
From Creative Industries to Creative Economy: The Role of Education

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EXECUTIVE SUMMARY

Hong Kong has reached another cusp in its development, following its economic rise from a manufacturing powerhouse in the 1980s to the blossoming of the service industry in the 1990s to crisis and recovery in the early 2000s. The city's current prosperity and solid performance of pillar industries, namely finance, logistics, tourism and professional services, are insufficient defences against intensifying global competition. With many an Asian economy developing into less expensive alternatives for Hong Kong's production and services, Hong Kong critically needs to find avenues out of the downward spiralling price competition and create new market spaces through universal creativity and innovation.

The solution to Hong Kong's problem should by no means be reduced to a mere boosting of the creative industries or artistic community. Creativity, in this context, refers to the generation of new ideas that are harnessed by thoughtful design to produce innovation for the economy, especially in the tertiary or services sector, to stay ahead of the competition.

A study of three nations forerunning Hong Kong in tackling similar problems—Spain, Finland and South Korea—offers a glimpse into national successes as a result of universal innovation.

Looking to Hong Kong, a number of agencies have been supporting the local creative and innovative scene. These agencies have to contend with a number of legacy problems in Hong Kong, where technology is often mistaken for innovation. Nokia, one of the world's most technologically intensive businesses, has long realised that innovation has more dimensions than technology alone. Moreover, the antiquated mentality among Hong Kong businesses is that design is a costly addition, rather than an indispensable and integrated process. Yet, as leading global brands have demonstrated, design for both products and services can be a profitable investment. Hong Kong's traditional role as a commercial middleman also tends to put Hong Kong businesses out of touch with end users, whose input is often the impetus and source of innovation. Moreover, Hong Kong businesses are seen to be less adventurous than their counterparts in developing economies because they tend to favour the traditional and the familiar over the novel and untested, a mindset that can be attributed to a combination of Confucian influences and a fault-phobic education system.

Nevertheless, there have been innovation successes in Hong Kong, including fashion retailer Shanghai Tang and the Octopus card payment system.

The beauty about creativity and innovation is it being non-exclusive and non-zero-sum. The unequal distribution of creativity and innovation on the global level can be traced back to differences in education systems between nations. While the innovation process is largely democratic and universal, it is practicality that becomes the differentiating factor between good and bad innovation. Education plays a pivotal role in society as it influences the supply and quality of innovation. The three nations studied here—Spain, Finland and South Korea—illustrate how education can produce universal innovation. Cross-referencing the three education systems yields the shortcomings and areas of possible improvement for Hong Kong's education system.

Pre-primary education should incorporate more play and exploratory elements in teaching, and move away from quantitative assessment. Students need to develop curiosity about the world around them so that as they grow they will be keen to learn from a variety of sources and topics as a precursor to a creative and innovative mindset. The system should encourage a greater role for parents not only in interaction with the school but also in the time a child spends outside the school. The system and parents need to work in tandem to ensure children are equipped with the basic skills and motivation to interact with the surrounding environment, people and situations so as to pave the way for future development of creativity

and innovation through diversity and cross-referencing. Problem solving and creative thinking can be introduced through design education.

Primary education should be more interactive and dynamic, allowing students to develop their own strengths without the restriction of a narrowly defined, quantitative assessment that is heavily based on classroom teaching at the expense of integrating learning with the outside world. By learning from a wider spectrum of disciplines, students develop the ability to see the same thing from different angles. With more teacher resources allocated over the next few years, the system can move on to relying less on a rigid curriculum for homework and exam assessment and more on projects and field activities. More cross-cultural studies and exchange can be introduced at the primary level. Students at this age, with their innate ability to mimic and relate, should have little difficulty in incorporating creative elements into their life if given adequate exposure to disciplines such as art history and appreciation.

Secondary education should develop curiosity in students by encouraging them to put book knowledge into practice and to interact with different populations to gain experience and inspiration. A learning pattern that involves investigation, trial and error ensures that students mature into inquisitive, creative problem-solving and innovative individuals. The system can include more opportunities for students to exercise their problem-solving skills and to experience the non-mainstream system or study overseas so as to experience different flavours of creativity and innovation. More projects and real-life learning can be factored in, such as field trips, long-term projects, exhibitions and presentations. On top of art history and art appreciation introduced in primary education, the case study method of teaching can be adopted to train students in problem solving and investigative thinking. Once system reforms have lessened the current workload, teachers can start to become more creative and involved in their approach, which should then have a multiplier effect on the students.

Tertiary education should aim to expose students to the widest spectrum of disciplines and cultures so that students become more resourceful and multi-faceted as they prepare for the professional world or further studies. There can be greater emphasis on creativity, innovation and entrepreneurship education to fill the current gap in “problem solving” and “opportunity creation”. Hong Kong also needs to be educated on the merits of a gap year, in which students take a break from academic studies to pursue other areas of learning. At the postgraduate level, a multi-disciplinary approach can bring together talents from different fields to achieve synergy in innovation. International partnerships and imported design schools can also benefit the profile and creative education of Hong Kong. Besides enhancing overseas exchange programmes, the mainstream system can also partner with the non-mainstream system, such as vocational colleges and the Hong Kong Academy for Performing Arts. This not only broadens exposure of mainstream students, but also helps students to appreciate excellence beyond academics. The system should also provide more opportunities for students to apprentice with various organisations. Besides the private sector, exposure to non-governmental organisations and even organisations outside Hong Kong provides excellent experiences to expand the horizons of students. The faculty can also lead the students in stepping out of the ivory tower. By shifting some emphasis away from pure academic research to practical research with the non-academic world, the faculty can benefit from greater inspiration and practical insights that can, in turn, benefit students.

Improving the education system in the long term to better equip the population for creativity and innovation does not need to solely rely on the teachers and educators. Parents and other segments in society, such as the private sector, can also make active contributions. Parents can be role models in practising lifelong learning and creating a shift in their mindset to be more encouraging to students who are not academically inclined.

A successful education system is one that unleashes the fullest potential in its students, wherever that potential may be. Coupled with a massive importation of talents in the

respective industries that can creatively make use of existing advantages and inspire innovation, Hong Kong can look forward to a bright future imbued with creativity and innovation.

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Our traditional pillar industries continue to leverage on the development of our country on all fronts and to meet globalised competition. To consolidate Hong Kong's status as an international centre for financial services, trade and shipping, we need to upgrade our local economic infrastructure gearing it to support independently innovative and high value-added industries.

- Donald Tsang, Chief Executive of Hong Kong¹

Such was the order from the man captaining Hong Kong as the city sailed through a turbulent sea of change, ten years after its establishment as a Special Administrative Region. As Hong Kong continues to plot a new course for its economic development against the backdrop of an ever more efficient Chinese manufacturing machine and increasingly stiff competition from around the globe, the question remains: What should Hong Kong be doing to stand tall in and outside the region?

This report examines the critical need for Hong Kong to rise above intensifying competition with creativity and innovation, both of which are currently lacking due to a misguided mainstream education system.² Hong Kong's competitiveness has been eroded by a decline in innovation, as observed by global surveyors such as the International Institute for Management Development ("IMD").³ By examining the nature of creativity and innovation as an economic driver, the reasons behind national successes in creative and innovative transformations will be better understood. By contrasting these national successes with Hong Kong's status quo, a picture will be established about how Hong Kong can gear up for the challenge in the long term through universal creativity and innovation, traits which a revamped education system can inculcate in the city's population.

Background and Objective

Hong Kong is densely populated—it has a population of 6.9 million people over just 1,104 square kilometres.⁴ Although its gross domestic product ("GDP") per capita ranks among the world's top 20 [see **Exhibit 1**], Hong Kong's economic development has been relatively recent. The city became a British colony in 1842 and developed as a trading port of Mainland China. After the second world war and the rise of Communist China in 1949, Hong Kong, confronted with waves of immigration from China, had to find alternative economic sources of revenue. Export-oriented and labour-intensive industries such as textile and toys soon thrived.

In the 1980s, manufacturing activities were progressively shifted to Mainland China. Several factors contributed to this trend, including Mainland China's increasingly relaxed business regulation following its economic opening in 1978, very cheap labour and much lower operating costs. Hong Kong has, nevertheless, retained the high-value-added activities. For example, Hong Kong textile companies usually retain their headquarters, design, marketing and sales departments in the city.

As a very urban centre, primary production (agriculture, fisheries, mining) has always held a negligible share of Hong Kong's GDP. The secondary sector (manufacturing, construction, and supply of electricity, gas and water) represented a significant share until the early 1980s, but then fell rapidly from 29% of GDP in 1984 to 14% in 1994 and to 9% in 2004. The

¹ 2006–07 Policy Address of the Chief Executive of Hong Kong (11 October 2006) "Independent Innovation", <http://www.policyaddress.gov.hk/06-07/eng/p25.html> (accessed 31 August 2007).

