

'Think different!': design experts

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THE common wisdom may be that "Great minds think alike," but common wisdom does not apply to leading designers. The top designers and the ICIF International Design Summit Forum celebrated originality.

"Different is better than perfect," said George Teodorescu from Germany, president of the International Integral Design Society, speaking to a near capacity crowd in a majestic auditorium of the Shenzhen Convention & Exhibition Center.

"Think different!" said another two speakers, Peter Zec, CEO of the executive council of the world-renowned Red Dot Award and Leong Yap of Auckland University of Technology in New Zealand.

"Your design must be different," said Lin Chonghong, a design professor from Taiwan, while Lester Meachem, a design professor from Britain, urged: "Think outside the box, interpret the world in a different way."

Twelve leading Chinese and international designers and educators spoke at the forum, hailed by Shenzhen's Vice Mayor Yan Xiaopei as "a marvelous, creative idea."

Being different, trying to come up with new ideas, and bringing ideas into reality is rewarding, said Zec. Not just spiritually rewarding, "Innovation in design can generate high returns on investment," he said.

Yap agreed: "The 25 most innovative companies in the world are all design-led businesses." Yap said: "Design is about new story, new expression, new meaning, new pleasures and new dreams. Design is a key enabler for wealth creation."

Experts discussed ways to integrate cultural elements into design projects, how to nurture more design professionals with imagination and creativity, and how to educate the public on design. "Designers have the obligation to offer guidance to consumers and get them to understand, appreciate and consume design works," said Zhang Xiaogang, head of the art and design school of Shenzhen Polytechnic. "It is crucial to maintain the enthusiasm and desire for designers to create more innovative and creative works."

Designers were also concerned about environmental protection and design, new technologies and design, and fashion design. In the marathon seven-hour forum, every speaker was allotted only 30 minutes. After two rounds of projection problems with his slides, Komachiya Asao, an art professor from Japan, shook his head and apologized: "I was afraid the bell would ring at any moment," setting off laughter from the audience.

Vice Mayor Yan made the point at the forum that in 2003 Shenzhen set the target of building the city into a "design capital." The city is now home to more than 20,000 professionals in the design industry, which has grown into an important part of the city's economy. Of the four designers from the Chinese mainland who are members of the Action Graphic International (AGI), two are from Shenzhen, the vice mayor said.

"This is a spiritual feast," said a student from Shenzhen Polytechnic, the forum sponsor. The forum is the first of its kind at the ICIF, organizers said.

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Designing a Design-Savvy Nation

**International Design Leader Summit Meeting
Shenzhen
China
20 May 2006**

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Designing a Design-Savvy Nation

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Abstract

Design is increasingly becoming a key business activity that interacts with science, technology and culture to enable innovation to take place. The notion that design is a key enabler for wealth creation, global competitiveness and economic growth is gaining momentum. Governments, corporations, businesses and universities around the world are now exploiting creativity and innovation to sustain global competitiveness. The importance of design lies not only in the design of individual products, services or systems, but rather in the whole process of design strategic thinking in which design is seen as a significant business and economic imperative for innovation. Design thinking and the ideation, design and development of emotional delights, experience and dreams are the new forces for increasing the value of goods and services of a nation. Innovation is becoming the greatest asset. In the new economy, a creative workforce will enable a nation to positively integrate its products and services into global value chains –forging new competencies, developing niches, and establishing a high profile, national identity, brands, jobs and wealth, and partnership or cluster participations in creative activities between education, industry and government sectors. National design policies are important strategic plans for directing and improving a country's design and innovation competitiveness. They help to drive economic competitiveness, develop innovative businesses that generate significant employment, high-value-added goods and services, and sustained technological progress. This presentation will discuss these forces in detail, and highlights the bold New Zealand national design policy designed to transform an agriculture economy into a design-savvy nation.

1 Introduction

Perhaps it is now well understood by academics, industries and government sectors that design is a key creative and strategic activity that interacts with science, technology and business to enable innovation to take place. Design is increasingly being considered as the key driver for wealth creation and economic growth in the new economy. While the aim of this paper is to discuss the New Zealand Government's design policy initiatives to transform New Zealand into a more design-savvy nation, I want to initially foreground a series of global contexts within which some of these initiatives have been informed. The notion that design is a key enabler for wealth creation, global competitiveness and economic growth is a relatively new phenomenon. Governments, corporations, businesses and universities around the world are now exploiting creativity and innovation to sustain global competitiveness. The importance of design functions lie not only in the individual products, services or systems, but rather in the whole process of design thinking in which design is seen as a business imperative. Building a national design advantage involves bringing on board a mutually shared vision among government

sectors, industry and education. Unless businesses are well informed, nurtured and committed to becoming design savvy and design led, there will be no design advantage.

