services would be beneficial. Nowhere was this more evident than in an interviewee (INV9) reporting his own research on N.Z. seafood companies showing that the tertiary sector accounted for an average of 0.3% of innovation, C.R.I.'s 4.2%, and external suppliers and professionals (mostly local agents of overseas suppliers of software, process machinery etc) 15.4%. The remaining 61% was in-house, which he noted was self-limiting.

- **N.Z.ers reluctance to use specialists and access specialist knowledge leads to a do-it-yourself approach to product innovation and commercialisation that is self limiting.**

The literature claims of a relatively short-term orientation were supported by the research. There was a general disregard for planning, especially scheduling, and the 12 month annual seasonal primary production cycle pervaded even urban life and appeared to underpin the short planning horizon.

Time per se was accorded very little value typified by the statement “*It won't cost much, just time.*” (INV18). A non-attributable example was offered where a large publicly listed maritime company manager insisted upon removing and reinstalling the motors from their vessels in-house to “save money”, even though there was abundant evidence of problems, warranty violations, and wasted time.

Time resource was considered to be under extreme pressure in N.Z. businesses as efforts to increase productivity had seen longer working hours (Messenger, 2004) and

increasingly the elimination of social time, participation in competitions and the like. Thinking time that was no longer available within work hours was expected to be substituted during travel and leisure time. One professional director commented on how it was important to create an expectation amongst senior managers that they did their thinking in leisure time. (INV 6).

- **N.Z.ers under value time, justifying the “do-it-yourselfism”, while pressure to increase productivity has driven thinking time from the workplace to leisure time.**

Leisure activities were, by their frequent reference, an important motivator although no connection was made between wealth accumulation and the ability to pursue leisure activities. Repeated reference was made to work imposing on leisure pursuits, even amongst the dedicated entrepreneurs. One interviewee (INV 12), mid-week, showed the author the light aircraft he was building and then immediately left, boat in tow, for the *bach*. Another described N.Z.ers as practising “*enoughism*”, that is, they were satisfied with their material wealth at a relatively low threshold. (INV5).

- **N.Z.ers focus on leisure pursuits at the expense of wealth accumulation represents a significant barrier to the optimisation of value from innovation.**

The widespread belief that N.Z.ers are poor at collaboration was upheld by the research although some curious paradoxes emerged, the most notable being reference to higher levels of co-operation within early stage industries, despite being full of highly individualistic people.

Tellingly, one interviewee who consults extensively in Scandinavian countries (INV1) did not observe any more inclination to collaborate in those countries but did report much greater understanding of the time needed to develop the social capital (especially trust) to underpin collaboration.

The low density of colleagues across the country and the division of N.Z.’s research capability into nine competing Crown Research Institutes (C.R.I.) and nine

universities resulted in “...*clumps and clutter. Clumps of businesses and a clutter of government agencies.*” (INV1)

What appeared to substitute for collaboration in N.Z. was a government driven effort to seek consensus (something that everyone can agree with), the effect of which was, “*mediocracy*” (INV4).

- **Several barriers to collaboration, especially short-term orientation exist that represent constraints on the efficient and effective implementation of innovation.**

4.3 Summary of the Findings

The findings were largely consistent with the literature and revealed a number of barriers to the implementation of innovations and the full realisation of value. Figure 4.1 summarises the findings and collates those into themes (coloured boxes) and categories (background “pools” of colour), along with examples of the notes appended during the analysis. This model reveals the interconnections that exist between the various behaviours and practices and highlighted the need to consider this discussion as part of a complex system.

The practice of satisficing or “enoughism” and the pursuit of leisure were raised repeatedly and consistent with the literature, were directly associated with a low wealth creation motivation and the undervaluing/failure to protect I.P..

The inventiveness was dominated by “make and use”, and often accompanied by “borrowing” I.P. to adapt into new devices and processes. Rarely were those recognised as having “make and sell” potential and there were a number of reasons offered for not properly protecting I.P.. Specialists and specialist knowledge were significantly under-valued and this had a number of important consequences.

Contrary to the reported low uncertainty avoidance there was evidence provided of, if not increasing uncertainty avoidance then certainly increasing risk aversion. Tight capital structures were identified as a major barrier to growth and were attributed to a combination of control centricity, the uncertainty avoidance and the personal

association between entrepreneur and investor. That same personal association with bureaucracy appeared to heighten the resentment of rules and regulations. Short-term orientation along with the control centricity was a barrier to collaboration.

Low assertiveness contributed to a reluctance to offer and receive feedback on performance and this appeared to impact learning curves and hence the speed and efficiency of implementation.

The findings support the hypothesis that there are behaviours that act as wedges or barriers to the implementation of innovation and appropriation of value. None of these can be considered in isolation but rather as elements of a complex system. Chapter 5 (Discussion) builds an association between the revealed behaviours and national culture to answer in the affirmative, the research question *“Does N.Z.’s national culture represent a barrier to creating and appropriating benefits from the national innovation effort?”*