² Enright, Scott and Associates (2006) "Hong Kong's Competitiveness: A Multidimensional Approach", Phase I, pp. 28, 45 and 64.

³ International Institute for Management Development (2007) "World Competitiveness Yearbook 2007".

⁴ Government of Hong Kong "Hong Kong: The Facts", <http://www.gov.hk/en/about/abouthk/facts.htm> (accessed 31 August 2007).

tertiary sector (retail, freight and passenger transport, banking, insurance, real estate) has been in the lead since the 1980s, representing 90% of GDP in 2004.⁵

Hong Kong's economy is characterised by free trade, and a long-standing small-government philosophy has made the city business friendly. The US Heritage Foundation ranked Hong Kong as the world's freest economy in 2006 for the 12th consecutive year.⁶ Hong Kong was also ranked as the world's freest economy by the Cato Institute,⁷ a non-profit policy research foundation headquartered in Washington, D.C.

Having recovered from the Asian financial crisis in the late 1990s and the SARS epidemic in 2003, Hong Kong's economy has rebounded to new heights, with GDP figures showing average annual growth of above 6% for 2004–2006. Export of goods and services has almost doubled in ten years, growing from HK\$1.7 trillion in 1996 to HK\$3 trillion in 2006.⁸

Hong Kong's economy excels in several sectors. It is the world's busiest port in terms of throughput. Hong Kong is also a top financing centre and has Asia's second-largest stock market.⁹ With attractive prices at its glitzy retail shops, the city has also garnered a reputation for being a "shopping paradise", attracting Mainland Chinese and international tourists alike.

Behind all the prosperity and glamour, however, a growing uncertainty is brewing over the perpetuity of Hong Kong's competitiveness, especially in the light of recent strides around the region. While most of Hong Kong's manufacturers have shifted their low-end operations to Mainland China, their high-end operations and management in Hong Kong still lead to higher overall costs compared to the competition in Mainland China. Adding to the woes of Hong Kong manufacturers is the observation that manufacturers competing in global markets have been unable to pass on higher costs to customers.¹⁰ With Mainland Chinese manufacturers gaining in production quality and establishing business connections with international buyers, Hong Kong manufacturers have become increasingly marginalised. As far as mass-market or brand-less manufacturing is concerned, Hong Kong, like most mature economies of the world, has little hope to compete with Mainland China in the long term.

Even as Hong Kong no longer relies on lower-end industries such as manufacturing for economic sustenance, the picture is hardly rosier on the "home turf" for higher-end industries. One of Hong Kong's economic pillars, logistics, sees increasingly stiff competition from around the region, particularly from a fast-developing Mainland China. For shipping, Hong Kong's port is losing out to Shenzhen and Shanghai as Mainland China exports more and more goods through these lower-tariff ports.¹¹ In numbers, Hong Kong has already lost out to Singapore in container traffic since 2005 while Shanghai continues to dominate the tonnage traffic. With air traffic, bigger and more advanced airports are springing up throughout the region, posing direct threats to Hong Kong's regional leadership.

Another of Hong Kong's economic pillars, finance, also has its share of dark clouds. Despite Hong Kong's favourable performance in the face of persistent speculations about Shanghai's stock exchange overtaking as the nation's premier, there is no doubt that Hong Kong's

⁵ Based on figures released by the Census and Statistics Department, Hong Kong government.

⁶ Index of Economic Freedom, <http://www.heritage.org/research/features/index/> (accessed 31 August 2007).

⁷ Cato Institute (7 September 2006) News Release, <http://www.cato.org/new/pressrelease.php?id=56> (accessed 31 August 2007).

⁸ Based on figures released by the Census and Statistics Department, Hong Kong government, http://www.censtatd.gov.hk/hong_kong_statistics/key_economic_and_social_indicators/index.jsp (accessed 31 August 2007).

⁹ World Federation of Exchange (2006) "Ten Largest Domestic Equity Market Capitalisations at Year-End 2006 and 2005" *Annual Report*, p. 28.

¹⁰ Enright, Michael; Scott, Edith and Dodwell, David (1997) *The Hong Kong Advantage*, Oxford University Press: Hong Kong, p.198.

¹¹ Giron-Urquiola, Gina (Date unknown) "Hong Kong Port Continues its Regional Dominance", Hong Kong Trade Development Council, http://www.tdctrade.com/shippers/vol29_5/vol29_5_ports01.htm (accessed 6 September 2007).

financial field is at a crucial juncture.¹² Since Mainland China is teeming with capital and accelerating its liberalisation of the financial markets, Hong Kong can either leverage its leadership in the nation to scale new heights or slip into obscurity if overtaken by the other markets. Moreover, unless Hong Kong's financial sector innovates to become independent of institutional headquarters in New York and London, it will never become a regional financial centre with international influence and build an impregnable lead against rival markets.

So, if Hong Kong is facing more intense competition, the natural way out is to find—if not create—an uncontested marketplace, a strategy that is embodied in the “blue ocean” concept. In a nutshell, the blue ocean strategy is about “break[ing] out of the red ocean of bloody competition by creating uncontested market space that makes the competition irrelevant.”¹³ For Hong Kong, that means the city's economy should look for ways to differentiate itself from the competition and cultivate advantages unique to the city, instead of persevering in a losing game of price and cost.

Observers both in and outside Hong Kong have long noted the importance of creativity for Hong Kong's next stage of development.¹⁴ Creativity is essential for every level of the economy—from individuals to corporations, industries to economic clusters—to first recognise the need to break out of the red ocean, second to devise ways out and third to implement them.

It would be tempting to leave the creative task to the so-called creative sector of the population—those working in the creative industries (advertising; architecture; art, antiques and crafts; design; digital entertainment; film and video; music; performing arts; publishing and printing; software and computing; television and radio). However, on closer inspection, it makes no sense to let just 5% of the working population¹⁵ [see **Exhibit 2**] monopolise the solution to Hong Kong's future. In fact, it is in some of the creative industries where negative growth has been found in recent years, and Hong Kong's film industry is a prime example. Not even the belated recognition from international film circles in recent years can overcome the fact that Hong Kong's film industry has been reeling from massive losses in the local market in production, in investment and in talent.

Therefore, if Hong Kong were to succeed in tackling the blue ocean concept and formulate ways of breaking away from the competition, it has to be a society-wide effort. From the public sector which both creates conducive environments and acts like a patron, to leading conglomerates that dominate the private and retail sectors, to small- and medium-sized enterprises that make up the bulk of Hong Kong's registered businesses, to individual workers and freelancers, creativity can have an unexpected impact. Hong Kong's compact size, both geographically and economically, creates a perfect laboratory for innovation where results can be produced with expedition. Just as the hard work of each and every worker and company in Hong Kong has contributed to the city's rise from its humble beginnings, creativity in the individual and on average will help Hong Kong scale new heights.

In steering away from relying on the creative industries, it is important to define the scope of the creative industries. In a study commissioned in 2003,¹⁶ the Hong Kong government's Central Policy Unit identified 11 divisions of the private sector as creative industries: advertising; architecture; art, antiques and crafts; design; digital entertainment; film and

¹² Tucker, Sundeep (15 September 2007) “Some Bourses Remain Freer Than Others”, *Financial Times*.

¹³ Kim, W. Chan and Mauborgne, Renée (2005) *Blue Ocean Strategy*, Harvard Business School Press: Boston, p. x.

¹⁴ Chan, Bernard (30 May 2007) “Good Luck Donald, You'll Need It”, *South China Morning Post*; Kamm, Peter (8 June 2007) “A Creative Disconnect”, *South China Morning Post*.

¹⁵ Hong Kong Trade Development Council (29 June 2007) “Hong Kong's Creative Industries—Partner and Trendsetter for the Chinese Mainland”, <http://www.tdctrade.com/econforum/tdc/tdc070605.htm> (accessed 7 September 2007).

¹⁶ Centre for Policy Research, University of Hong Kong (2003) *Baseline Study on Hong Kong's Creative Industries*, Study for the Central Policy Unit, Hong Kong government.

video; music; performing arts; publishing and printing; software and computing; television and radio [see **Exhibit 3** for sub-sector classification]. Meanwhile, the Hong Kong Trade Development Council (“TDC”) uses a similar classification of ten industries: advertising; antiques, crafts, jewellery and related articles; architectural, surveying and project engineering services; business services (including design); information technology (“IT”) and related services; libraries, art galleries and cultural services; motion pictures and other entertainment services (including radio and TV); photographic studios; publishing, printing and allied industries; theatrical production and entertainment services (including music and performing arts).