It is notoriously difficult to convince smaller businesses of the potentials of strategic design thinking as a key driver for market innovation and competitiveness. Yet small business makes up the majority of a country's total enterprises. In order to make sense, it is also pertinent that I present you with a snapshot of the importance of design and design thinking in the new economy, and explain how top-ranking companies are using design as one of the key drivers for their success, and the strategies they are using to differentiate their products, services and processes to excite their customers and outsmart their competitors. I will also outline how various countries are introducing design policies to improve their economic competitiveness. I will explore with some fervour to demonstrate the contribution of design to a nation's economic competitiveness, including the extent to which governments are leading the drive in capability building for competitive superiority.

Becoming design-savvy and internationally competitive is a complex and long-term endeavour. Generally speaking, before a nation's design advantage can be fully effective there must be at least local understanding about industrial competitiveness. According to the United Nation Industrial Development Organisation (UNIDO) Report 2002–03, industrial competitiveness does not mean merely opening economies to international trade, investment and technology flow, nor cutting wages. These are considered to be 'low road' and short-term defensive strategies that are incompatible with sustained growth. Long-term and effective industrial competitiveness requires capability-building strategies to nurture innovation, especially in the use of new technologies and research – the 'high road' drivers. Driven by constantly emerging and rapidly changing new technologies that are altering relationships between local and global enterprises, national and international rules and regulation are constantly changing. Although many of these changes provide significant benefits to developing countries that can harness them in their economic interest, countries that cannot could be marginalised and excluded. Countries at all levels of development face the same opportunities for and challenges to ensuring their products and services become and remain internationally competitive.

Countries have to acquire enterprise-specific knowledge, skills and practices to develop technological capabilities through an incremental learning process. This process can be slow and difficult, and can involve high risks and uncertainties. However, it is a key national imperative for building capability to enable a country to compete internationally. In the new economy, countries cannot afford to "become bystanders at the technological feast, stuck with the crumbs – stuck with simple manufacturing activities that do not lead to sustained diversified growth" (UNIDO, p. 9, 2002–03). To be competitive, countries must be aware of global economic movements. Global market, policy and technological signals enable businesses to adapt to macroeconomic changes.

Capability development takes place primarily in small and medium enterprises – the SMEs, which usually, on their own, do not have the knowledge and means to invest in design processes. Thus capability building requires complex interactions and collaborations among the key stakeholders – the government, industry, SMEs and the education sector. The complexity of the capability building process varies from industry

to industry and with the level of industrial development of a country. Within both industrialised and developing countries increasing competitiveness and strengthening technological systems and research are both costly and complex. It is crucial that strong government design policy supports are implemented. Countries must have design policies to guide their enterprises to cope with the challenges of globalisation, especially to do with the meaning of design and innovation, value-chain insights and adaptive capabilities for driving creativity and innovative use of technology to sustain and increase competitiveness. Countries must now accept that the globalisation of industry and the market is irreversible. Both developing and industrialised countries are similarly affected by trade and investment liberalisation, accelerated technological advancement, new organisation and management systems, new international rules and regulations, challenges and opportunities.

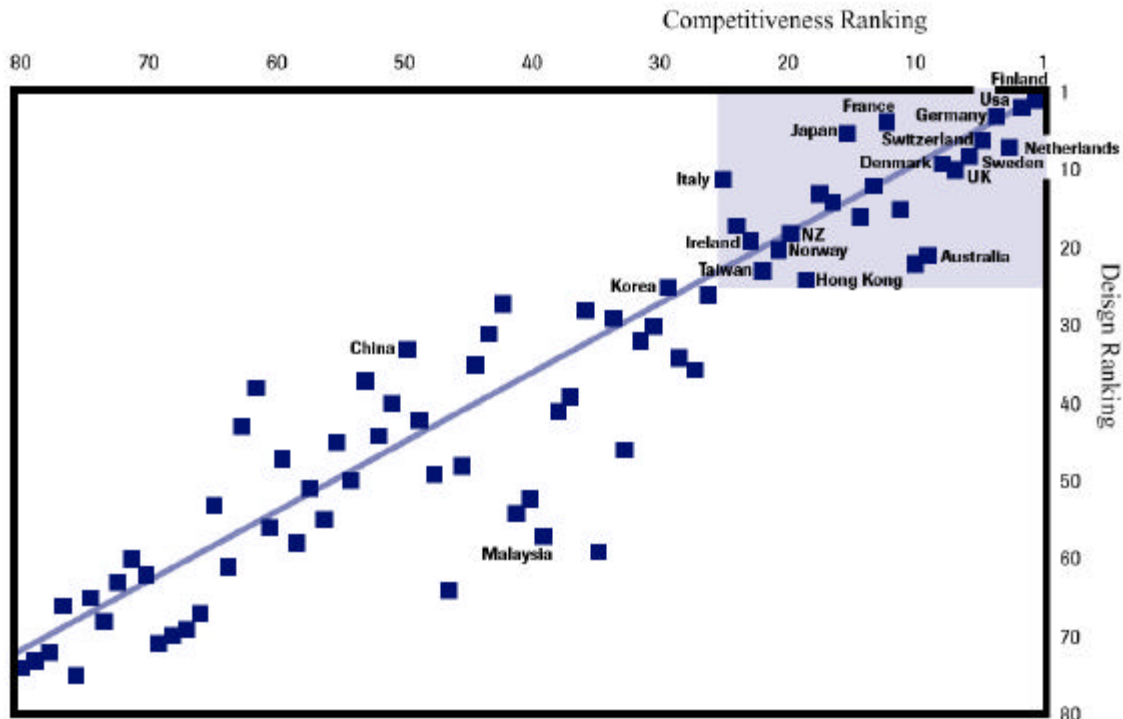
Competition is constantly taking new forms. Countries must now become competitive and survive through strategic creativity. Plentiful labour and low costs are important, but not as important as imagination, innovation, flexibility, reliability, service and quality. Fresh innovative products, delightful services and cool processes are becoming the key drivers for competitiveness. Knowledge, technology, capital and skilled labour are becoming increasingly available commodities – offering opportunities for enterprises, industries and countries to draw upon an existing stock of knowledge and advanced technology without a lengthy and costly learning process. Developing and industrialised countries are increasingly dependent on design as the key driver for improving economic competitiveness, rather than relying on skilled labour, technology and knowledge.