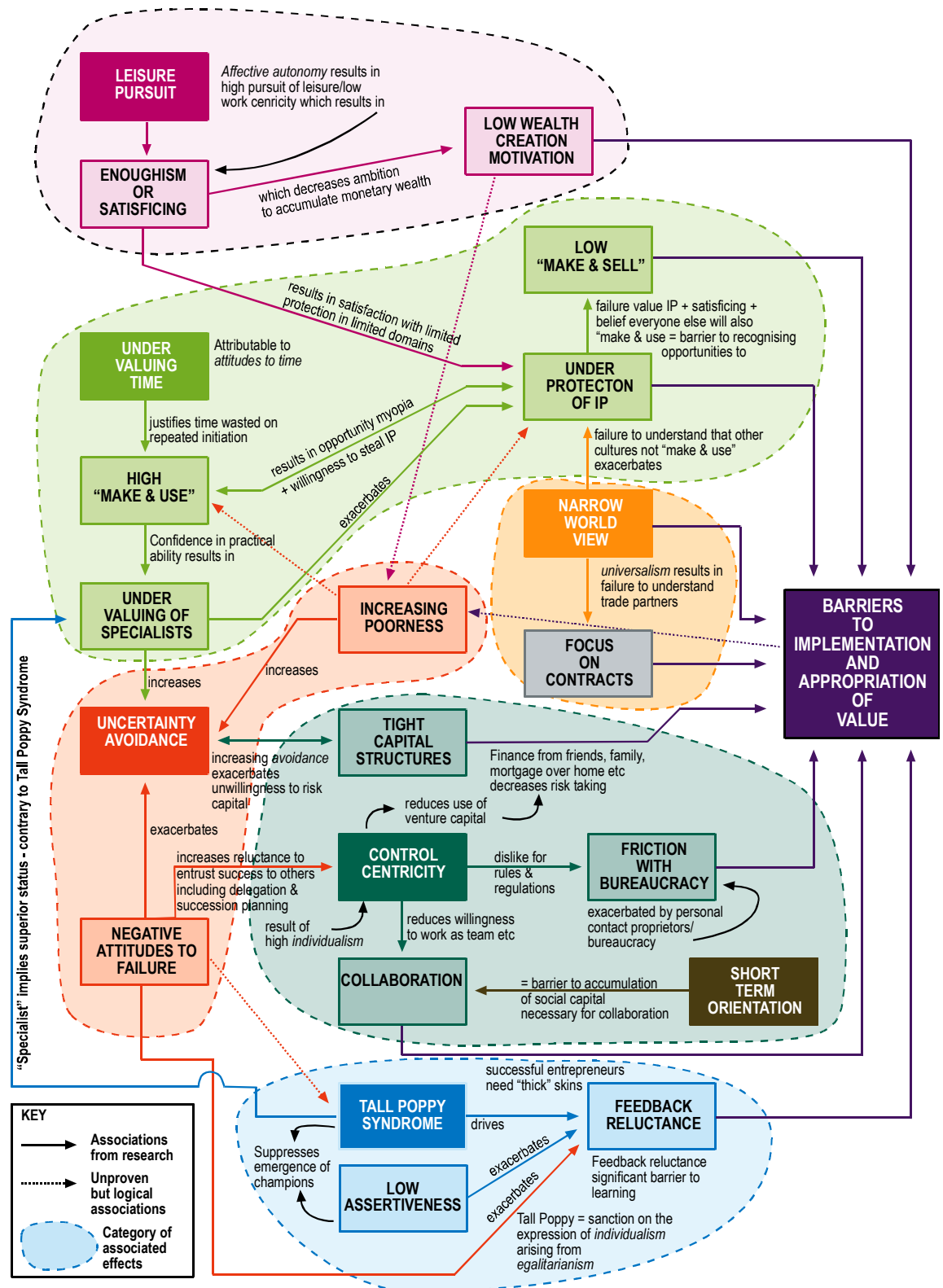


Figure 4.1: Representation of the principal themes and categories.

5. DISCUSSION

5.1 Introduction

The research findings reported in Chapter 4 establish that a number of behaviours represent barriers to the implementation stage of innovation in N.Z., the result of which is the under creation or appropriation of value from the national innovation effort. It has been hypothesised that those behaviours are rooted in N.Z.'s national culture and this chapter seeks to connect the reported dimensions described in the Literature Review and Appendix 2 with the Findings from the previous chapter to explain the impact of national culture on the innovation outcomes.

There was no evidence in the published indicators or this research that points to N.Z.'s poor innovation outcomes being related expressly to institutional or structural issues apart from an under-developed V.C. market. Efforts to improve the outcomes through structural and institutional avenues are therefore likely to offer only limited opportunity. Understanding the role of culture in the implementation of innovation should lead to better management of implementation and creation/appropriation of value outcomes as well as improved policy making.

5.2 Discussion

N.Z. has a strongly *specific* culture (Trompenaars & Hampden-Turner, 1998) reflected in the common N.Z. expression "*Never mix business and pleasure*". It is possible, in the N.Z. context at least, that quite separate cognitions and behaviours occur in the business and social environments and therefore the dimensions need to be considered to be context specific.

Charles Darwin wrote of natural selection in *The Origin of Species*:

"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change." (Gurteen, 2007)

N.Z.'s immigrant population is possibly the world's most recent example of self and engineered (albeit unintended) selection. Immigrants left behind a class system to pursue an egalitarian utopia while the life (and survival) revolving around seasonal

food production would likely have contributed to a relatively short-term focus. The immigrants were practical people and that would have been essential for survival. N.Z. immigration policies continued to focus on practical people (tradesmen) well into the 1960s. Prior to that, experiences during the First World War reinforced a national suspicion of schooled and upper-class people and subsequently encultured a suspicion of knowledge and an intense disregard for authority and rules.

The cultural dimensions interact in a complex system. Wherever possible such interconnections are identified (and most have been shown in Figure 4.1), but this and subsequent sections should be read on the basis that such complexity does exist and cannot always be articulated.

5.2.1 The Origins and Consequences of Control Centricity

The control centricity revealed by the research appeared to be rooted in the high level of *individualism* interacting with *uncertainty avoidance*. In one discussion it was suggested that this section should be named after the Frank Sinatra song “*I did it my way*”. The low collaboration, friction with bureaucracy, and tight capital structures, can all be traced to the high *individualism* or *autonomy* and a variant of *uncertainty avoidance*.

Collaboration, which is an important predictor of implementation, is by definition compatible with the opposite pole to *individualism*. In the N.Z. context this is exacerbated by several other factors. The *short-term orientation* moderates against investing the time necessary to build the social capital (trust) necessary for effective collaboration. Additionally, in what may be an influence of the traditional Māori value of *utu* or reciprocity (King, 2003), it appeared that much of what collaboration did exist was either the use of the collective to further individual (rather than collective) goals and/or a competitive intelligence gathering exercise.

The high *individualism* and *uncertainty avoidance* combine in a reluctance to place reliance for success in the hands of others. Consequently there is a reluctance to employ and delegate management responsibility to functional specialists, and even to engage in succession planning, placing a low ceiling on medium-term wealth creation.