Based on TDC’s classification, Hong Kong’s creative industries exported a total of HK\$16.8 billion in 2005. From 2000 to 2005, exports of Hong Kong’s creative industries have been solidly growing at a cumulative average growth rate (“CAGR”) of 11.5%. Advertising was the biggest export of all the creative industries in 2004, but slipped to second position in 2005—its share of overall creative industry services exports dropped from over half of the total in 2000 to just one-quarter in 2005. This reflects the industry’s falling employment levels, with a CAGR of -4% between 2000 and 2005. On the other hand, computer service exports showed the highest CAGR of 55% in the same period. In 2005, the share of creative industries in total services exports was 3.5%, slightly down from 3.6% in 2004 but up from 3.1% in 2000 [see **Exhibit 4** for details].

As encouraging as the well being of the creative industries in Hong Kong may be, one sector’s efforts are not enough to lift the city from the red ocean in which it is billowing. To capitalise on the opportunities available, Hong Kong must get creative as a whole and thoroughly innovate itself. With a goal of reaching innovation, Hong Kong will need its workers—from the rank and file to top executives—to get creative and come up with great designs for existing businesses and novel ideas for the future.

What is Creativity?

The ways in which civilisations have perceived the concept of creativity have changed throughout history, as has the term itself. The ancient Greek concept of art (in Greek, *techne*—the root of “technique” and “technology”), excluding poetry, involved no freedom of action, or creativity, but imitation of perfect nature. Thus, there were no terms in ancient Greek that correspond to “to create” or “creator”. In ancient Rome, the Greek concept was partly shaken and visual artists were viewed as sharing, with poets, imagination and inspiration. Under medieval Christianity, *creatio* in Latin was used to designate God’s act of *creatio ex nihilo* (“creation from nothing”), but exempted *creatio* from application to human activities. The Middle Ages, however, went even further than antiquity, relegating poetry’s status to art and was, therefore, considered a craft instead of an expression of creativity.

It was not until the 17th century when Polish poet Maciej Kazimierz Sarbiewski explicitly used the word “creation”. Nevertheless, “creation” was still restricted to poetry.¹⁷ For the next century and a half, the idea of human creativity was met with resistance because the expression “creation” was reserved for divine creation “from nothing”.

The 19th century saw a complete reversal in the position given to art. Not only was art recognised as creativity, but it alone was. At the turn of the 20th century, discussion emerged about creativity in the sciences (eg, Jan Łukasiewicz) and in nature (eg, Henri Bergson).¹⁸ This was taken as the transference, to the sciences and to nature, of concepts reserved for art.

¹⁷ In his treatise, *De Perfecta Poesi*, Sarbiewski not only writes that a poet “invents”, “after a fashion builds”, but also that the poet “creates anew” (*de novo creat*). He even adds, “in the manner of God” (*instar Dei*).

¹⁸ Tatarkiewicz, W. (1980) *A History of Six Ideas: an Essay in Aesthetics*, translated from the Polish by Christopher Kasparek, The Hague: Martinus Nijhoff, pp. 244–249.

With the advent of science, there was an anatomical interpretation to creativity. The human brain is highly complex, consisting of around 100 billion cells that form an elaborate network of some one quadrillion (one thousand million million or 10^{15}) connections that are responsible for every physical and mental activity, both voluntary and involuntary. Structurally, the brain is divided into two hemispheres, left and right. The two hemispheres are cross-wired to control the opposite side of the body. For example, moving the left arm involves the right side of the brain and reading from left to right involves the left brain turning the eyeball from the right hand side. In the past, scientists have always concluded that the left brain was what makes us human because it is comparatively more methodical, rational, analytical and logical. The right brain, in contrast, was much less well regarded, and was thought of as arbitrary, non-linear, brute and instinctive. This perception has changed somewhat as scientists gained better understanding of the human brain. Daniel Pink in his book *A Whole New Mind* offers some brilliant illustrations of how the two sides of the brain work in tandem to yield a more complete scenario. Below is one such illustration:

In most people, language originates in the left hemisphere.... But the right hemisphere doesn't cede full responsibility to the left. Instead, the two sides carry out complementary functions.

Suppose that one night you and your spouse are preparing dinner. Suppose, too, that midway through the preparations, your spouse discovers that you forgot to buy the dinner's most important ingredient. Suppose then that your spouse grabs the car key, curls a lip, glares at you, and hisses, "I'm going to the store." Nearly everyone with an intact brain would understand two things about the words just uttered. First, your spouse is heading to Safeway. Second, your spouse is pissed. Your left hemisphere figured out the first part—that is, it deciphered the sounds the syntax of your spouse's words and arrived at their literal meaning. But your right hemisphere understood the second aspect of this exchange—that the ordinarily neutral words "I'm going to the store" weren't neutral at all. The glare of the eyes and the hiss of the voice signal that your spouse is angry.

Individuals with damage to one hemisphere can't reach this dual conclusion. A person with an impaired right hemisphere ... would hear such comments and understand that the spouse is driving to the store—but would remain oblivious to the anger and annoyance fuelling the trip. A person with an impaired left hemisphere ... would understand that the spouse is miffed—but might not know where the spouse just went.¹⁹

This recognition of non-verbal nuance is one of the things that the right brain excels at, including empathy, graphics, sounds, smell, imagination, intuition, and simultaneous and holistic thinking.²⁰ Incidentally, these attributes are precisely the characteristics of a creative mind. The point is that people often subconsciously overlook the importance of harnessing these attributes associated with the right brain, especially when the logic and efficiencies associated with the left brain are dominant. To use another of Pink's examples, the linear logic of the left brain should dictate that utilitarian objects like dustbins should be cheap and functional. Yet, the marketplace has demonstrated that consumers place a premium on right brain attributes, such as aesthetics and clever design, as evidenced by the popularity of designer dustbins and goods traditionally thought of as mundane or obsolete like the candle.²¹

¹⁹ Pink, Daniel (2005) *A Whole New Mind*, Penguin: New York, p. 20.

²⁰ Pink, Daniel (2005) *A Whole New Mind*, Penguin: New York, chapter 1.

²¹ Business Wire (5 September 2005) "Research and Markets: With US Sales Estimated at \$2.1 billion in 2004, Candles Have a Strong Presence in Both the Air Fresheners Market and Gift/Home Decor Market".

In Asia, where many traditional written languages promote the use of the right brain due to their right-to-left alignment, nuances and indirect references are an integral part of the culture. Asians, therefore, are theoretically more adept at using the right brain as opposed to people of non-Asian cultures. In his book *The Geography of Thought*,²² Richard Nisbett observes the difference between how Asians and Westerners think, and why this difference exists. The Asian mindset, based heavily on the Chinese culture for the purpose of Nisbett's study, is an evolution of ancient, feudal Chinese society, culture and philosophy which conditions native Asians to think more on collective and middle-ground terms. Compared to the Western mindset, which is derived from the ancient Greek ethos of individualism, curiosity and linear thinking, the Asian social and cultural fabric weaves more context and relationships into logic and thinking. Consequently, Asians are not brought up to be confrontational and vocal, but rather lean on traits like being able to listen and perspicacity. Thus, native Asians and to a certain extent even highly localised non-ethnic-Asians are—in theory—more attuned to contextual observation and relational reasoning in line with Kelley's "people-centric innovation". A heavy Asian influence should give rise to "anthropologist", "collaborator" and "caregiver" qualities that are potential primers to creativity and innovation. In other words, despite the fact that individualised expression may not be as encouraged as it is in the West, Asians are not to be seen as creatively disadvantaged or hamstrung by local cultural and social paradigms.

To push this line of reasoning further, given that Asians internalise interactions and knowledge through non-linear and contextual logic, the right-brain attributes should be regularly and thoroughly exercised. Hong Kong, with its idiosyncratic blend of Western and Asian backgrounds, collectively suffers from a dampened connection with the right-brain attributes because of this bi-culture. Yet, the latent potential to strike creative gold is undeniably present, especially since the Asian heritage is, generally speaking, intact. What stands in the way is Hong Kong's mainstream (or local) education system, which focuses on rote learning and equips graduates with overblown abilities associated with the left brain. As a result, the workers churned out by the Hong Kong education system are generally very efficient, organised, logical and quantitative compared to their counterparts elsewhere. Simply put, Hong Kong has achieved its current prosperity largely with its collective left brain. However, while the dominance and brilliance of the left-brain directive has done Hong Kong much good in the past, it is no longer sufficient in keeping the city afloat amidst the torrents of competition. Developing economies are catching up fast on the left-brain front, gaining the ability to produce many of Hong Kong's products and services at lower costs.

