ENTREPRENEURSHIP: VALUE CREATION THROUGH HYBRID THINKING, TINKERING AND EMOTING CUSTOMER EXPERIENCE

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ABSTRACT

Interests in entrepreneurship and its potential contribution to value and wealth creation, as well as enterprise and national competitive advantage have both exploded in recent years. This paper discusses the interrelationship between the design process, entrepreneurship, and innovation for developing good ideas into viable business outcomes. It then examines the theory and evidence on the role design education must play to nurture a new breed of designer-innovator-entrepreneur with creative competence to exploit, disrupt and transform products, systems, processes, services and brands into preferred ones. The process through which designers may be educated and mentored towards a mantra for entrepreneurship is discussed along with the necessity for design education providers to align their curriculum with the nation's human capital development strategy. An eight-year experience of a one-year Master of Design at AUT University in New Zealand is discussed to showcase the teaching and learning to transform designers from across the creative industries into business savvy graduates.

Keywords: Entrepreneurship, Curriculum, Design Education, Value Creation

1. INTRODUCTION

This paper details an eight-year journey of the one-year taught Master of Design (MDes) at AUT University in New Zealand. It specifically examines the curriculum which emphasises career enhancement - through design innovation, technology and entrepreneurship. The programme underpins a core belief that design is a key enabler for wealth creation - within the wider social, cultural and national contexts where designers make contributions in a transdisciplinary environment to forge innovation. Nurturing a new breed of designers with capabilities and competencies for the new economy (Anderson 2009), where creativity, innovation and entrepreneurship are at the heart of employability, career advancement and economic growth, is an ambitious, holistic and humanistic process. So, to be successful, design education must adapt in order to be socially, culturally and economically relevant. Contemporary studio methods in skills development must be combined with a thinking culture in value design to generate wealth.

2. DESIGN & VALUE CREATION

Value creation is the soul of business, innovation and entrepreneurship. Design plays a supreme role in the creative process for the ideation of value, creation of value, and delivery of value (Kahan 2013; McKinsey 2000) in products, services, systems or brands. Design innovation is not only important to the competitive advantage of businesses; it also plays a key role in growing a nation's prosperity. For design education, it is central for creating meaningful career paths for our graduates. The process of innovation is particularly well endowed in the design process. Design educators need to morph their pedagogic and curricula aims to nurture and ground their students with a deeper understanding and insight on how to activate and trigger innovation and entrepreneurial mindfulness.

This is a challenging process requiring leadership, stewardship and change (Norman 2010), if design schools are to merge design innovation and entrepreneurship into their curriculum - without the rhetoric, or substituting design creativity for business analytics in the process. But, insightful innovation that results in sustainable entrepreneurial successes has to be earned through more realistic immersion in designerly integrated thinking, tinkering and emoting of customers' aesthetic appeals, functional requirements and emotional needs. Above all, design education in the future must nurture a strong mantra for entrepreneurship that transforms not only the graduate's employability, but also the competitiveness of enterprises and national economy. These are some of the most fundamental abilities for design innovation. Akin to design creativity, innovation and entrepreneurship can be imparted: they are learnable, knowable and designable.

The curriculum therefore must be designed to focus on building graduates' aptitudes and competencies for career opportunities in the changing economy. Capability development in creativity, innovation and the judicious use of technologies to deliver engagement and experience are the greatest assets for career and economic transformation. Hence, our MDes programme has been developed to deliberately bend our teaching to changing mindset and personal mantra via integrative teaching and learning about the value and power of design for career enhancement and employability in creative professions as entrepreneurs, innovators, strategists, service designers, business designers, brand strategists, customer experience managers, and so on.