2 Design and the National Competitive Nexus

The relationship between design competitiveness and the economic competitiveness of a nation indicates the value-adding potentials of design. Many studies have indicated strong compelling evidence of the significant relationship between the use of design and high economic performance (NZIER Report, 2003; Mees Pierson, 2005; Designium, 2003; Friedman, 2004). The Global Competitiveness Report published annually by the World Economic Forum lists the most competitive countries in the world. Using the 2001–02 report and a suite of indexes that measure a range of factors, including the use of design as a business input that influences competitiveness, the New Zealand Institute of Economic Research (NZIER) has demonstrated the significant relationship between design application and economic competitiveness. Among the indexes compiled in the Global Competitive Report were five indexes that relate to the application of design – ‘capacity for innovation’, ‘uniqueness of product design’, ‘sophistication of production process’, ‘extent of branding’ and ‘extent of marketing’.

Figure 1 below clearly shows the strong linear relationship between economic competitiveness and design application for the 20 most highly ranked countries in the 2001–02 global competitive ranking.

Figure 1. World Competitive and Design Rankings



Source: NZ Institute of Economic Research, "Building a Case for Added Value through Design" Report to Industry, New Zealand 2003.

The shaded area in the chart shows the common area for which both the overall competitive index ranking and the design index ranking are 25 or better. It is worth observing that, with the sole exception of Korea, there are no countries ranked in the top 25 in terms of design that are not also ranked in the top 25 in terms of overall competitiveness. In other words, there are no countries that are ranked in the top 25 in terms of overall competitiveness that are not also ranked in the top 25 in terms of design application.

Many other global case studies have also discovered the close nexus between high-ranking competitive countries and the efficient use of design. Two more recent Global Competitiveness Reports of the World Economic Forum (GCR Survey 2003; GCR Survey 2005), have found almost similar patterns of this relationship. Mees Pierson (2005) also found very compelling connections between design and competitiveness. In a five-year analysis of share price performance of companies, Mees Pierson found that those with 'a high inclination' towards design were 'higher than' the average performers of the Standard and Poors 500 index, and 'much higher than' the companies that have 'little inclination' to using design. This study revealed that companies that have an inclination towards design performed much better in their share price in five out of five years, between 1995 and 1999, on the Standard and Poors 500 indexes. The results shown in Figure 2 below leave no doubt of the strong nexus between high design application and high competitive ranking for business.

Figure 2. Stock Exchange Performance: Standard and Poors 500 Index

Year	Inclination	Business with a low	Business with a high
			towards design
Inclination toward design			
1995		-40%	+63%
1996		-57%	+75%
1997		-12%	+30%
1998		-24%	+73%
1999		+02%	+63%

Source: J. Hertenstien, M. Platt, Northeastern University; R. Veryzer, Rensselaer Polytechnic Institute, 'Impact of Design Effectiveness on Corporate Financial Performance', 2003.

Friedman (2004) cites studies conducted by the Danish Agency for Enterprise and Housing (National Agency for Enterprise and Housing, 2003), which examines data in design investment, design maturity and economic effects of design. He concluded that companies that invest in design gained improved profits of 22% compared with companies that do not invest in design; companies that increased investment in design realised improvement in profits of 40% compared with companies that did not; companies that both employ designers and buy external design services export 40% of their products and services compared with other companies that only export 18% of their turnover. When the Danish Design Maturity Scale (0 = no design at all, 1 = design as styling, 2 = design as process, 3 = design as innovation) was used to measure performance, companies on the upper levels of the scale were more profitable than those on the lower end of the scale. All these case studies and other evidence that I have cited, at both national and international levels, have provided quite sound evidence for me to conclude that design is a key enabler for innovation, company profits and the economic competitiveness of a nation.