Innovation as a Global Economic Driver

If Hong Kong is to stay ahead of its competition, the city will need to exercise much creativity and innovation to find and exploit new opportunities. To see how an economy can migrate toward creativity on a macro scale, it is helpful to reference economies that have faced Hong Kong's situation with price marginalisation before. Quoting Sir George Cox, then chairman of the Design Council of the United Kingdom:

Creativity is the generation of new ideas—either ways of looking at existing problems, or of seeing new opportunities, perhaps by exploiting emerging technologies or changes in markets.

Innovation is the successful exploitation of new ideas. It is the process that carries them through to new products, new services, new ways of running a business or even new ways of doing business.

²² Nisbett, Richard (2003) *The Geography of Thought*, Free Press: New York.

*Design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end.*²³

Cox adds, “Why should we go down the route of a national programme [on creativity]? This is not something that’s meant to be prescriptive. It’s about creating an enlightened self-interest... If everyone does their bit, it will have a ripple effect on the creative economy. Creativity will spread. It’s not something that comes from the top.”²⁴ In other words, creativity cannot be limited to senior management and decision makers. Rather, it should be a collective effort from every level within an enterprise, organisation, institute, society and economy.

Richard Florida, an American academic best known for his study of the “creative class”—a rising generation of creative workers—notes that creativity has to be embraced as “essential to the way we live and work today.”²⁵ Without such recognition, the average worker would only keep repeating his or her tasks, thinking that the big shots should be in charge of innovations and inventions. Moving up the management, the same cycle of thinking can be repeated all the way to the top. If such a passive mentality was the norm, the entire society would have no hope of innovating itself and expecting economic progress.

To achieve universal creativity in an economy, Florida proposes the 3 Ts of economic development: technology, talent and tolerance.²⁶ Technology serves as the enabler for creative minds, or talent, to realise their full potential in transforming creative capital into economic capital. At the same time, tolerance not only creates an environment where creativity is nurtured and outlandish ideas are accepted, it also helps attract talent to add to the city’s diversity and hence creativity. Countries and cities that have managed their 3 Ts well have, in Florida’s empirical study, successfully boosted their creativity and, in turn, the economy.

Moving from the macro-economic level to the enterprise level, creative pioneers like the world-famous design house IDEO offer insights into some traits that underline successful creativity, both in terms of concepts and dollars. To quote Tom Kelley, general manager of IDEO:

At IDEO, we believe that innovators focus on the verbs. They’re proactive. They’re energetic. Innovators set out to create, to experiment, to inspire, to build on new ideas. Our techniques may at times seem unusual, but the results can be truly extraordinary.

*All good working definitions of innovation pair ideas with action, the spark with the fire. Innovators don’t just have their heads in the clouds. They also have their feet on the ground.*²⁷

In examining ten personas that characterise “people-centric tools for innovation”, Kelley finds that adopting one or more such personas “help teams express a different point of view and create a broader range of innovative solutions.”²⁸ A number of traits in these personas stand out as precursors to successful product designs:

²³ Abrams, Hester (2006) “The Future of the UK Rests Not on Its Creative Industries but on the Creativity of Its Industry”, *Design Council Magazine* (Winter 2006) Haymarket: London, Issue 1, p. 7.

²⁴ Lovett, Gina (7 June 2007) “Opening Doors to the Real World”, *Design Week*, p. 9.

²⁵ Florida, Richard (2002) *The Rise of the Creative Class*, Basic Books: New York, p. 21.

²⁶ Florida, Richard (2002) *The Rise of the Creative Class*, Basic Books: New York, chapter 14.

²⁷ Kelley, Tom (2005) *The Ten Faces of Innovation*, Doubleday: USA, p. 6.

²⁸ Kelley, Tom (2005) *The Ten Faces of Innovation*, Doubleday: USA, p. 7.

- 1) Prolonged observation by the “anthropologist” persona on human behaviour, which leads to deep understanding of human interaction with products, services and spaces, is the first step toward good design loved by consumers.
- 2) Relentless experimentation by the “experimenter” persona gives rise to enlightened processes and, on occasion, runaway success.
- 3) The “T-shaped” make-up of the “cross pollinator” persona cultivates breadth of knowledge across fields on top of a depth of knowledge in at least one area of expertise, creating a much wider line of fire in the application of expert knowledge.
- 4) The tenacity of the “hurdler” persona keeps pushing the envelope and outsmarting roadblocks to innovation.
- 5) The gelling skills of the “collaborator” persona bring together unconventional groupings of talents and wins over sceptics to give opportunities to innovations.
- 6) Leadership qualities of the “director” persona draw out the best from a talented group and spark innovations.
- 7) Design talents of the “experience architect” persona create compelling experiences that transcend function so that customers can better connect with the product or service, adding premium in the process.
- 8) Stage setting skills of the “set designer” persona help create a platform on which innovation and performance are enhanced.
- 9) The ready serving attitude of the “caregiver” persona anticipates customer needs and makes them go out of their way to meet them.
- 10) Narrative outflows of the “storyteller” persona reinforce connection between the customer and the product or service, building brand loyalty and imbuing higher values that appeal to human nature.

All these traits bear hallmarks of attributes associated with the right brain as mentioned above. Given Hong Kong’s current economic developmental stage, these attributes associated with the right brain promise to help lift the city’s level of innovation, particularly in terms service which make up the bulk of the economy.

A Finnish study on successful developments in service concepts and service business in the US²⁹ reveals a general pattern in service innovation:

1. The customer is the new reference point, replacing the direct competitors as the dominant reference point for strategy and innovation. In contrast to the product economy, which has more rigid boundaries of channels and competitions, the fluid nature of the service economy introduces: (1) competition from new and unexpected sources; (2) customers that are more informed and more demanding; and (3) opportunities for new, informative-driven business models. Most importantly, the customer experience has become the critical output of the service era. Customers make little distinction between goods and services; instead they are in search of compelling experiences and will reward the companies that provide those experiences with extraordinary loyalty and profitability. Companies such as Starbucks and Google have successfully challenged conventional business wisdom through their uncanny instinct for delivering a compelling, branded customer experience.
2. Changing who does what, with new service concepts that break down traditional boundaries of which party performs a given task in the value chain. In some cases, the company providing the service takes over some part of the customer’s complexity, eliminating distractions for the customer. In other cases, the service provider innovates by having the customer perform roles the company once performed, such as the physical delivery of goods (a product) after a transaction (a service) in the case of eBay.
3. A reliance on IT as the services “factory”, since IT capabilities are critical in commoditising a service innovation. In many ways, IT is the production department of

²⁹ The Finnish Funding Agency for Technology and Innovation (Tekes) (April 2007) *Seizing the White Space: Innovative Service Concepts in the United States*

the service economy in much the same way factories and machines are for the product economy. Besides IT, many successful cases of service innovation leverage the Internet either to directly create innovative new service concepts or to reconfigure the value chain.

Although this may appear to be somewhat of a laundry list steeped in theory, the following national examples will show how they come into play in real life and the differences they have made on a macro scale.

National Successes

Hong Kong's present predicament finds precedence in many other nations. Spain's overcoming of price competition through innovation, Finland's export-oriented economy and focus beyond technology, and South Korea's economic transformation all represent certain facets of Hong Kong's story. Although each nation's challenge is shaped by its own idiosyncratic circumstances and its background, there is a common theme in the need for creativity and innovation in order to differentiate itself from the intense competition. An examination of noted successes will help shed light on the way forward for Hong Kong's reinvention.

Spain

As the ninth-largest economy in the world, Spain has enjoyed an annual GDP growth of above 3% since 2003, outpacing the EU average and surpassing the UK, France, Germany and Italy.³⁰ What used to be known as the laggard in the EU has overtaken its scoffers, thanks to the handsome payoffs of a concerted effort by the Spanish government, enterprises and workforce. By working creatively with current resources and advantages, the Spanish have produced a very impressive growth spurt that has managed to keep at bay some of the country's shortcomings, including low labour productivity.