3. THE ATTRIBUTE OF DESIGN, INNOVATION AND ENTREPRENEURSHIP

Entrepreneurship refers to innovative design activities to create new ideas that have value. An entrepreneur innovates through integrated design thinking to create wealth or for social good. Entrepreneurship, innovation and design interact to create new ideas in product, services, processes or systems and grow them into successful businesses. Contrary to prevailing beliefs, innovations are not sudden breakthrough events akin to the scientific bathtub eureka discovery where a new paradigm is found to replace the existing one. They depend mainly on creativity, imagination and audacity for their ideation and development. They are not the result of analysis and planning per se, but are developed in an evolutionary manner through tinkering, and trial and error (Jacob 1977). The main aim is to emote

meaningful customer experience through value creation. Entrepreneurs and innovators are not born with special human characteristics, mystery or unique personality. They can be born, but they can also be trained. Any creative individual with integrative or hybrid thinking has the potential to be trained to be a designer-innovator-entrepreneur (Sanger and Levin 1992).

'Technology' and 'meaningful experience' are two of the most important design spaces to achieve breakthrough or radical innovation. Norman and Verganti (2012) claimed that technology-driven innovations are often the results that come from inventors and tinkerers. Technological innovations can create new experience through emoting new meanings. They concluded that human-centred design that focuses on observation, ideation and prototyping is unlikely to result in radical innovation; it is more suited to incremental innovation. The ideation and development of new products and services, and novel technologies at large are said to evolve along trajectories characterised by a high degree of initial business uncertainties and risks. Bettiol et al. (2013) posit that tinkering reduces risks in the innovation search space and materialises the unknown and intangible into concrete value proposition.

Tinkerers are advanced consumers able to emote user experience. They are the entrepreneurs and innovators now working in Silicon Valley and garages throughout the world, who tinker, temper, play, explore and experiment with materials and technologies to create new ideas and knowledge. A whole new entrepreneurial culture and knowledge in the way we design, innovate and invent new products and services is predicated in tinkering. Tinkering is a process that is very much akin to designing. Tinkerers research, experiment, test hypotheses - with their hands - that are similar to scientific trials, hypotheses and experience. They create abstract knowledge and theories that can fuel innovation through practice and intimacy with material, form, function and emotion. These creative processes are easily transferable to, and learnable by, most students with a determination to become design strategists, innovators and entrepreneurs.

The secret is to nurture students to bridge the business-innovation and design-creative spaces across the scientific-artistic, analytical-heuristic, logic-emotion and scholarship-connoisseurship continua through a curriculum and pedagogy that harmonises and integrates differing disciplinary needs in design, innovation and entrepreneurship.

4. CURRICULUM & PEDAGOGY OF THE MASTER OF DESIGN

Students enrol in this MDes programme with varying degrees of prior design skills and experience. The MDes does not propose/intend to further develop the student's skills in exploratory, ideation, generative, and evaluative proficiencies. These are deemed to be "horizontal" skills that have been developed during their undergraduate study and/or industry experience. The key value of the MDes curriculum is focused on instilling students with a new set of "vertical" knowledge to enable them to broaden and deepen their design thinking abilities in order to enable them to work in businesses and organisations to create value, drive competitive advantage and innovation in product, service and brand design –

thus bridging and harmonising the scholarship-craftsmanship, and expressive-intuitive competency gaps in the innovation process (Yap 2012).

Vertical knowledge is delivered through two core papers (Design Innovation, Technology and Entrepreneurship; and Design Research Methods and Contexts), and two elective papers (Merchandising and Branding Strategy; and Sustainability Design).

A "Capstone" Design project that is informed by the two core papers, and to a lesser extent by the two elective papers, tests the students' knowledge, understanding, and comprehension in proposing a research question, problem analysis and opportunity-seeking abilities, articulation of market gaps, developing actionable insights, identifying customer needs and wants, design thinking, human-centred design, developing value propositions and a business model/plan. Thinking, tinkering and emoting experience integrates and synergises vertical knowledge with horizontal skills, to enable innovation to flourish. The Capstone Design project provides the hybrid thinking and tinkering needed for students to create value.

Many of our graduates are now sought after to work in positions as brand strategists, planners, design thinkers, business designers, service designers and thought leaders. This indicates the positive transformation of our students - from "doing" to "thinking", to "being innovative", to "growing entrepreneurial aspiration".