Further analysis of the competitive edge of design at the economic-wide level is the extent a nation's brands have become internationally recognised. The countries identified as being the most competitive in the Global Competitive Reports – such as Finland, the United States, the Netherlands, Germany and Switzerland – have each developed product brands that over time have become household names. Further reflection on the positive nexus between design and global high-ranking is the obvious role that marketing plays for each of the top-ranking countries. All these countries have seemingly tapped into the

global value chains to gain further economic advantage and competitiveness. Participation in the global value-chain provides countries with a means for accelerating the development of their enterprises for exploiting markets and technological capabilities via wider networking and connections. This means that the enterprise can perform a continuum of related dependent activities that are required to bring a product from its conception to its end users. This includes activities such as design, production, marketing, distribution and support for the final customers.

Within recent global value-chains there has been a loosening up of local controls for tangible (manufacturing) and intangible (idea/knowledge) activities. Governments and large corporations are externalising key functions and roles to smaller efficient players operating in different countries. A significant effect of industrial activities becoming globally dispersed has been the shift of key intangible competencies – such as design, branding, marketing, R & D, the provision of venture capital, financial services and so on – to developed countries such as New Zealand, Australia and England – to further increase a country's overall economic advantage and competitiveness.

In the new economy, innovation is increasingly becoming a nation's greatest asset. Competitive nations are exploiting intangible activities and benefits such as finance, design and services more aggressively and innovatively to enable them to positively integrate into value chains. These chain activities will enable business to forge new competencies, developing niches, improving national identity, and securing brand positions, jobs and wealth. Through partnership, cluster participation and networking the competitive advantage of a company or nation could be further enhanced. National and international clusters, such as the Silicon Valley, have proven to be capable of enormous economic growth, developing and sustaining business leadership in export markets, significant employment generation, preservation of high-value-added jobs and sustained technological progress.

3 The Design Taskforce of New Zealand

With this background in mind the Prime Minister of New Zealand, Helen Clark, set out in the government's economic development strategies – Growing an Innovative New Zealand – to lift New Zealand living standards in 2002. This strategy, now referred as the Growth and Innovation Framework (GIF), is a broadly based strategy designed to enhance innovation across the economy of New Zealand. GIF builds on the economic development policies that the government had put in place in earlier years and on other public and private sector thinking about how best to grow an innovative New Zealand. Growing an Innovative New Zealand stresses the importance of sound foundations for national development, including good fiscal management; a sound monetary policy; a competitive, open economy; social cohesion; a healthy, well educated population; and a solid research and development framework.

Biotechnology, information and communication technology (ICT), design, and screen production were identified for special attention and development because of their high growth potential and because the technologies or capabilities are enablers and drivers of activity across the economy generally. A taskforce for each of the sectors was established

in 2003 to develop policies to grow the sectors. (Growth and Innovative Framework, 2005 (NZ Ministry of Economic Development)).

GIF has identified four broad strategies for economic improvement for New Zealand:

- Strengthening of innovation
- Developing skills and talents
- Increasing international connections
- Engaging with the various sectors

This is an evolving process. Since its inception in 2002 GIF have changed and expanded as sectors, industry and businesses become more involved. At the heart of the GIF was the formation of the NZ Design Taskforce, along with the ICT, Biotechnology, and Screen Production taskforces to achieve the government's economic mission.

This paper deals only with the Design Taskforce and its initiatives. It is important to note that the Design Taskforce's strategy does not set out to position NZ design for international markets; it is also not a strategy for the design industry, *but rather a strategy to make more New Zealand businesses design capable* (Success by Design, p. 5, 2003).

The main aim of the NZ Design Taskforce is to encourage New Zealand businesses to be innovative in order to 'achieve three things':

- More New Zealand businesses achieving sustainable export success
- A more capable, business-savvy design profession
- Greater international recognition of New Zealand design.

The Taskforce has developed on these initial aims to take up the challenge of creating a transformation that increases the value and competitiveness of New Zealand business through strategic use of design, and to build New Zealand's design capability through:

- Raising the awareness of design as a key enabler for industry in New Zealand and within the New Zealand creative industries
- Developing a design-focus strategy for selected manufacturing sectors (i.e. products, furniture) and New Zealand industry in general
- Developing an understanding of what 'partnership' means between government and industry.
- Developing an awareness of the significance of and need for a more focused and collaborative approach within design-using industries
- Promoting the importance of protecting design IP, and providing information to help shape sector strategy.

5 X 50 X 500 X 5

The government recognises that innovation, imagination and creativity will be the key driving forces for wealth creation and economic and social growth. The primary mission is to put in place challenging and bold strategic initiatives to capture the following:

5 X 50 X 500 X 5, which translates as: in the first 5 years at least 50 existing businesses made internationally competitive through design leadership, generating an additional \$500m per year in export earnings, growing 5 times targeted Gross Domestic Product to produce \$1.5 billion by year 10.