One of the most apparent examples of Spanish creativity is prêt-à-porter fashion—Spain is home to leading retailers Mango and Zara. Mango has more than 1,000 stores in 89 countries, fed by garments that speed through its logistics centres at a rate of 30,000 an hour. Using a business model based on franchises, Mango completely outsources its production to Asia; and its sophisticated IT and logistics systems put goods on the shelves in ten days on a sale-or-return policy. Mango's main foci, therefore, are garment design and distribution, both of which require minimal low-level input but instead demand a lot of creativity and high-level input. Zara, on the contrary, retains the bulk of its production to form a high-speed design-to-product mechanism that takes merely 15 days to put a new design on the shelf (as opposed to the traditional set up that can take up to nine months). What makes this ultra efficient fashion production even more formidable is that feedback is constantly flowing from sales channels to the larger-than-average design team, which churns out brand new or altered designs at breakneck speeds to capture and cater to customer tastes. In another departure from norm, Zara does not run a single advertisement, instead channelling the resources to open up new stores.

Spain is also known to be very friendly toward new businesses and foreign investments. In addition to an attractive tax system, Spain offers the most favourable fiscal incentives in the EU for R&D for large companies.³¹ Consequently, the amount of resources Spanish companies are pouring into R&D has been outpacing the European average, with

³⁰ INTERES (Invest in Spain) "Attractive Economy", http://www.interes.org/icex/cda/controller/interes/0,5464,5322992_5334749_5334928_0,00.html (accessed 17 September 2007).

³¹ INTERES (Invest in Spain) "Attractive Economy", http://www.interes.org/icex/cda/controller/interes/0,5464,5322992_5334809_5334951_0_0,00.html (accessed 17 September 2007).

Farmaindustria, a leading industry researcher in pharmaceuticals, reporting a 14% annual growth for all industrial sectors combined in 2004.³² While such emphasis on R&D has not translated to stellar patent outputs to match patent giants like the US, it has nevertheless led to considerable breakthroughs and publications. More importantly, it introduces an innovative streak in the culture, such that the Spanish people have come to expect innovation as part of business and life in general. That is one of the potential reasons behind Spain's entrepreneurial drive: Spain is fourth in Europe for company creation. The average Spanish entrepreneur has also been getting younger and is more educated (39% are graduates). As high as 39% of entrepreneurs in Spain are female, the highest percentage in the EU, which is attributed to the efforts being made by public institutions to foster the activities of businesswomen. Another point of note for Spanish entrepreneurship is that as many as 83.5% of new companies are founded on opportunity as opposed to necessity, which means that people are starting businesses not because they are out of other options but because they see genuinely profitable and accessible market niches.³³ This is direct evidence that the Spanish population is actively introducing creativity into business and commerce, probing and exploiting gaps in the market to build sustainable enterprises.

One of the major areas from which Spanish businessmen have been profiting is tourism. In 2006, Spain welcomed over 46 million leisure tourists, who spent over €30 billion in the country.³⁴ By estimates of Spain's National Statistics Institute, tourism contributes around 11% to the country's GDP, a much higher level compared to other EU countries such as the UK (where the corresponding figure is around 4%³⁵). Yet, it was only at the turn of the century when Spain knocked France off the second place in the global ranking for tourism (the first being the US). With the two European neighbours being similar in size and sharing a reputation for shorelines, Spain has employed creativity to gain an upper edge in appealing to tourists. Firstly, Spain established Tourspain as the national tourism marketing body, superseding scattered promotion efforts by individual cities and regions. Initially, Tourspain positioned Spain as a country of many interesting contrasts: "Everything under the sun." To coincide with Salamanca being the European Capital of Culture and Spain's presidency of the EU in 2002, Tourspain then shifted focus to cultural tourism, with a multi-faceted drive to present Spain as a country rich in history, tradition and culture in a two-year programme. Following this new, cultural strategy and working with the Ministerio de Asuntos Exteriores (Spanish Foreign Office), the Spanish embassies overseas set out to shape an image of Spain in the minds of foreign visitors before they visited the country. The Spanish embassy in London, for example, hosted a series of modern art exhibitions, modern dance events and music concerts featuring works by 19th century Spanish composers. Tourspain has also launched an aesthetically impressive website loaded with tools designed to help users plan their visit to Spain, whether they are first-time or repeat visitors. There is an extensive database describing the main cities, towns and even obscure villages dotting the countryside, providing information on places of interest, accommodation and transport. The site also has links to websites of the individual regions within Spain, thus synergising national and regional tourism marketing. Secondly, Spain continuously reinforces its status as home to some of the world's great art. For classical art, Madrid's Museo del Prado boasts a world-class collection of paintings. Within walking distance is the Museo Thyssen-Bornemisza, which houses works of famous painters such as Monet, Picasso, Rembrandt, Renoir and Van Gogh. These two museums, together with the adjacent Museo Reina Sofia that is dedicated to 20th century art, form the Golden Triangle of Art. Opening to much fanfare in 1997, the Museo Guggenheim Bilbao houses modern and contemporary art as well as themed

³² Farmaindustria (2005) "Annual Report".

³³ INTERES (Invest in Spain) "Attractive Economy", http://www.interes.org/icex/cda/controller/interes/0_5464_5322992_5325166_5335262_569674_0_00.html (accessed 17 September 2007).

³⁴ Institute for Tourist Studies (I.T.S.), <http://www.iet.tourspain.es> (accessed 17 September 2007); Ministry of Industry, Tourism and Trade of Spain, <http://www.mityc.es/en-US/index.htm?Cultura=en-US> (accessed 17 September 2007).

³⁵ Star UK, Statistics on Tourism and Research, <http://www.staruk.org.uk/default.asp?ID=532&parentid=512> (accessed 17 September 2007).

exhibitions. The museum's signature deconstructivist exterior has elicited much public interest and has been widely credited with single-handedly putting Bilbao on the map, turning a formerly obscure city into a tourist magnet. Spain has produced some of the most important artists of the 20th century (Dali, Picasso) and is home to world-famous architects (Calatrava, Moneo), musicians and fashion designers, whose works have impressed residents and tourists alike. The Spanish are so serious about art that they have even turned food into an art form. El Bulli, hailed by many as singularly the best restaurant in the world, constantly surprises the palette with molecular gastronomic inventions, such as "air of carrot" and "butter ravioli wrapped in a gelatine of marine water". Closed for six months in a year, the three-Michelin-star restaurant dispatches its chefs around the world for inspiration and experimentation on new food preparation and presentation techniques. The astounding culinary sensations have kept the restaurant's waiting list to above an entire year.

By taking advantage of the combination of creative vibrancy, tolerance, infrastructure, competitive cost of living, rich lifestyle and good food, Spain has created a favourable environment not just for home-grown creativity but also for attracting creative talents from abroad, satisfying the 3 Ts model suggested by Florida for building a creative economy.³⁶ As a result, Spain's immigrant population exploded by over 140%, totalling above 0.8 million in 2006, in the six years since the turn of the century.³⁷ The relatively low costs in comparison to leading European nations made Spain an attractive place to settle and invest in back when the country first joined the EU. In recent years, however, the accession of Eastern European countries such as Romania and Bulgaria has meant that Spain no longer retains its edge on price competition. This mirrors Hong Kong's integration with Mainland China, where prices are often much lower. Spain's success story in harnessing creativity to create a vibrant economy serves as an excellent example for Hong Kong's next stage of development.

Finland

Finland, a country over 300 times larger than Hong Kong yet with a population of only 5.3 million, is the world's second-most competitive economy according to the World Economic Forum.³⁸ For a developed nation with scarce natural resources, Finland has managed to produce a staggering 6.3% jump in GDP in 2006,³⁹ well above the EU average and very close to the best performing developing nations. Yet, things were not always rosy. As recent as the early 1990s, Finland was reeling from a depression brought on by a combination of collapsed demand from Western markets and severance from the Russian hinterland after the Soviet Union fell. This forced the Finnish economy into a structural change, which led to the unemployment rate hanging above the 9% mark until 2003.⁴⁰

No narrative on Finland is complete without its most famous brand—Nokia. As of the second quarter of 2007, Nokia was the world's largest mobile communications manufacturer with a 38% global market share.⁴¹ The scale of Nokia in relation to its country of origin is such that in 2000, Nokia accounted for 3.3% of the value of the Finnish GDP, contributing 1.9 percentage points to the Finnish GDP growth. Nokia also exported 24% of the total value of Finnish exports the same year.⁴² Mirroring the situation of its native Finland, Nokia was entrenched in a deep struggle in the early 1990s when Jorma Ollila, currently the chairman, took over as CEO. Still shouldering the legacy of its earlier days, Nokia was involved in

³⁶ Florida, Richard (2002) *The Rise of the Creative Class*, Basic Books: New York, chapter 16.

³⁷ Instituto Nacional de Estadística (2007), "Migrations: Residential Variation Statistics 1997–2006" <http://www.ine.es/inebase/cgi/um?M=%2Ft20%2Fp307&O=inebase&N=&L=1> (accessed 17 September 2007).

³⁸ World Economic Forum (2007) "The Global Competitiveness Report 2006–2007".