The resentment of rules and bureaucracy is a likely manifestation of the *individualism/autonomy*. Bureaucracy was reported in the Findings as a significant barrier to the implementation stage. However, there was no evidence that N.Z. bureaucracy was any greater an imposition than in other countries. The small size of N.Z. businesses resulted in a very personal engagement between the managers and the bureaucracy, rather than through functional specialists that would be the case in larger firms, resulting in an exaggerated perception of bureaucratic intrusion. However, exaggerated/perceptual or real, the effect on motivation appeared real. While this is more a consequence of the size of N.Z. businesses, it seems likely that with lower *individualism*, the issue would be of less consequence. This perception of bureaucracy appears to represent a significant negative moderator on the motivation to move beyond the initiation/ideation stage of innovation.

The most important impact of the control centricity is the resultant tight capital structures predicated against use of venture capital. This in turn results in an increased uncertainty avoidance/risk aversion designed to protect friends, family, and the family home. This is an explanation for the dissonance between the reported low uncertainty avoidance and that revealed by the research. The effect nonetheless is to limit the rate at which the firm can implement innovations and create new market and shareholder value.

Paralleling this and exacerbated by the lack of confidence, is a self limiting reluctance to expose inventions to proper technical and business analysis necessary for engagement with the V.C.s. At the same time, the relatively risk averse V.C. companies view this reluctance as a measure of incompetence. This represents another clear wedge between the initiation and implementation stages.

- **Control centricity arising from *individualism/autonomy* combines with short-term orientation and low assertiveness to provide a succession of barriers to implementation and realisation of value.**

5.2.2 The Tall Poppy Syndrome and Feedback Reluctance

The findings revealed a profound and sometimes debilitating reluctance to offer and receive feedback. The obvious effect is a barrier to learning, an essential element of effective implementation and performance improvement.

The feedback reluctance is at least in part attributable to the lack of *assertiveness*. This appears to frustrate the reported high *performance orientation* by removing much of the feedback loop essential for performance improvement but is consistent with Javidan & House's (2001) reference to preference for "harmony".

The feedback reluctance is exacerbated by the negative attitudes to failure and negatively moderates the otherwise moderate uncertainty avoidance. Despite a willingness to experiment, the risk of failure and especially to "waste" money, leads to a self-limiting "make-do-ism" where sub-optimal designs are cobbled together from available resources. This is further exacerbated by the reluctance to use specialists that might otherwise reduce the need for trial and error and reveal alternative development options and applications for the innovations.

The *tall poppy syndrome* appears to be an *egalitarianism* derived sanction on the expression of *individualism*. It seeks to impose conformity or *conservatism* (Schwartz, 1999). As such it should positively moderate implementation. However it appears to have at least two negative consequences. Hull (2003:40) notes that the *tall poppy syndrome* is "... *not about New Zealanders believing that no one ought to show themselves as being successful but is a sensitivity to any claiming (or appearing to claim) superiority as a result.*" (Emphasis added)

First, it explains the reluctance to use specialist and specialist knowledge as to claim the title specialist is, intentionally or not, to claim superiority. This is exacerbated by N.Z.ers' tendency to accord respect on the basis of practical achievement. Specialists, whose expertise is often based on academic achievement, therefore tend to be accorded less respect than those with practical/physical/tangible achievements. This has multiple manifestations including the paucity of professional managers, a reluctance or inability to utilise specialist knowledge and specialists (which impacts the engagement with V.C. where specialist "endorsement" is increasingly sought, Gerritsen, 2008 Pers. Comm). This also represented a barrier to proper application of specialist manufacturing processes that are increasingly integral to rapid product development. This may represent a high-risk strategy to reduce uncertainty, by limiting the scope of information search, complexity and the need to consider alternative options and fuelled by a reluctance to stand out by demonstrating the capability to deal with complexity.

Second, the literature establishes the importance of champions for optimal implementation. Neither the N.Z. literature nor the research revealed any reference to championing. A number of explanations are possible including the lack of temporal resource, or risk avoidance (champions take personal risk). The most likely explanation however is the *tall poppy syndrome* predicating against individuals standing out in the manner required.

Trompenaars & Hampden-Turner (1998) report N.Z.ers as the fourth least likely to show emotion in the workplace. They point out the cross cultural difficulties when undemonstrative (understating) and demonstrative (exaggerating) cultures engage. This is likely to represent a barrier to engagement with American (and even Australian) markets including V.C.. It is probable that there is an association between the *tall poppy syndrome* and the reported lack of demonstrativeness. To be demonstrative would be to stand out.

There appears to be a dissonance between the undemonstrativeness and Schwartz's (1999) reported high *affective autonomy* and this may represent an extreme example of *specificity* separating work from leisure. That is, fun is to be had outside of the workplace, exacerbating the non-work centricity reported by Schwartz (1999). The efforts over recent years to drive cost out of the workplace have almost certainly reduced the opportunity to have fun and build social capital within the workplace, contributing negatively to implementation outcomes.

- **The *tall poppy syndrome* which is principally derived from *individualism* and *egalitarianism* creates a barrier to innovation implementation through discouraging the adoption of specialists, the emergence of champions and feedback/learning.**

5.2.3 Narrow World View and Focus on Contracts

A narrow, black and white world view, attributable to the *universalist* and *specific* dimensions results in a belief that all people “think like us”, share similar values, desire similar products, have similar aspirations and ethics and should do business in the same way. N.Z.ers demonstrate a desire to “cut to the chase”, “get down to business”, get the contract signing out of the way approach. There seems little doubt

that this represents a failure to realise that many other cultures are offended by this approach. It is however exacerbated by the lack of assertiveness causing a certain discomfort with this stage of proceedings along with the *affective autonomy* wanting to get the formal engagement out of the way so the socialising can begin!