A dynamic design-business partnership or cluster will not only be expected to contribute to achieving the above mission, but it will also create significant downstream opportunities for other New Zealand businesses – including producers of raw materials, testing laboratories, financial institutions, industrial, technical and management consultancies, training institutions and local government agencies. Perhaps more importantly, a dynamic international design cluster will help to shape and develop a global design strategy, competencies and opportunities for businesses and individuals to compete globally through the generation and exploitation of intellectual property. This includes advertising, architecture, art, antiques, branding, crafts, design (products), designer fashion, film and video, interactive leisure software, music, the performing arts, publishing, software and computer games, television and radio.

Forging a design-led business or economy in any field is complex. Dynamic and efficient clusters do not happen naturally within the private sector without facilitation and support from the government. External assistance from the Design Taskforce – based on a public-private sector partnership – can therefore greatly facilitate the organisation and development of an efficient national design-business-industry cluster to profile New Zealand, besides building professional, entrepreneurial and business competencies in global value-chains.

3.1 Initiatives of the Design Taskforce

A series of initiatives have been established to take effect concurrently to enable integration between business and design.

Figure 3. Initiatives of the Design Taskforce

1 Design Reference Group

This is a nine-member body to guide the implementation of the Taskforce's strategy and to provide advice to government, industry and education sectors.

2 Communication Programme

This programme is aimed at informing businesses of the value generation potential of employing design leadership as a fundamental business strategy and process, and at putting New Zealand design on the world map.

3 Design Enabling Business Conference

A high-profile event aimed at building initial momentum by bringing national and international design and business leaders to launch the Taskforce strategy, vision and initiatives, and create a design-enabled 'tipping point'.

4 Design Resource Directory

A listing of recognised professionals, practicing designers in all disciplines with associated service providers to enable New Zealand businesses, potential overseas clients, manufacturers, marketing companies, government, educators, and other organisations to access suitable qualified and experienced designers and the services that support them.

5 Design Audit/Mentoring

Programmes aimed at allowing businesses to build on their understanding and awareness of the value of design, and to put practical steps in place to increase design capability.

6 Design Project Funding

A practical programme aimed at assisting businesses develop their competitive advantage and build design capability by supporting the development of a specific design project with government funding of up to \$50,000.

7 Design Funding/Financial Assistance

A programme to reduce the financial barriers so that more New Zealand businesses are enabled to employ design strategically. Funding bridges the gap between New Zealand and economies where design is more highly integrated.

8 International Design Cluster

A programme aimed at promoting New Zealand's international design reputation and enabling design professionals to compete internationally.

9 Education

The education initiative consists of four programmes: managing internship for newly educated designers and industry-sponsored projects for design students and design researchers; overseeing the development of design management/strategic application courses for senior managers; promoting design management/strategy application in commerce and engineering professional education; and avocation for professional accreditation of tertiary design qualifications and promoting a greater business component in design education.

Source: Success By Design, 2003.

4 The Design Taskforce's Education Initiative

It is not the intention of this paper to describe all the design initiatives that are listed in Figure 3 above. However, as an academic I would like to specifically report in greater detail on the Education and the International Design Cluster initiatives as examples to

show the significance of each the nine initiatives. Readers who wish to have more details of the various initiatives are advised to visit the New Zealand Design Taskforce website <http://www.industrytaskforce.govt.nz>.

The Design Education initiative have been identified as a major component of the GIF Design Taskforce Strategy for nurturing a new breed of designer entrepreneurs for a more complex and connected world. The Design Taskforce Education Strategy is aimed at improving the design capability of businesses in New Zealand to achieve and sustain global competitive advantage through better use of critical creative thinking and entrepreneurship as strategic tools within the Growth and Innovation Framework. It is believed that there are substantial opportunities to broaden the scope of design education to encourage a deeper understanding of the potential of design within business and increase the awareness of the cultural and commercial value of design in New Zealand. An innovative design culture through education will improve the integration of emerging creative talent in industry, while equipping business with the ability and insights to implement design strategically and effectively (Successes by Design, 2003).

4.1 Key Educational Issues

The Taskforce has identified three key educational needs to make New Zealand businesses design-savvy and design-led:

For the design profession:

- The need for a more commercial content in design education and greater connection to business, to assist engagement and integration of designers with business (without compromising their creative focus)
- The need for accreditation of design education to raise the standards, ensure appropriate levels of funding and build confidence in design qualifications by prospective employees.

For business:

- The need for upskilling of chief executives and senior managers in design appreciation and its managing and strategic application
- The need to ensure that new business and professional graduates have a good understanding of the value of design and how to work with designers in this area of value creation.

In the public arena:

- The need for New Zealanders generally to have an appreciation of design, to enable more informed purchase decisions and to become more aware of design in helping local businesses realise their global potential.