³⁹ Statistics Finland (2007) "National Accounts", http://www.tilastokeskus.fi/tup/suoluk/suoluk_kansantalous_en.html (accessed 20 September 2007).

⁴⁰ Statistics Finland (2007) "Labour Market", http://www.tilastokeskus.fi/tup/suoluk/suoluk_tyolama_en.html (accessed 20 September 2007).

⁴¹ Nokia (2007) "Nokia in the Second Quarter 2007", <http://www.nokia.com/2007/Q2/index.html> (accessed 20 September 2007).

⁴² Research Institute of the Finnish Economy (2001) *The Role of Nokia in the Finnish Economy*, www.etla.fi/files/940_FES_01_1_nokia.pdf (accessed 20 September 2007), p. 73.

many unprofitable lines of business [see **Exhibit 5**]. Apart from spinning off the unprofitable businesses, Nokia also had to deal with challenges facing its profitable businesses. The collapse of traditional markets such as the Soviet Union meant that Nokia had to look for alternate markets in the West. The timing could not be better because even though the West was still wrestling with recessions, the telecommunications market was quickly deregulating, opening up new market spaces that Nokia could enter. In addition, Nokia recognised the importance of reaching out to Asia and Latin America. In 1994, the Finnish company radically switched from Finnish to English for its board meeting minutes. Small as the move was, it carried a significant symbolism that reverberated throughout the company, creating an outward-looking and customer-reaching mentality.

At the same time, Nokia worked with mobile phone service operators in popularising the mobile phone when it was previously available only to a privileged few as an in-car equipment. The creative ability to try out a potentially unfavourable partnership with operators helped Nokia achieve considerable penetration, even in the face of competition from industry giant Motorola. Again, Nokia flexed its creativity muscle and came up with the model 101 to break into the US market. The lower cost, better design and ease of use quickly gained favour from consumers and operators alike, including market leader AT&T.

As technological progress decreased the price and size of the mobile phone, consumers started demanding more than just functionality. The mobile phone morphed into a personal accessory that reflected individuality and style. Turning to design professionals, Nokia began paying more attention to elements of design and fun on top of their traditional emphasis on functionality. Frank Nuovo, Nokia's chief designer at the time, went to such lengths as keeping an office and studio at his home in California, thousands of miles away from headquarters in Finland, just to maintain an "outsider's view."⁴³ In 1995, Nokia set up the "Nokia Design Center" in Los Angeles, where young designers from art schools were recruited to join teams in releasing "cool" handset designs.

However, design is more than skin deep. In the mid-1990s, Nokia found itself overstretched by the breakneck growth, with production and logistics problems denting profits. Nokia's designers then set to work on shaving the number of parts in their phones, and the result was that production time was cut down to as much as one-tenths, which helped solve the production problems. In solving the logistics problems, Nokia revamped its inventory controls and replaced central procurement with regional, more flexible operations, especially since Nokia's operations had become so large that economies of scale were sufficiently achieved even on the regional level.

Ultimately though, Nokia's phenomenal success is backed by an overwhelming dedication to R&D and innovation. In the early 1990s, even in the midst of depression and economic restructuring, Nokia was devoting upwards of 6% of its sales to R&D. As Nokia ballooned along with the industry, its R&D expenditure and percentage also skyrocketed. In 1991, Nokia's R&D expenditure was Finnish Markka (FIM) 1.2 billion,⁴⁴ which was around 6% of sales.⁴⁵ In 2005, R&D expenditure was a staggering €3.8 billion or 11.2% of sales.⁴⁶ Interestingly, of the more than 28,000 (over one-third of total workforce) researchers Nokia hires, only around 1,100 work in the six sites operated by Nokia Research Center ("NRC").⁴⁷ The rest are spread among the 26 countries in which Nokia's research has presence, so as to absorb local knowledge and adapt NRC's research to the market with greater efficiency. In addition, many of Nokia's R&D facilities are strategically located within walking distance of

⁴³ Häikiö, Martti (2001) *Nokia: The Inside Story*, Pearson Education: UK, p. 161.

⁴⁴ The conversion rate for the Finnish Markka was €1 = FIM5. 94573.

⁴⁵ Steinbock, Dan (2001) *The Nokia Revolution: The Story of an Extraordinary Company That Transformed an Industry*, Amacom: New York, p. 201.

⁴⁶ Nokia (2007) "Overview", http://www.nokia.com/link?cid=EDITORIAL_4069 (accessed 21 September 2007).

⁴⁷ Nokia (2007) "Research", http://www.nokia.com/link?cid=EDITORIAL_4070 (accessed 21 September 2007).

universities, especially those closely connected with Nokia, echoing Florida's view on universities as creative hubs.⁴⁸ True to its emphasis on R&D, Nokia integrates R&D into the entire corporate process, encouraging interaction between R&D and other functional units—even personnel rotation! Nokia has also been actively engaged in both upstream and downstream innovation, such as pioneering software platforms and consumer engagement. To that end, Nokia not only benefits its business but also provides new standards for the good of the wider industry.

Despite Nokia's global outlook, it has consistently filled its ranks—both in general management and specialised research—with high calibre individuals of Finnish origin. This forms a powerful testimony in favour of the Finnish education system, which is described as an egalitarian Nordic system and where the first nine years of schooling have been compulsory since the 1970s. Not only is tuition free for full time students between the ages of seven and 16, healthy meals are also free for pupils in the primary and secondary levels. Apart from vibrant collaborations between libraries, schools and publications, Finnish television programming is also thought to positively influence reading literacy since foreign programmes are always subtitled instead of dubbed. Given these initiatives, it is not surprising that in order to achieve such superior results Finland has no need to spend an exorbitant amount of resources on education, especially in comparison to other mature economies. According to the Organisation for Economic Co-Operation and Development's ("OECD") latest statistics, Finland spent 6.1% of its GDP on educational expenses in 2003, close to the OECD average of 6.3%. Annual expenditure per student in public school amounts to only US\$7,500, again close to the OECD average, whereas the US spends up to US\$12,000 per student.⁴⁹

One element that sets the Finnish education system apart is its emphasis on the teaching profession. Teachers have to have a master's degree in pedagogy or their teaching subject. In recognition of their professional capabilities, teachers are given a high degree of autonomy by the education system in drawing up class content and using their own style of teaching. Finnish schools are also equipped with a teachers' lounge to promote professional and social exchange among teachers. Hence, teaching is a highly regarded profession in Finland and competition for university places for teaching is high. At the tertiary education level, Finland goes by a parallel system of 20 universities and 29 polytechnics. Up to one-third of the student-age population in Finland attend universities, which emphasise research and theory, and most graduates are at the master's degree level.⁵⁰ Meanwhile, polytechnics focus on practical skills, and degree studies are free of charge for students. Both university and polytechnic education stress a multi-disciplinary approach, exposing students to a breadth of study fields. Consequently, the combination of a small population and the ubiquity of tertiary education institutions has produced a high percentage of tertiary graduates in the Finnish population. Moreover, these graduates are trained in multiple disciplines and exposed to a breadth of subjects. The result is a rich stock of high quality graduates that can readily contribute to the Finnish economy and harness creative business ideas.

Thus, Finland has shown that with quality and creativity, even a small population that does not constitute a credible domestic market can produce a global, gigantic enterprise built upon phenomenal export capabilities. This should serve as an inspiration to Hong Kong and its business community because it shows that the lack of a sizable domestic market is no excuse for not investing in branding and creativity. Wherever there are brilliant business ideas, creativity and innovation will ensure that production capabilities and other resources are there to get the ball rolling. Nokia has proven that in the absence of substantial public sector

⁴⁸ Florida, Richard (2002) *The Rise of the Creative Class*, Basic Books: New York, p. 291–293.

⁴⁹ Programme for International Student Assessment (PISA) "Educational System: Background Information", http://www.pisa2006.helsinki.fi/finnish_school/educational_system/educational_system.htm (accessed 24 September 2007).

⁵⁰ Finnish Board of Education (4 May 2006) "Universities", <http://www.edu.fi/english/pageLast.asp?path=500.4699.4836.4837> (accessed 24 September 2007).

support, the private sector can spearhead many initiatives, especially on R&D, that can outperform public institutions.