The *universalistic* resort to contracts is in conflict with the *individualistic* abhorrence of rules and it is probable that it is the “*what is good and right can be defined and always applies*” (Trompenaars & Hampden-Turner, 1998:8) part of *universalism* rather than the preference for rules that is manifested. Irrespective, there does appear to be a growing resort to rules in the private sector and especially in the public sector. This is likely to be a *universalistic* based approach to reducing ambiguity and uncertainty, a further example of engaging in risky behaviour to reduce uncertainty (Hofstede, 2001).

- **A universalist derived narrow world view is a barrier to deep and meaningful engagement with markets thereby diminishing the realisation of optimum value.**

5.2.4 Value and Intellectual Property

The research revealed issues around valuing specialists, time, and especially I.P.. The issue surrounding specialists has been discussed in section 5.2.2. This section will explore the recognition and valuing of I.P., section 5.2.5 will discuss the valuation of time, and section 5.2.6 the impact of satisficing on the protection of I.P..

While there was a general belief in the inventiveness of N.Z.ers, the distinguishing feature appeared to be the “*do-it-yourself*” ability to turn ideas into “*make-and-use*” (as opposed to “*make-and-sell*” = implementation) products and processes using make-do resources. In a pioneering world that was a nation defining characteristic. In a world of increasing complexity and sophistication the “do-it-yourself” “make-and-use” practicality is increasingly a liability as it becomes a compromise “*make-doism*”.

While there is abundant ability to spot I.P. and pull that in to adapt and adopt on a "make and use" basis, the ability to then push that out into a "make and sell" commercial context is veiled by a number of factors.

First, the frequency and incremental nature of the inventiveness appears to render it so common place that it has become difficult to recognise its “specialness”.

Second, the *universalist*, “everyone is like us” belief results in an assumption that everyone else will also resort to a “make and use” adaptation of what ever is available. There seems to be an endemic inability to recognise that the problem solved by the “make and use” adaptation may be a problem shared, in various guises, by a great deal of other people or firms.

Third, the manner in which respect is accorded around practical achievement appears to have some affect on the way in which intangible I.P. protection is viewed. It represents a significant cost for something that is perceived as having no practical application or tangibility.

Finally, there is a considerable mythology surrounding I.P. protection including that the cost is excessive, and around the ability to defend it in the face of illegal appropriation by large offshore corporates, especially those in Asia. In an ironic reflection of the *universalist*, “everyone is like us” dimension, this may be a reflection of N.Z.ers own habit of “borrowing” I.P..

- **N.Z.ers “make and use” practicality, the common practice of “borrowing” others I.P. combined with the *universalist* “everyone is like us” culture creates an opportunity myopia regarding the significance and value of properly protected I.P.**

5.2.5 Short-term Outlook and Time Value

It is widely assumed that N.Z.’s *egalitarianism* and apparent high level of connectivity (it is a common joke that there are only two degrees of separation in N.Z.) will result in high social capital. However what passes for connectivity is more shallow acquaintance, similar to Trompenaars & Hampden-Turner’s (1998:85) example of being introduced as “*My very good friend Charles[what’s your surname?]*”. There is a high degree of “clumping” into small groups with relatively high bonding capital but very low bridging capital (especially when measured by trust). N.Z.’s R.S.&T. is a good example. The bridging capital is directly linked to the ability to discover alternative applications for inventions, the push component referred

to earlier. This is attributable to a number of factors the most important in the context of this work being the “short-termism” that predicates against taking the time necessary to build the trust upon which collaboration rests. A common and revealing Kiwi expression is “*Stop mucking around. Just get on with it!*”.

N.Z.er's accord only nominal financial value to time and that justifies the “do-it-yourself”, “make and use” approach, particularly as opportunity cost of labour used in this way is rarely considered.

- **N.Z.'s short-termism is a barrier to the accumulations of social capital necessary for effective collaboration while the “time has no value” attitude justifies the “make and use” approach.**

5.2.6 Wealth Creation Motive and Satisficing

The pursuit of leisure and the low work centrality attributable to the high *affective autonomy* resulted in a low focus on wealth creation. The effect of this is satisficing or “enoughism” that reduces the motivation to maximise the returns from work effort including innovation and its associated recognition and protection of I.P.

Much of the literature on innovation is based on the false, usually American assumption that “... *people's capacities should be maximally utilized.*” Hofstede (1994:5). In practice, some degree of satisficing is probably the norm, including in the U.S.A.. N.Z. however appears to be at an extreme pole.

According to Maslow's *hierarchy of needs*, motivation ascends a pyramid of successive goals towards self-actualisation. It is probable that N.Z.ers predominately seek self actualisation outside of work (i.e. leisure). Work then is no more than a means of obtaining enough resource to pursue the self-actualising activities. There is an apparent association between Maslow's self actualisation (recreation, arts/culture, creativity, oneness with the natural world etc) and N.Z.'s comparatively high *intellectual autonomy* (individual pursuit of inquisitiveness, broadmindedness, creativity), and high *affective autonomy* (pleasure, exciting life, varied life) (Schwartz, 1999) and low work centrality. Given that initiation tasks are more compatible with the cultural values it is probable that self-actualisation is more readily achieved through initiative rather than implementative activities. Therefore, given the ease of

access to and low cost of leisure pursuits in N.Z., the pursuit if not realisation of self-actualisation faces relatively low barriers and therefore represents a desirable competing alternative in terms of Figure 2.17.

While freedom and leisure dominate as reasons for going into business, the dismissal of wealth as a motivator may be simplistic. It is more probable that the threshold of “enough” is reached at a relatively low level and motivation then switches to leisure pursuits. Again it is possible to postulate a link with Maslow’s needs hierarchy. The tier below self-actualisation is esteem and included in that is “respect of others”. In *ascriptive* societies, wealth (by many measures) will lead to the ascription of respect. In highly practical *achievement* oriented N.Z., accumulation of wealth does not lead to respect (in fact is in conflict with the *egalitarianism*) and therefore is not a source of motivation.