As a result of the Education initiative Auckland University of Technology has developed a Master of Design and a Doctor of Design degree as two potent national design

programmes to develop capabilities for the creative industries, business and government sectors. Both the Masters and the Doctor of Design programmes have been designed to be effective and highly valued education choices preferred by a significant number of employers and employees for capability development. These work-based programmes emphasise critical design thinking and innovation, and are taught with an MBA model. As a national strategy, these programmes forge collaborations between education, industry and government to enable shared visions and common goals; it builds a climate for cooperation between education, industry and government; it complements and optimises the use of resources, facilities and equipment from industry with the intellectual and research expertise of the university; and it makes education at the Masters and Doctoral level more accessible, flexible and relevant for individuals who wish to study and work at the same time.

5 Design Policies of Competitive Nations

The strong relationship between design utilisation and a country's competitive advantage is both compelling and conclusive. Following the New Zealand Institute of Economic Research report on *Building a Case for Added Value through Design* (NZIER, 2003), the New Centre of Innovation in Design at the University of Art and Design in Helsinki, Finland have published two related reports: *Design Policy and Promotion Programmes in Selected Countries and Regions* (2003), and *Global Design Watch* (2006), which updates the 2003 report. Both reports have reiterated the findings of the NZIER with regards to the strategic importance of design for national and industrial competitiveness of countries around the world. The 2003 Finish report surveys the design policies of 13 countries and compares the relative emphasis of the economic, cultural and social benefits accruing from the design support of the policies. It also discusses the measures that are generally applied to promote the effective use of design innovation nationally and regionally in Europe, Scandinavia, the USA, Asia and Oceania (Australia and New Zealand). The report also monitors and compare six aspects of design-strategy administration, including the quantitative and qualitative structure of the design policies, values and qualities the design policy and promotion programmes represent, the prime actors and focal areas, the responsibility for design promotion at the administrative level, the role of the national design centres, and the funding policy and promotion programmes.

The Finnish report is both very well researched and succinct. It establishes several key findings on how international design policies from around the world are promoted, administrated and funded. This is invaluable information for governments and other design stakeholders to gain insights on the form, scale and benefits of governmental interventions in the design industries. Government intervention in design promotion depends on a country's awareness of design application and the government's understanding of the benefit of design utilisation to the country's economic competitiveness. Generally design promotions are multidisciplinary programmes aimed at creating design awareness in the public and private and government sectors, education and research. Perhaps more importantly, design policies are instituted at varying degree of complexities and functions, at national and regional levels, to achieve a multitude of strategies for the public good, and environmental, social and political responsibilities rather than solely for economic competitiveness.

The extent to which these issues are addressed in the design policy depends on the country's historical, socio-cultural and economic development. Thus design policies are growing and changing intentions of a particular socio-economic need of a country at a particular time. Therefore, every design policy is different; some are very bold and encompassing, and some are modest and narrowly focused. New Zealand, Finland, Denmark, Norway, Ireland, Singapore and Sweden have introduced national design policies, while Italy, Australia and France have developed design policies at a regional level. In larger economies such as the US and UK design programmes are implemented at national, regional and private organisational levels – for instance, the Design Management Institute (DMI) in the US, the British Design Council (BDC) in the UK, and the Design Institute of Australia (DIA) in Australia.

Many countries have instituted specific and measurable objectives in their policies. Figure 4 below shows some of the bold commitments and challenges that some countries have set out to achieve in their programmes.

Figure 4. Examples of Specific Measurable Policy Objectives

New Zealand 2003–13

- 5 X 50 X 500 X 5, which translates as:
In the first 5 years at least 50 existing businesses made internationally competitive through design leadership, generating an additional \$500m per year in export earnings, growing 5 times targeted Gross Domestic Product to produce \$1.5 billion by year 10.

Denmark 1997–2002

- The number of companies which agree that design effects the competitiveness when developing new products increased from 62% to 80%.
- The number of companies that used external design consultants in developing and designing new products increased from 30% to 50%.

Finland 2000–05

- 50% of companies to use professional design services as part of their business operations.
- 30% of companies to take design into account in their strategic planning.
- 10 design firms in Finland to operate in the international marketplace.

Finland 2005–10

- 200 new enterprises to adopt design annually as part of their operations.
- 80% of companies to take design into account in their strategic planning.
- 50% of companies to take design into account in their business operations.
- 20 design firms in Finland to operate in the international marketplace.

Sweden 2006

- 100 enterprises to annually increase their design abilities and make conscious decisions on design.

Norway 2001–05

- Half of all companies to use design when developing new products and services.

Ireland 1999-2003

- Increase from 3,700 to 8,000 in design consultancy employment.
- Increase from 2,300 to 4,000 in in-house designer employment in companies.
- Increase from IR£ 230 million to IR£ 500 million turnover in design consultancy.
- Increase from IR£ 38 million to IR £ 500 million turnover in design consultancy export.