South Korea

South Korea, the third-largest economy in Asia and the eleventh-largest in the world in nominal GDP,⁵¹ has enjoyed one of the fastest rates of prolonged economic growth in history from the mid- to late 20th century. The country's GDP per capita has grown from only US\$100 in 1963 to US\$24,500 in 2007.⁵² This phenomenon has been referred to as the "Miracle on the Hangang River". The South Korean heavy industry blossomed during the 1970s and 1980s, helping the economy to reach maturity in the 1990s even as exponential growth slowed to a robust rate averaging 6.5%. The rapid economic growth in the late 1980s was further boosted by Seoul's hosting of the 1988 Summer Olympics and South Korea's co-hosting of the 2002 FIFA World Cup with Japan. Meanwhile, the service sector has overtaken manufacturing to become the top GDP constituent at around 52%.⁵³ With Korean wages having increased considerably in the four decades since the 1960s, labour-intensive industries have relocated to regions with cheaper labour, such as Mainland China, Vietnam and Indonesia. In 1996, South Korea became a member of the OECD, a milestone in its development history and testament to its prosperity. However, the Asian financial crisis of 1997–1999 exposed longstanding weaknesses in South Korea's development model, including high debt-to-equity ratios, massive foreign borrowing and an undisciplined financial sector. The country's GDP plunged by 6.9% in 1998, but then quickly recovered by 9.5% in 1999 and 8.5% in 2000. Growth fell back to 3.3% in 2001 due to the slowing global economy, falling exports and the perception that much-needed corporate and financial reforms had stalled. Led by consumer spending and exports, growth rebounded in 2002 with an impressive 7% despite global anaemic growth. Between 2003 and 2006, growth moderated at about 4–5%, when a downturn in consumer spending was offset by rapid export growth.

One of South Korea's top contemporary exports is entertainment. Dubbed the "Korean wave", it refers to the recent surge of popularity of South Korean popular culture in other countries, especially among Asian countries. The term itself is already creative, as its pronunciation in Korean, "Hallyu" (한류), is a homophone for "cold front" in Korean and Chinese. The Korean wave began with the export of Korean TV dramas such as *Winter Sonata* and *Jewel in the Palace* across East and South-East Asia. Debuting in January 2002 on Korean TV network, KBS, *Winter Sonata* was the second instalment of the four-part drama series, *Endless Love*. It quickly caught on both in the domestic and overseas markets, catapulting its main cast to regional stardom, most notably in Japan, overcoming historical tensions between the two neighbouring nations. *Jewel in the Palace*, or *Dae Jang Geum*, has experienced massive success across Asia, from China and Hong Kong, to Thailand and Indonesia, and even as far as Iran and Brunei. First shown in South Korea in September 2003, it quickly went on to smash many viewership records. Despite touting a similar theme to *Oshin*, a masterpiece Japanese drama made 20 years earlier, *Jewel in the Palace* struck gold by telling a story of perseverance, integrity and ultimate prevalence. Almost all of the dubbed or localised versions of the show's theme song also dominated their respective local pop music charts.

The growing success of Korean television drama was matched in the fields of movies and popular music. *My Sassy Girl*, a 2001 movie based on a story told through a series of love letters posted online, was one of the most successful South Korean movies at the box office, both domestically and abroad. A Hollywood remake is set to be released in 2008. Besides

⁵¹ NationMaster, "Korean Economy Statistics", <http://www.nationmaster.com/country/ks-korea-south/eco-economy> (accessed 24 September 2007).

⁵² CIA World Factbook (2007) "Korea, South", <https://www.cia.gov/library/publications/the-world-factbook/geos/ks.html> (accessed 24 September 2007).

⁵³ CIA World Factbook (2007) "Korea, South", <https://www.cia.gov/library/publications/the-world-factbook/geos/ks.html> (accessed 24 September 2007).

commercial success, South Korean films have also garnered serious international recognition, with *Oasis* finishing second at the 2002 Venice Film Festival and *Oldboy* earning the Grand Prix at the 2004 Cannes Film Festival. The South Korean film industry, like its Hong Kong counterpart, went through lean years in the early 1990s despite gradual relaxation of censorship by the government. Towards the end of the 1990s, the South Korean film industry quietly transformed itself into one of the healthiest film industries in the world. Major conglomerates started to enter the industry, and in time transformed the structure of the business by introducing a vertically integrated system whereby the financing, production, exhibition, distribution and video release of films were all controlled by a single company. Although many of these conglomerates including Samsung dropped out of the industry after the financial crisis, major conglomerates such as CJ, the Orion Group (Showbox) and Lotte have remained the most powerful players. South Korea also produces a broad spectrum of movies, from big-budget blockbusters to independent films to creative hybrids of different genres. By avoiding dependence on any particular style, director or star, South Korean films have achieved a high level of economic and artistic clout. Hopping from real life action to animation, South Korea has also established a reputation for being a super-factory of animé, pumping out American productions like *The Simpsons* and Japanese hits such as *Naruto*.

Another facet of South Korea's entertainment dominance is pop music. Better known as K-pop, it borrows elements from English pop, though with an exponential bubblegum element. Heavily influenced by Western mainstream culture, South Korean pop culture consumers also favour styles such as R&B, dance and hip-hop. K-pop's success, as highlighted by artists such as BoA and Rain, can be attributed to the artists' own talent and the industry's ability to capture and package these talents. BoA herself is multi-lingual, a rare asset among South Korean singers, and has launched her career in Japanese and English markets, while Rain is as much a dancer as he is a singer, having studied R&B and hip-hop dancing since sixth grade.

In summary, the success of the "Korean wave" boils down to a creative tapping of market niches that have been lying dormant, be they old drama themes or song-and-dance routines. That is not to say there is little creativity or input involved; rather, it has to do with a creative repackaging of tried-and-tested old favourites and, of course, a keen eye to spot them. The government's integrated approach to promoting life-style related industries under a single Ministry has undoubtedly contributed to the success of the Korean entertainment industry, which as a side benefit has generated significant multiplier effects on related industries, such as fashion and cosmetics.

Another jewel in the crown of South Korea's economy is consumer electronics. The meteoric rise of consumer electronic giants such as Samsung and LG bear testimony to the country's leadership in the industry. Samsung's expansion resembles that of Nokia's in many ways, especially in its accomplishments in upstream and downstream innovations. Having overtaken Motorola as the world's second-largest mobile phone manufacturer, Samsung continues to invest heavily in R&D, devoting 9.5% of sales or 5.6 trillion Won in 2006⁵⁴ on top of collaborating with IDEO. Samsung has also pledged to increase R&D personnel by around 20% each year, such that the R&D workforce will surpass 50,000 or over 30% of the entire workforce by 2010.

This coincides with the South Korean government's massive drive to launch the country into the technological stratosphere. At the turn of the 21st century, predicting that the internet would become an important factor in the global economy, the South Korean government poured in public funds to support the native IT industry, led by flagships Samsung and LG. Success was seen at home with the development of DMB and WiBro technology, and abroad

⁵⁴ Samsung (2007) "Company Profile: R&D Investment", http://www.samsung.com/us/aboutsamsung/companyprofile/researchanddevelopment/CompanyProfile_RDinvestment.html (accessed 25 September 2007).

with Korean IT products and services capturing market share in key sectors such as semiconductors. South Korea's high-tech success builds on a fruitful focus that began as the economy rose from the ashes after the financial crisis, and the result was an internet explosion that saw South Korea leapfrogging the US.⁵⁵ As the world's most net-addicted nation, it is no surprise that South Korea is home to one of the largest online games markets, estimated to be worth more than US\$1 billion.⁵⁶ In addition to IT, the South Korean government is shifting focus to the robotics industry. With an aim to becoming the "World's Number 1 Robotics Nation" by 2025, there are plans to put one robot in every household by 2020.⁵⁷ All the while, South Korea has been luring top scientists and researchers from around the world, especially ethnic South Koreans that moved abroad earlier to advance their careers. The emphasis on research talent is doubled with native institutions, such as Pohang Institute of Science and Technology, which aim to nurture future scientific and technical leaders at home.

Creative and innovative macroeconomic successes are many around the globe. Yet they all tell the same story: that as long as there is creativity and innovation involved, even the worst performing economies can be turned around in breakneck speeds. Even if these stories do not provide immediate solutions to Hong Kong's drive toward a creative economy, they should at least suffice as inspirations and illumination.

Hong Kong's Creativity and Innovation Scene

Both the Hong Kong government and related agencies have, like their counterparts in many countries, been supporting the creative and innovation scene locally.