There appears to be a further association between satisficing and short-termism, the latter negatively moderating the pursuit of longer term goals that may be associated with implementation in favour of shorter term goals more likely to be associated with initiation. The absence of a long-term wealth creation ambition means that behaviours such as limiting patent protection to N.Z. and Australia are justified by the *enoughism*.

- **The pursuit of leisure associated with high *affective autonomy* results in *enoughism* or *satisficing* that in turn results in a low wealth creation motivation with various subsequent impacts on the implementation of innovation.**

5.3 Discussion Summary

There was an unanticipated degree of conditionality in the manner in which the various dimensions moderate innovation and several appear to be context specific. In a conclusion not previously reported, this work suggests that the dimensions may, as a result of the high *specificity*, consistent with House, et al’s (2001) separation of collectivism into two components, moderate cognition and behaviour in a context specific manner, specifically different in work and leisure environments.

The work concludes that initiation can be viewed as being the predominantly cognitive and private experimentation phase where psychological exposure is minimal or highly manageable and the implementation phase that which begins where the ideas must be revealed and subjected to the scrutiny and analysis of others. This division is compatible with both the solo inventor and team/corporate processes. (Figure 2.12 and Rank, et al, 2004)

N.Z. is highly inventive although whether more so than comparator nations is not clear. It is however the ability to turn ideas into “do-it-yourself” practical reality using minimal resources that is the distinguishing characteristic and this ability has clouded many of the perceptions and studies of inventiveness. The common practice of “borrowing” I.P. contributes to a belief that I.P. will in turn be stolen whether protected or not. However it is the predominance of “make and use” innovation, often for the purpose of driving down cost that appears to result in an I.P. and opportunity myopia.

Foremost amongst the factors impacting the innovative effort is satisficing or “enoughism”, largely a product of *affective autonomy*. Satisficing is determined to be the principal reason for not securing I.P. and maximising the appropriation of value. The motivation to either initiate or implement is determined by the best fit between the cognition and behaviour required for the particular stage, and the national culture. A connection is made between *affective autonomy* and Maslow’s *Hierarchy of Needs* theory. It is postulated that the motivation to either initiate or implement is in competition with other activities, in N.Z.’s case, self actualisation through leisure pursuits.

Individualism moderated control centricity and *uncertainty avoidance* results in tight capital structures, often at the exclusion of V.C. while it is the *short term orientation*, not *individualism* per se that prevents the accumulation of the social capital (trust) necessary for effective collaboration.

The low *assertiveness* and demonstrativeness in the workplace has a variety of impacts, possibly the most significant being the problems represented by cross cultural engagements with nations like the U.S.A. that are more demonstrative and enthusiastic.

The *tall poppy syndrome* is a manifestation of a tension between the expression of *individualism* and *egalitarianism*. It acts as a barrier to feedback and learning, makes provision of rewards difficult, acts negatively against the emergence of champions and the use of specialists/specialist knowledge and researchers/research, much of which occurs “in-house” and is thus self-limiting.

N.Z.'s *universalism* represents a significant barrier to properly engaging with and understanding markets and their requirements and possibly contributes to the predominance of problem solving “make and use” innovation rather than purposive response to market needs and “make and sell”. The barrier to full engagement is exacerbated by the faith in contractual relationships rather than those based around trust and understanding. Status is highly practical achievement oriented. The consequence of that, combined with the *tall poppy syndrome* is a disregard for specialists and specialist knowledge.

Bureaucracy, whether or not more intrusive in N.Z., conflicts with the *individualism* and the managers personal contact with the rules and regulations results in the perception if not reality of excessive bureaucracy. The effect is to significantly negatively impact innovation at the implementation stage when the rules and regulations first become salient.

These findings lead to the conclusion that N.Z.'s national culture does negatively impact creation and appropriation of value from the implementation processes. The subsequent Chapter 6 draws this work to a conclusion and suggests a variety of opportunities to improve the returns on N.Z.'s innovation effort.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Research objective

Chapter 3 established the research question “Does N.Z.’s national culture represent a barrier to creating and appropriating benefits from the national innovation effort?”

The findings presented in Chapter 4 reveal a number of behaviours and practices that negatively impact the implementation stage of innovation and hence the creation and appropriation of value. Chapter 5 explores the cultural roots of those behaviours. It is able to be concluded therefore that a number of behaviours attributable to N.Z.’s national culture represent barriers to creating and appropriating benefit from the national innovation effort.

6.2 Summary of the Research Conclusions

While it is difficult to assign a hierarchy of importance to the barriers reported, satisficing and the control centrality appear to dominate. The former is principally a product of *affective autonomy* and attendant conflict with work centrality, combined with a variant of *specificity* that appears to result in different behaviours in work and leisure contexts, with a possible link to Maslow’s motivation theory. It is responsible for a low wealth creation motive. The control centrality that appears to be largely a product of the *individualism* is, inter-reacting with the increasing *uncertainty avoidance*, responsible for tight capital structures that in turn exacerbate increasing risk avoidance that is itself attributable to increasing poorness. Together those factors limit growth opportunities. The same *individualism* along with the small size of N.Z. business results in a perception if not reality of a bureaucratic barrier that demotivates at the point of transition from initiation to implementation. Further, the *individualism* combines with the *short-term orientation* preventing the accumulation of the social capital (trust) necessary for effective collaboration.

The *Tall Poppy Syndrome* appears to be an egalitarianism moderated sanction on the expression of *individualism*. It exacerbates or possibly is the cause of the low *assertiveness*. It reduces the opportunity for the emergence of champions and is possibly the root of the lack of demonstrativeness that can be expected to cause problems in some cross-cultural engagements. The *tall poppy syndrome* is also one of

the main reasons for the undervaluing and reluctance to use specialists and specialist knowledge. That in turn is one of the contributing causes of failure to recognise and value I.P. and to commercialise what are predominantly “make and use” developments. The latter is attributed to the “everyone is like us” *universalism*. That same *universalism* is responsible for an overly direct approach to business where contracts come first to be followed by celebratory socialising.