Korea 2002-07

- To raise the ratio of Korea's design development to 65% by 2002.
- To raise Korean design quality to 80–90% of that of the more advanced countries.
- To increase the number of corporate in-house designers from 20,000 to 100,000 by 2007.
- To raise the market value of the design industry from 7 trillion won (1.2% of GDP) to 20 trillion won.

Source: Design Policy and Promotion Programme in Selected Countries and Regions, October 2003.

6 Natures of Design and Design-Led Innovations

Although nearly all the top-ranking economies today have design policies and other systems to enhance design, innovation and economic transformation, it is important to realise that the mere implementation of a policy programme will not necessarily result in increased economic competitiveness. Design and innovation are complex issues that require considerable knowledge, strategic planning, long gestation time, mutual partnership between education, industry and government, socio-cultural-technological optimisation and determination before they can succeed and flourish. Most design policies, such as the New Zealand one, are designed to improve more than the aesthetics of products. One of the main intentions is to shift industry mindset in order to make complex transformations of a nation – from a science and technological policy to a fundamentally innovative policy.

According to the UN Industrial Development Report (2002–03) this transformational process requires knowledge and considerable know-how and determination. Countries that are intending to make such a transition will need to have the awareness and knowledge to compare and monitor industry performance and drivers with their own and other countries; know how to formulate, implement and monitor national strategies and policies for sustainable industrial development and growth; understand and know how to utilise global sources of technology and knowledge to develop domestic industrial capabilities; know how to build competitive productive capabilities and upgrade them over time; and know how to strengthen national innovation and learning systems.

There are increasing attempts by scholars to investigate and to understand the links between design policies, innovation in national economy and value creation (Friedman 2002; Korvenmaa 2000; NZIER 2003). These investigations have proven to be challenging, as there are different processes and a complex network of activities in the design and commercialisation of a product or a service. The extent of the success which design contributes to a business may be attributed to branding and marketing, supply-chain management, logistics or customer relations, currency exchange rates or monopoly (Friedman 2003). However, insightful national design policies are usually designed to address these activities simultaneously. There should be no reason why a well-informed national design policy that is strategically designed should not increase the national design advantage of a country, to a certain degree, in the long run.

What is important in a design policy are effective strategies aimed at lifting the knowledge and understanding of the concept and capability of design. We need to transform ingrained traditional perceptions about design from 'drawing', 'doing' and 'making' to 'design thinking', to 'strategic design thinking', to 'imagining' and

‘innovating’, and move from emphasis on “‘tangible skills’ to reliance on ‘intangible ideas’. Design has served mankind well by evolving and extending its utility and function to benefit civilisations – from prehistoric times through to the agriculture era, the industrial era, the information age, and the recent knowledge society. Design is an emerging and transforming discipline. We are now living at the dawn of the attention economy (2001), the experience economy (1999), the dream society (1999), the empathy economy (*Business Week*, 8 March 2005), the creative economy and the conceptual economy (*Business Week*, 1 August 2005) all at once!

6.1 Design in the Heuristic Society

In the new human-centric or heuristic society we are experiencing the commodification of knowledge, skills and technologies. What was once the central business of corporations – price, quality, digitised analytical work, and logical thinking associated with knowledge, skilled labour and technologies – will be outsourced to highly trained and lowly paid overseas economies. The driver of competency – design – is changing. It is not just about skills, price, mathematics, science and technology any more. The new economy is all about creativity, imagination, innovation and emotion. D. H. Pink (2005) explained eloquently that we have in the past relied on a different part of our brain to build our competitive edge. If the industrial age was built on people’s backs, and the information age on the left-brain, the conceptual economy is being built on the right brain. We have progressed from a society of farmers to a society of factory workers to a society of knowledge workers. And now we are progressing yet again to a society of creators, empathisers, pattern and meaning recognisers, experience and dream creators (Pink, D. H. *Wired*, Issue 13.02, February 2005.)

All this is going to have far-reaching implications in the way we do business, manage industries and on our plans to educate a new breed of designers. To flourish in the new economy, we will need to supplement our well-developed high-tech abilities with aptitudes that are ‘high concept’ and ‘high touch’. High concept involves the ability to create artistic and emotional beauty to give customers pleasurable experiences that live up to their dreams, to detect patterns and opportunities, to craft compelling stories, and to come up with inventions that delight the human senses. High touch involves the capacity and sensitivity to empathise, to understand subtle human emotional needs, to find joy and delight, and to transform them into products and services that stretch beyond the confines of our left brain – imaginations, cool meanings and compelling stories (Pink, D. H., 2005). Companies will have to combine logical thinking with heuristics. Companies have to gain new insights into emerging demographics and behaviours of the New Greys, Boomers, Generations Xers and Yers, and the forthcoming tech-savvy, affluent and creative consumers – Generation C (Florida, R., 2005). New customers seek new experience. Business needs to pamper them with imaginative products, services and processes that delight them and enhance their experiences.