Ultimately, an ideal design education must deliver a rich pool of creative human capital that will enable a small nation – such as New Zealand - to integrate its products, services and businesses into global value chains. Design education plays a key role in developing entrepreneurial competency targeted by government and industry such as the New Zealand Growth and Innovation Framework (GIF 2002), and its Design Taskforce (Success by Design 2003). Design Schools are particularly adept at providing the stewardship not only for developing future graduate careers, but also as change agencies to lead industry and the state to transform sluggish economies into design-savvy, high-wage and high-value globally competitive ones.

5. CURRICULUM DESIGN

Curriculum design calls for the consideration of many related factors. This may range from the requirement to achieve specific benchmark standards set by the university and the government, the consideration of the demographic and culture of the students, the difference in learning abilities, the students' aspiration and expectation of the programme they have enrolled in to improve themselves, and so on. But all these are "hygiene factors" in teaching and learning. While they are important issues, they do not lead to innovative educational outcomes that significantly add value in employability or enterprise and national competitiveness.

6. HUMAN CAPITAL FOCUSED CURRICULUM

Significant curriculum design and development is the result of imagination, knowledge and vision – and perhaps the audacity of the teaching staff – to nurture a new breed of design

strategic thinkers with competency to align creativity and leadership in design innovation, technology and entrepreneurship across industry sectors in the creative industries. The main aim of a human capital centric design programme – such as the Master of Design - is to transform traditional art and design education in "toaster and poster" design to developing mindset and mantra in entrepreneurial or innovative competency. Design education must change to undertake a more significant role of national importance in competitiveness, value and wealth creation for the nation.

The Master of Design programme has been designed to help realise New Zealand's needs to develop an innovative society based on government initiatives, besides the faculty and university strategy to deliver programmes that are "original and leading". For a postgraduate design programme to be effective, its curriculum must align and exist in a favourable environment where creativity is sought after, and must benefit from the nation's cultural dynamics, human capital availability, history, politics, natural resources, and even its geographical position to create well-paid jobs, and high-value products and services.

7. POSITIONING THE MASTER OF DESIGN WITH NEW ZEALAND'S ECONOMIC TRANSFORMATION

Education must add value to the nation. Design in New Zealand and in many other countries, is a developing discipline that has continually morphed with changing technological, social and demographic needs. The main aim for our Master of Design is to create human capital competency for the new economy. New Zealand has experienced sixty-five years of economic decline due to its distance from the markets and its reliance on agriculture. Design innovation and entrepreneurship at business, industry and government levels have been well accepted as one of the key panaceas to cure the country's economic downturn. Design has also been signalled as a key driver for creativity and innovation, aimed at creating brand reputation, value and wealth, GDP and prosperity (Success by Design 2003). This has resulted in the proliferation of government intervention policies to address social, productivity and innovation problems.

As a predominantly agricultural nation, New Zealand's economic performance has always been affected by global events, socio-cultural factors and physical constraints. A small population size and large distance from key global markets also present considerable disadvantages. New Zealand, therefore, cannot continue to compete in low value production of food, or by simply opening the economy to international trade, investment and technology flow, or by providing cheap labour (GCR Survey 2006).

Competitive advantage and value creation are constantly taking new forms. Globalisation and the internet have made knowledge, technology, capital and skilled labour increasingly available resources – offering opportunities for enterprises, industries and countries to draw upon an existing stock to produce manufactured goods, without a lengthy and costly learning process.

However, merely turning these resources into commodities, without design, innovation and entrepreneurship are considered to be 'low-road' and short-term defensive strategies that

cannot sustain economic growth and global competitiveness. It is believed that New Zealand's long-term and effective creative competitiveness requires capability-building strategies to nurture imagination, innovation and entrepreneurship, especially in the design of value-added meaningful and technological products, services and brands. These 'high-road' drivers are the keys to competitive advantage in the creative economy for a small and distant nation such as New Zealand.