6.3 Implications for Management

Understanding that the barriers identified in this work exist should allow management to develop strategies to mitigate the negative impacts. More importantly, Government policy should be refocused to support and possibly lead the adoption of such strategies. At the same time, Government efforts to improve N.Z.’s innovation performance need to be extended from the existing focus on resources to incorporate the behavioural elements of innovation.

Culture change is generally inter-generational and it is unrealistic to expect that any significant change can be achieved in a time frame short enough to address N.Z.’s increasingly urgent need to improve its innovation outcomes. However a nation is not a slave to its culture and has the capacity, according to Schwartz (1999) to voluntarily act contrary to the culture. N.Z.ers, it is worthy of note, excel at collaboration during times of emergency such as natural disaster, war, and sport where the constraints of the *individualism* and *tall poppy syndrome* appear to be suspended.

In addressing these issues it is important to understand that N.Z. does not have a bad or negative culture. Its culture is responsible for a high level of creativity/inventiveness and problem solving and that represents as much potential opportunity as the other factors represent a barrier to implementation.

From a policy perspective four issues are of critical importance. First is to recognise that N.Z. is inventive but not innovative. Second, it must be recognised that satisficing is common, or more importantly, maximising is rare. Those policies that assume maximising are therefore flawed. Third, the need to accumulate social capital over an extended period of time (five to ten years) to facilitate collaboration must be recognised. Finally, familiarity with, as a very minimum, work such as Trompenaars

& Hampden-Turners (1998) *Riding the Waves of Culture* should be mandatory for policy makers and advisors in the economic development domain.

From a business management and academic perspective, no model of N.Z. management has to date been developed. This work suggests that N.Z. has a unique cultural mix and to the extent that culture influences management and reaction to management, such a model must accommodate the peculiarities of the N.Z. culture. Ultimately such a model should leverage value from N.Z.'s creativity and problem solving capability and accept the weaknesses in implementation. N.Z. firms could therefore develop and promote what the author has referred to as a "micro-multi-national" model. In this model N.Z.'s inventiveness would be exploited but manufacturing and market development would occur through joint ventures, licensing arrangements and the like directly in the export market.

At the individual business management level, a number of actions may prove valuable. First is to understand the role of culture as established in this dissertation. Second is to understand the importance of leisure activity to N.Z.ers and seek to build social capital through social events, conferences, competitions, etc. Third, any business that is involved with overseas customers and partners should understand very clearly that not all people think like and have expectation of business being done the way N.Z.ers do it. Fourth, ways to encourage the emergence of champions should be found. Finally and perhaps offering the most direct route to increasing the creation of value and appropriation of benefits, all sector groups should establish a programme of assessing their intellectual assets and designing pathways to identify, protect and commercialise the currently latent "hidden" I.P, thus mitigating the barriers to creating and appropriating value through a strategic approach.

6.4 Limitations of the Research

The principal limitation of the research is the lack of generalisability. Further, the research has only been able to begin to explore the barriers to implementation of innovation across N.Z. and even more narrowly across the dominant Kiwi culture. Individual sectors, the R.S.& T. community and large business may have different barriers, still determined by culture, but because of self selection of careers etc, may

be comprised of people who aggregate at different parts of the normal distribution of the dimensions.

6.5 Further Research

Several additional lines of research are proposed. First would be to repeat this work from a traditional Māori cultural value perspective. If as appears to be the case, some at least of those values, such as *individualism/collectivism* and *long-term orientation* occur towards the opposite poles to the dominant Kiwi culture, opportunities may exist to build business models based on those values that would positively moderate implementation.

Second, differences between sectors, small, medium and large businesses, along with universities and the C.R.I.s (that have a particular issue commercialising their I.P.) should be explored from a cultural dimensions perspective.

Thirdly, an effort to quantify the impact of the various dimensions would help determine where emphasis on developing mitigating strategies should be focused.

Finally, attention should be given to developing a theoretical and empirically based N.Z. business model that recognises the nation's cultural peculiarities.

6.6 Endnote

N.Z. faces an urgent need to improve its economic performance. Focus on institutional and structural issues have borne little fruit. This dissertation provides an alternative approach that offers potential to discover the roots of the poor performance and develop and introduce mitigation strategies.

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Appendix 1: New Zealand's Innovation Input Indicators according to Ministry of Economic Development

Indicator	Ranking
Investment in R.& D.	LOW: B.E.R.D. similar to Portugal, Hungary & Spain at low end of O.E.C.D. scoreboard (OECD. STI Scoreboard 2003). <0.5% G.D.P. [but affect of not having R.& D. tax breaks on reporting is unknown].
Levels of patenting (triadic)	LOW: 21 st of 30 [An argument could be mounted that the propensity to patent may vary from country to country]
Technology adoption	Quantitatively similar to E.U., but qualitatively inferior
Exports of high and medium high technology manufactures	LOW: 19 th of 19 compared on O.E.C.D. STI Scoreboard 2003
Publications & citations	MEDIUM: 9 th of 19
Innovation linkages	HIGH: 2 nd of 25 in 2001 (O.E.C.D. Main Science & Technology Indicators Volume 2003/2)
Innovation in I.C.T .	LOW: (May be worse than results indicate. Broadband in N.Z. is only 2 Mb/sec except Wellington City (100Mb/Sec). Evidence in several O.E.C.D. countries that associates investment in I.C.T. and increased productivity.)