This is real value-added creation. This is the true new meaning of design. Manufacturers can no longer apply quality management systems, technology, skills or the Six Sigma (a metric for measuring defects and improving quality pioneered at Motorola) to create the kinds of empathic and emotional connections that define the next generation of product and service innovations. (*Business Week*, 8 March 2005.) These are the ‘cool stuff’ that makes innovative companies. Good design is good business and innovation does not have

to have anything to do with technology. Larry Keeley (2005) maintains that there are 10 types of innovations: Channel, Brand and Customer Experience (Delivery); Product Performance, Product System and Service (Offering); Enabling Process and Core Process (Process); and Business Model and Networking (Finance). Corporations are extending the boundaries of design beyond mere product and service differentiation to include culture, contexts and system thinking to transform and innovate corporations. In an age of complexity, interdependence, ambiguity and connectivity, corporations require new approaches, new languages and new strategic design thinking for creating new value through aesthetics, user experience, cultural insights and interpretations (Green, J., 2005).

6.2 The World's 25 Most Innovative Companies

The Boston Consulting Group has recently selected the World's 25 Most Innovative Corporations (*Business Week*, 24 April 2006). The corporations were shown to have incorporated one, two or all three of the following 'best practices'– product innovation, process innovation and business model innovation – in their business.

Figure 5. The World's 25 Most Innovative Companies

2006 survey and analysis of 1,070 senior executives in 63 countries by the Boston Consulting Group

Companies		Key Innovations
1	Apple	Hello, iPod World. Outstanding design and innovative software platforms create an unrivalled user experience.
2	Google	Allows one of the world's brightest crops of engineers time to experiment. Focuses on simplicity and the customer.
3	3M	Revamped its vaunted R & D labs in 2003 to centralise basic research.
4	Toyota	A master of manufacturing innovation, and now hybrid technology. New cost-cutting strategy calls for reducing vehicle system costs as a whole.
5	Microsoft	Primes Windows and Office sales with innovations. A new combo of Web and PC services, called Live, is off to a solid start.
6	General Electric	Transforming from an efficiency powerhouse to one that values bold ideas. Now rates managers on traits such as 'imagination and courage'.
7	Procter and Gamble	Its 'connect and develop' model calls for 50% of new products to come from outside. Design and innovation execs are now part of the organisation chart.
8	Nokia	Global handset leader. Diverse teams create future-oriented 'world maps' to track macro trends. Designed low-cost phones for emerging markets.
9	Starbucks	Would you like a movie with your latte? The creator of the \$3 coffee has started marketing films. Taps an army of baristas for customer insight.
10	IBM	Donated 500 of its more than 40,000 patents to help build new technology ecosystems. Co-invests in projects with clients and partners.
11	Virgin	Adds its hip lifestyle brand to everything from airlines to insurance. Enters new businesses at lightning speed.
12	Samsung	An intense design focus, speedy product cycles and rigorous metrics make the South Korean company a creative force in electronics.
13	Sony	Fell eight spots this year, is trying to claw its way back with a focus on high-definition products and a revamped management structure.
14	Dell	Revolutionised the PC supply chain and sales channels, but stuck in Apple's shadow, Dell fell eight spots this year.
15	IDEO	Designed the Palm V and Leap chair. Now helps some of the biggest companies learn design thinking and transform their cultures.
16	BMW	Brings teams together to collaborate inside an innovative research centre. Sets up competitions among designers for new car models
17	Intel	Expanding beyond microprocessors and outside the PC. Poised to launch more products in 2006 than at anytime in its history.
18	eBay	Built the world's largest online marketplace and a new way of doing business. Launching a

		fixed-price site to cater to busy consumers.
19	IKEA	A focus on affordable design and a different retail experience have turned the Swedish retailer's shoppers into cult fans.
20	Wal-Mart	Wields technology and pioneers processes to streamline its supply chain. A beleaguered image may have prompted its seven-spot fall.
21	Amazon	Continuously focuses on improving the online experience. Increasing R & D spending on search and Web services for outside merchants.
22	Target	Embraced design as a differentiator in the discount market. Creative marketing and temporary stores surprise devoted customers.
23	Honda	Known for excellent engineering, Honda is thinking outside the car, launching solar cell production for homes and businesses next year.
24	Research in Motion	Breakthrough mobile devices changed the way business communicates. Dominates the wireless e-mail market.
25	Southwest Airlines	Created the low-cost airline model through operational innovation. Developed fare marketing software for consumers' desktops.

Source: *Business Week*, 24 April 2006.

These results confirm yet again the positive connection between a corporation's high economic competitive ranking and the application of design. All the 25 most innovative corporations also came from countries with strong and strategic design policy programmes. From this evidence we can conclude that good design, strategic design policy, innovative corporations and the high competitive economic standing of a nation are closely interrelated. Simply put: design is a key enabler for innovation, wealth creation and economic competitiveness. A design-savvy nation is an economically competitive nation.

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