8. ALIGNING CURRICULUM WITH NEW ZEALANDERS' INGENUITY

The notion of the importance of design and creativity is not foreign to New Zealand. 'Kiwis' consider themselves to be both innovative and ingenious. These include the following New Zealanders: Ernest Rutherford who was the first to split the atom in 1919; A J Hackett who invented bungy jumping; Ernest Godward who invented the humble eggbeater; William Hamilton who invented the jet-boat; William Atack who invented the referee whistle; Bill Gallagher who invented the conveyer belt, and the electric fence; and Richard Pearse who designed and flew the first human-powered flying machine. Kiwis also excel in biotechnology, software design, transportation design, film direction and animation such as Avatar, X-Men, King Kong, The Chronicles of Narnia, the Lord of the Rings, The Adventures of Tintin, Dawn of the Planet of the Apes and more. What the country needs is not simply to produce more designs to generate more ideas, but rather to produce more designers thinkers, strategists, innovators and entrepreneurs who are able to develop ideas into wealth and the know-how to commercialise them.

Recent evidence has indicated strong correlationships between design capabilities with economic competitiveness of wealthy nations. This early evidence and emerging consensus have led to the transformation of design as a key driver for wealth creation and competitive advantage. Design policies and creativity programmes have sprouted in almost every country around the world as a weapon not only for wealth creation, but increasingly as a panacea for arresting the economic downturn of businesses, states and countries. The relationship between design competitiveness and the economic competitiveness of a nation indicates the value-adding potentials of design. Many studies have indicated compelling evidence for the significant relationship between the use of design and high economic performance (NZIER Report 2003; Friedman 2004; Pierson 2005).

Over the last 20 years it has become clear that New Zealand urgently needs to build a stronger design-led culture of business innovation, and acuity in entrepreneurship to successfully add value to its products, services and brands. The Master of Design has been developed with this national background in mind.

The catalyst for the development of the Master of Design is the New Zealand government's economic development strategies – Growing an Innovative New Zealand, and the Growth and Innovation Framework (GIF 2002). The documents aim to lift New Zealand's competitiveness. Its main aim was to raise productivity and the standard of living of New Zealanders. It stresses the importance of building the following: effective innovation; skills and talent development; sound foundations for national development, including good fiscal management; a sound monetary policy; a competitive, open economy; social cohesion; a

healthy, well educated population; a solid research and development framework; and much more. It is beyond the scope of this paper to dwell on the details of the strategies. However, it is clear that design innovation, technology and entrepreneurial capability building – enshrined in the Master of Design - are the key human capital drivers needing to be developed for realising the GIF challenges and opportunities.

9. DEVELOPING GRADUATES TO ENGAGE WITH INDUSTRY SECTORS

GIF made it a priority to engage with the following four sectors:

1. Design
2. Biotechnology
3. Information and Communications Technology (ICT)
4. Screen Production

These sectors, or industry bodies, were selected because the government considers them to be the potential drivers for high growth, and because the technologies or capabilities with which they are concerned are enablers of activities across the economy generally.

In 2001-2002, the NZ government spearheaded a national programme to recruit individuals from business, industry and education to develop strategies for the four sectors or industry bodies. The four taskforces appointed by the government are autonomous industry bodies containing a broad cross-section of people to propose knowledge and insights on how best to grow the country's economy from their sector perspectives. The reports of the GIF Sector Taskforces, completed in 2003, emphasised the central role industry plays in the success of their growth strategy. Some of the sector strategies in the reports are still growing, adapting and morphing to compensate for changing external economic forces, both locally and globally.

The original taskforce reports are now almost a decade old. While they still provide an important direction for the sector's growth and development, many of their initial ideas have been completed or have changed. However, numerous reviews of the four sectors have identified some significant cross-sector recommendations (Morgan 2005; Economic Development Indicators 2005). All four taskforces identified a lack of commercial and entrepreneurial skills as a major barrier to taking a company global. Each placed priority in improving commercial and entrepreneurial skills among decision-makers in business. They also recommended that tertiary education providers improve co-ordination with industry sectors to ensure they produce appropriate innovative and business savvy human capitals for the nation.

10. PROGRAMME OUTCOMES AND EMPLOYABILITY OF GRADUATES

The Master of Design programme is beginning to achieve many of its objectives in human capital development. It is transforming graduate profiles in terms of career enhancement, job creation and employability, with a few that are beyond our expectations.