Ref: (MED, 2007)

Appendix 2: Authors' descriptions of the dimensions

Hofstede (2001:29)	
Power Distance	<i>"...the different solutions to the basic problem of human inequality."</i>
Uncertainty Avoidance	<i>"... the level of stress in a society in the face of an unknown future."</i>
Individualism vs Collectivism	<i>"... the integration of individuals into primary groups."</i>
Masculinity vs Femininity	<i>"...the division of emotional roles between male and female."</i>
Long-term vs Short-term orientation	<i>"...the choice of focus for people's efforts: the future or the present."</i>
GLOBE (House, Javidan & Dorfman 2001:495)	
Uncertainty avoidance	<i>"...the extent to which members of a society strive to avoid uncertainty by reliance on social norms, rituals, and bureaucratic practices to alleviate the unpredictability of future events."</i>
Power distance	<i>"... the degree to which members of an organisation or society expect and agree that power should be shared unequally."</i>
Collectivism I: Societal Collectivism	<i>"...the degree to which organisational and societal institutional practices encourage and reward collective distribution of resources and collective action."</i>
Collectivism II: In-Group Collectivism	<i>"...the degree to which individuals express pride, loyalty, and cohesiveness in their organisations or families."</i>
Gender Egalitarianism	<i>"...the extent to which an organisation or society minimises gender role differences and gender discrimination."</i>
Assertiveness	<i>"...the degree to which individuals in organisations or societies are assertive, confrontational, and aggressive in social relations."</i>
Future Orientation	<i>"...the degree to which individuals in organisations or societies engage in future-oriented behaviours such as planning, investing in the future, and delaying gratification."</i>
Performance Orientation	<i>"...the extent to which an organisation or society encourages and rewards group members for performance improvement and excellence. This dimension includes the future oriented component of the dimension called Confucian Dynamism by Hofstede and Bond (1988)."</i>
Trompenaars & Hampden-Turner (1998:8-10)	
Universalism vs Particularism	<i>"The universalist approach is roughly: 'What is good and right can be defined and always applies.' In particularist cultures far greater attention is given to the obligations of relationships and unique circumstances."</i>
Individualism vs Communitarianism	<i>"Do people regard themselves primarily as individuals or as part of a group?"</i>
Neutral vs Emotional	<i>"Should the nature of our interactions be objective and detached, or is expressing emotion acceptable?"</i>
Specific vs Diffuse	<i>"When the whole person is involved in a business relationship there is a real and personal contact, instead of the specific relationship prescribed by a contract."</i>

Achievement vs Ascription	<i>"Achievement means you are judged on what you have recently accomplished and on your record. Ascription means that status is attributed to you by birth, kinship, gender or age, but also by your connections ... and your educational record..."</i>
Attitudes to time	<i>"In some societies what somebody has achieved in the past is not important. It is more important to know what plan they have developed for the future. In other societies you can make more of an impression with your past accomplishments than those of today."</i>
Attitudes to environment	<i>"Some cultures see the major focus affecting their lives and the origins of vice and virtue and residing within the person. Here, motivations and values are derived from within. Other cultures see the world as more powerful than individuals. They see nature as something to be feared or emulated."</i>
Schwartz (1999:27-28)	
Conservatism	<i>"A cultural emphasis on maintenance of the status quo, propriety, and restraint of actions or inclinations that might disrupt the solidary [sic] group or traditional order (social order, respect for tradition, family security, wisdom)."</i>
Intellectual & Affective Autonomy	Intellectual autonomy: <i>"A cultural emphasis on the desirability of individuals pursuing their own ideas and intellectual directions (curiosity, broadmindedness, creativity)."</i> Affective autonomy: <i>"A cultural emphasis on the desirability of individuals independently pursuing affectively positive experience (pleasure, exciting life, varied life)."</i>
Hierarchy & Egalitarianism	Hierarchy: <i>"A cultural emphasis on the legitimacy of an unequal distribution of power, roles and resources (social power, authority, humility, wealth)."</i> Egalitarianism: <i>"A cultural emphasis on transcendence of selfish interests in favour of voluntary commitment to promoting the welfare of others (equality, social justice, freedom, responsibility, honesty)."</i>
Mastery & Harmony	Mastery: <i>"A cultural emphasis on getting ahead through active self-assertion (ambition, success, daring, competence)".</i> Harmony: <i>"A cultural emphasis on fitting harmoniously into the environment (unity with nature, protecting the environment, world of beauty)".</i>
Rank, Pace & Frese (2004:520)	
Action orientation	<i>"...individual differences in the efficient translation of intentions into goal-directed behaviour."</i> (Strictly a motivational variable rather than a defined dimension)

Appendix 3: Schedule of the Interviewees

Code	Country of birth	Public/Private Sector	Background
INV1	UK	Private	International economic development consultant.
INV2	UK	Public	Science policy advisor.
INV3	UK	Public	Senior economic policy advisor.
INV4	NZ	Private	V.C. and intellectual property consultant. Former patent attorney. Serial entrepreneur.
INV5	NZ	Private	Serial entrepreneur. Former Reserve Bank Director. Internationally recognised environmentalist.
INV6	UK	Private	Serial entrepreneur. Public/private company director.
INV7	NZ	Private	Partner patent attorney firm.
INV8	NZ	Public	Labour policy advisor.
INV9	NZ	Private	Research scientist/consultant. Former C.R.I. scientist/manager.
INV10	UK	Public	Public science investment manager.
INV11	NZ	Public/Private	Economic Development Agency manager. Former public company C.E.O..
INV12	NZ	Private	International development consultant. Former banker
INV13	NZ	Public	Innovation policy advisor.
INV14	NZ	Public	Innovation policy advisor.
INV15	NZ	Private	Serial entrepreneur. Retired sector organisation manager.
INV16	NZ	Private	Serial entrepreneur interests NZ and Overseas. Accountant. Broadway producer.
INV17	NZ	Public	Economic Development organisation C.E.O.. Former Chief Economist international bank.
INV18	NZ	Public	V.C. programme advisor.
INV19	NZ	Private	Accountant and company manager NZ and overseas.
INV20	NZ	Private	Innovation consultant and Ministerial advisor.
INV21	NZ	Private	Serial entrepreneur. Industry sector founder. Former accountant and C.E.O..
INV22	NZ	Private	Aviation consultant and former public company C.E.O.. Qualified professional engineer. Former military attaché.
INV23	NZ	Private	Entrepreneur. C.E.O. family company.

Appendix 4: Personal Values Profile

The author is male, born in New Zealand in 1955 and raised with a strong Calvinist /Protestant outlook. His outlook has been profoundly impacted by the arrival of the first grandchild. He has a background in science, science management, economic development, consulting and entrepreneurship. He is economically conservative and socially liberal with a strong inclination towards corporate social responsibility. He is well travelled and considers himself a “student of life”. A self assignment to dimensions reveals the following:

Individualism	High
P.D.	Low/medium
U.A.	Medium. (Medium High fear of failure)
Masculinity	Low
Long term orientation	Medium (Long by N.Z. standards)
Affective autonomy	Medium/High
Intellectual autonomy	Medium/High
Performance orientation	High
Action Orientation	Medium
Assertiveness	Low

Appendix 5: Interview Guide

[illegible]

Appendix 6: The Data Analysis Process

Open codes or labels, in the order that they emerged from analysis of the interview data:

▪ Collaboration	▪ Need to control
▪ Thick-skinned	▪ Entrepreneurs
▪ Passion	▪ Tall Poppy
▪ Decision Making	▪ Entrepreneurship
▪ Innovation	▪ Ideas
▪ Creativity	▪ Bureaucracy
▪ Intellectual Property	▪ Value of I.P. & Creativity
▪ "Short-termism"	▪ Time Value
▪ Leisure/recreation	▪ Wealth focus
▪ Relationships	▪ Specialists
▪ Assertiveness	▪ Egalitarianism
▪ Capital Structures	▪ Specialist Knowledge
▪ Barriers to Learning	▪ Risk taking
▪ Attitudes to Failure	▪ Contempt for Rules
▪ Delegation	▪ Social Capital
▪ Flexibility	▪ Rules & Contracts
▪ Connection to Markets	

Appendix 7: Personal Development

I began my working life as a medical laboratory scientist and quickly rose to the rank of Laboratory Manager for a district hospital board. I was thus thrust from a science background into a management role. That led to my first study in management, a post-graduate Diploma in Health Administration. To my considerable surprise I was fascinated by an organisational psychology paper and a subsequent consumer decision-making paper. My appetite for management studies was whetted and until commencing this MBA in 2004 I had in an almost unbroken stream undertaken various academic and non-academic studies in a variety of management disciplines.

Despite enjoying some level of success during my various careers, and often being complimented (I think they were compliments – the *Tall Poppy Syndrome* makes it difficult to be sure in N.Z.) on my ability to intellectualise complex subjects, I suffered a deep seated lack of confidence. I had doubts as to whether I truly achieved understanding of the subjects or rather substituted understanding with a prodigious memory. The MBA dissertation then became a personal test of my ability to develop a deep understanding of a complex and somewhat esoteric topic. Pasteur's "*Chance favours the prepared mind.*" is one of my favourite quotations and it did appear to apply personally as I watched the evidence that national culture was the topic I should study mount around me. In 1991 I had read Crocombe, Enright and Porter's "Upgrading New Zealand's Competitive Advantage" and the criticism that N.Z.ers satisfied and only worked enough during the week to recreate at the weekends had remained firmly fixed in my mind. Then Professor Howard Frederick inexplicably sent me an introduction to his new publication "Entrepreneurship – Theory, Process, Practice". Something caught my attention and I purchased a copy only a few days after publication. Flicking through it, two sentences in the opening chapter caught my eye and galvanised my thinking. They were "*New Zealand has for years had the highest rate of early-stage entrepreneurship in the so-called 'developed world.'*" (pp 5) and "*Unfortunately, a lot of the entrepreneurial activity is low ambition.*" (pp 6). Not believing in too many coincidences there seemed to be a message here – I "needed" to discover and understand the answer to this perplexing paradox as the answer could hold the key to N.Z.'s poor economic performance. The same Frederick text introduced me to the work of Lee & Peterson and national cultural dimensions and the die was cast. I became fascinated and compelled to embark on the journey of

learning. At that stage the journey was still only one of general interest. Then I came upon Nakata and Sivakumar's literature review on the correlation between culture and the initiation and implementation of innovation. The rest of the journey is represented in this dissertation.

Have the learning/personal development objectives been met? The answer is "yes" – and "no". Yes that I have discovered some answers to the questions posed. Yes that I have proved my capability and capacity to overcome a substantial intellectual challenge. No in that it is now obvious that there is so much more to be discovered. But the most valuable outcome of all has been the self-reflection on how national culture influences my own cognition and behaviour and as a consequence to be able to manage and modify both.

Tony Smale

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Glossary of terms and abbreviations:

Appropriation (of value)	The capture of value from an activity
B.E.R.D.	Business Expenditure on R.& D.
C.R.I.	Crown Research Institute. N.Z. Government owned scientific research establishment
Dimensions (cultural).....	Cultural values
D.O.L.	Department of Labour (N.Z.)
Economic Development:	The author adopts this definition of Economic Development from the Economic Developer Association of Alberta: "The process of developing and maintaining suitable economic, social and political environments, in which balanced growth may be realized, increasing the wealth of the community."
E.U.	European Union
I.C.T.	Internet Communication Technology
Implementation	Application of the new ideas
Initiation	Creativity or ideation stage of innovation process
Innovation Process	Initiation + Implementation
I.P.	Intellectual Property
Mana.....	N.Z. (Māori) term for respect and credibility
M.E.....	Micro-enterprise. Business with 5 or less staff
M.E.D.....	Ministry of Economic Development (N.Z.)
N.I.S.	National Innovation System
N.Z.	New Zealand
O.E.C.D.....	Organisation of Economic Co-operation and Development
P.D.(I).....	Power Distance (Index)
R.& D.	Research and Development
R.S.& T.	Research, Science and Technology
Satisficing.....	<i>"In economics, satisficing is a behavior which attempts to achieve at least some minimum level of a particular variable, but which does not necessarily maximize its value. The most common application of the concept in</i>

economics is in the behavioral theory of the firm, which, unlike traditional accounts, postulates that producers treat profit not as a goal to be maximised, but as a constraint. Under these theories, a critical level of profit must be achieved by firms, thereafter priority is attached to the attainment of other goals.” (Wikipedia, 2007)

Tall Poppy Syndrome:Term to describe a practice of cropping down to size people that stand out from the crowd

U.A. Uncertainty Avoidance