In May 2014, the Inland Revenue Department (IRD) hired three of our graduates, who graduated in December 2013, as service designers; two other graduates had also been

employed by the IRD prior to 2013. The employment of so many of our graduates by the IRD as service designers is significant. It indicates that the MDes programme is not only transforming students' careers to green-field employment that they were not capable of doing before completing the MDes qualification, but the MDes is also developing human resources capabilities for service organisations such as the IRD (and others) to improve organisational needs, aims and objectives. (The five graduates had previously held individual jobs as: a film maker, a studio manager in an advertising agency, a fashion design graduate working in a meat works, a brand designer, and a business graduate.) Another graduate, who has taken on a challenging position as a result of his graduate profile and design project, was a student from Saudi Arabia. He is now the Strategic Planning Specialist at the Ministry of Foreign Affairs in Saudi Arabia. The position was created for him as a result of his MDes Design Project titled: "Strategic Innovation as Enabler for Economic Growth in Saudi Arabia: Design Thinking as a Strategic Tool for Developing National Competitiveness".

Many of our graduates are able to compete for important positions against local New Zealand candidates. For example: Andy from India is now Planning Manager at Visionstream NZ; Patricia from El Salvador is with Corban Estate Arts Centre as a Marketing & Branding Strategist; and Anita from China is with "Pro-space" working on interior design projects with a collaborative partnership to open a branch in Ningbo in China. Other overseas graduates, who have careers that are the results of their new graduate profiles, in the last five years include the following: Karen, who gained employment with The China Daily; Manson as a product and brand consultant with Homewell Wood Industry in China; Joyce with Uni-Digital as the Regional Marketing Manager in Shanghai; Joe is now a Design Lecturer at Wuhan University; Lena is the Campaign Manager at WWF, Norge; Tamara is with Applied Communication in Iran; Tania founded "Co Sartie" in the USA; and Caro is Design Strategist at Cintli Latin Folklore, Colombia.

Local graduates in New Zealand include: Fiona with Telecoms (and many other businesses) as a service designer and strategist; Frank with Edenz College as a designer/brand developer; Sherry started her own design and merchandising lighting business; Heather is Project Manager at The Icehouse; Carly is employed as a fashion designer at Contrabrand Clothier; Marc is Director at "Save the Date"; Vic founded "Socio Ltd", a Consultancy in Strategic Design; Gabriel is Professor of Visual Effects at Savannah Colleague in Hong Kong; Chunchu is Design Analyst at Carnie Consultant; and Sara is Studio Manager at Short Cliffe.

These positions that our graduates are holding support the learning outcomes and the competitive advantage of the graduate profiles the MDes has been designed to achieve.

11. CONCLUSIONS

Increasing attention is being paid to curricula and pedagogy in design schools to address the changing demand for designers, innovators and entrepreneurs for the creative industries. An integrative Master of Design programme by course work has been described above as an eight-year case study. The main aim for the development of the Master of Design is human capital competency development to educate a new breed of design strategists, innovators and entrepreneurs with capabilities to create value, wealth and competitive advantage to

improve and sustain New Zealand's declining economy. The characteristics and processes used by entrepreneurs, innovators and designers were explored to establish their similarity. Inventing, tinkering and emoting meaningful experience for the customer by exploiting new technologies are some of the key criteria for innovation breakthroughs.

An integrated curriculum comprising horizontal skills, vertical knowledge, and a creative capstone project delivered and evaluated its efficacy. Anecdotal graduate surveys have found that while not many of them have become entrepreneurs, there is significant evidence that graduates employability is noteworthy. Many have changed or extended their careers into more satisfying, meaningful and rewarding ones. These include positions as brand strategists, service designers, business designers, and a few have started their own businesses. These positions support the learning outcomes and the competitive advantage of the graduate profiles the MDes has been designed to achieve.

The last ten years – since the MDes was designed – have seen significant technological, socioeconomic and demographic changes that require us to rethink and redesign design education, and our curriculum, to take into account the changing and demanding landscapes where the design space is situated. In terms of human capital development, design education must constantly change, morph and align with technology, socioeconomic issues, and changing market needs in order to stay relevant in the creation of value, wealth and competitive advantage.

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