Established in 2001, the Innovation and Technology Commission ("ITC") is tasked with "spearhead[ing] Hong Kong's drive to become a world-class, knowledge-based economy."⁵⁸ To accomplish this mission, ITC supports applied R&D and technology transfer and application. It fosters an innovation and technology culture in the community, promotes technological entrepreneurship, provides technological infrastructure and facilitates the development of human capital to support innovation and technology. ITC also promotes internationally accepted standards and conformity assessment services. Believing that innovation and technology add value to products and services and enhance competitiveness of our industries, ITC manages several fund schemes, most notably the Innovative Technology Fund ("ITF") and the DesignSmart initiative. The ITF was set up in November 1999 with an initial injection of HK\$5 billion. At the end of October 2006, the fund had received a total of 2,752 applications requesting HK\$14.8 billion in funding. Of them, 884 (worth HK\$2.6 billion) have been approved. Most of the funded projects relate to IT (32%), electrics and electronics (24%), and manufacturing technology (15%). The HK\$250 million DesignSmart Initiative, launched in June 2004, aims to strengthen government support for design and innovation, and to promote wider use of design and innovation in industries to help them move up the value chain. It comprises two main elements: 1) financing a design support programme and 2) setting up the InnoCentre as a one-stop shop for the design community. The design support programme finances projects in four categories: design research, design/business collaboration, continuing education for design professionals, and promoting and honouring design excellence. The InnoCentre aims to create and sustain a cluster of high-value-added design activities among design professionals, interns and companies, where

⁵⁵ News.com (28 July 2004) "South Korea Leads the Way", http://www.news.com/South-Korea-leads-the-way/2009-1034_3-5261393.html (accessed 25 September 2007).

⁵⁶ Pearl Research, "Games Market in Korea", <http://www.pearlresearch.com/products/Kr06web.html> (accessed 25 September 2007).

⁵⁷ National Geographic (6 September 2006) "A Robot in Every Home by 2020, South Korea Says", <http://news.nationalgeographic.com/news/2006/09/060906-robots.html> (accessed 25 September 2007).

⁵⁸ Innovation and Technology Commission, The Government of the Hong Kong Special Administrative Region (2005) "Our Mission", <http://www.itc.gov.hk/en/about/mission.htm> (accessed 27 September 2007).

creative ideas with functionality will be stimulated, nurtured, researched, promoted, commercialised and branded.⁵⁹

Besides ITC, Hong Kong has a number of institutions involved in promoting design and innovation. TDC, the city's de facto external trade promoter, has long been urging its clientele of Hong Kong companies, especially small- and medium-sized enterprises ("SMEs"), to move up the value chain with design and branding. On the technological front, The Hong Kong Science and Technology Parks Corporation ("HKSTPC"), established in May 2001, offers one-stop infrastructural support services to technology-based companies and activities. It provides a comprehensive range of services catering to the needs of industry at various stages, ranging from nurturing technology start-ups through an incubation programme, providing premises and services in the Science Park for applied R&D activities, creating and sustaining a design community in the InnoCentre, to providing land and premises in the industrial estates for production. Hong Kong Applied Science and Technology Research Institute Company Limited ("ASTRI"), set up in January 2000, specialises in technological transfers of R&D to industry for commercialisation. There is also Cyberport, a US\$2 billion landmark project developed on a 24-hectare site in southern Hong Kong Island to create an interactive environment. It houses about 100 IT companies and 10,000 IT professionals. On the most artistic side, the Hong Kong Arts Development Council ("ADC") promotes and supports the broad development of the arts. As a link between the government, arts sector and the public, the ADC facilitates artistic creation and exchanges with mainland and overseas counterparts, enhances the artistic milieu in the community and assists arts groups in reaching out. The Hong Kong Design Centre ("HKDC") was founded in 2001 through the concerted efforts of local design professionals and the government. The non-profit organisation holds year-round seminars, workshops and conferences to promote awareness of the value of design and the use of design in business and industry, while upgrading the business and design expertise of design professionals and students. HKDC promotes design excellence and awareness by organising prestigious design award schemes and exhibitions. Partnering with HKSTPC, HKDC contributes to building InnoCentre's facilities for design tenants and incubating design start-ups. Besides providing professional input to the admission of tenants and incubatees to the InnoCentre, HKDC also coaches the latter. The ultimate aim is to elevate Hong Kong's profile as an innovative and creative hub.

In support of the efforts undertaken by these institutions, the Chief Executive of Hong Kong, Donald Tsang, in his policy address for 2006–2007, pledged to create favourable conditions for Hong Kong to upgrade its economic infrastructure to support independently innovative and high-value-added industries, covering IT, technology, cultural and creative industries. Tsang added that cultural and creative industries are indispensable in a world-class financial and trade centre, making explicit reference to the Hong Kong film industry that was to receive special attention in the form of a Film Development Council. To get the job done, he said:

*To develop cultural and creative industries, we need to attract worldwide creative talent to Hong Kong. To this end, we need to offer not just the prospect of development but also a city with the appropriate cultural atmosphere. Hong Kong is a vibrant city with a diversified and liberal cultural life, where the East and West meet.*⁶⁰

Despite many efforts and pledges, certain obstacles and limitations have kept creativity and innovation from blossoming in Hong Kong.

⁵⁹ Information Services Department, Hong Kong Special Administrative Region Government (November 2007) "Hong Kong: The Facts", <http://www.gov.hk/en/about/abouthk/factsheets/docs/technology.pdf> (accessed 27 September 2007).

⁶⁰ 2006–07 Policy Address of the Chief Executive of Hong Kong (11 October 2006) "City of Culture and Arts", <http://www.policyaddress.gov.hk/06-07/eng/p31.html> (accessed 27 September 2007).

Roadblocks to Creativity and Innovation in Hong Kong

For a city steeped in a culture obsessed with efficiency, Hong Kong has always gone by a “more is better” concept. This logic is reflected in the common practice for Hong Kong businesses to try to cram as much technological gimmickry into a product or service and mistaking that for innovation. Yet even Nokia, as technologically advanced as it is, understands that innovation is much more than just technology. With retail consumers taking the lead from business users in contributing to the mobile phone market’s growth, Nokia realised that “design began to reign over function.”⁶¹ Technologically based functions and features could no longer help Nokia differentiate itself from the competition. Instead, Nokia listened to how consumers look for both aesthetic appearance and ease of operation in their mobile phones. In no time, Nokia turned to design to create a distinctive look and feel for its products. Of course, technology could hardly be factored out, as more advanced technologies were needed to realise better-looking and user-friendly designs. The difference, however, is that technology is just part of the equation instead of the whole. This new dynamic is also reflected in Nokia’s marketing campaign, where the focus has shifted from being driven by engineering and technical features to communicating emotional benefit, user-centric design and ease of use.⁶² Therefore, as important as technology is to development and design, it hardly stands for innovation in itself. Success in innovation must be more multi-dimensional and multi-faceted than mere technological advancement or clustering alone.

Another antiquated mentality among Hong Kong businesses is that design is a costly addition to basic production and services, rather than an indispensable and integrated process. Given the paramount importance Hong Kong businesses attach to profitability, design easily becomes a target for cost trimming. What is being overlooked, however, is the potential for design to generate better and more sustainable profits. Henry Tang, in his capacity as Secretary for Commerce, Industry and Technology of the Hong Kong government, had noted in one of his speeches:

*The prowess of design is evidenced by some interesting statistics which I would like to share with you. According to research by a London Business School economist, Andrew Sentance, an extra 1% of turnover spent on design and product development will increase a company’s profit and turnover by 3–4% over a period of five years. Design is an investment in the future, not expenditure foregone.*⁶³

The abundance of quality products flooding markets worldwide has meant that good quality and reasonable prices are becoming standard or something to be expected. As Hong Kong finds itself marginalised in the price competition, the move to higher margins and value chain positioning becomes increasingly vital. This is where design can play a pivotal role in differentiating Hong Kong from the competition, in just the way that electronics fashionista, Sony, rationalises its foray into super-luxury electronics.⁶⁴ The design and resulting customer experience is the precursor to brand premium and, ultimately, loyalty. Leading global athletic brand, Nike, for example, used to make around US\$25 for every pair of sports shoes they sold to retailers for up to US\$70. By contrast, the non-branded manufacturer that supplied Nike the finished products could only charge US\$30.⁶⁵ Hence, Nike was able to pocket almost double

⁶¹ Steinbock, Dan (2001) *The Nokia Revolution: The Story of an Extraordinary Company That Transformed an Industry*, Amacom: New York, p. 268.

⁶² Steinbock, Dan (2001) *The Nokia Revolution: The Story of an Extraordinary Company That Transformed an Industry*, Amacom: New York, p. 282.

⁶³ On the Record—News.gov.hk (15 July 2003) “Design Enhances our Competitiveness”, address by Secretary for Commerce, Industry and Technology of Hong Kong, Henry Tang, <http://www3.news.gov.hk/ISD/ebulletin/en/category/ontherecord/030715/html/030715en11001.htm> (accessed 28 September 2007).

⁶⁴ International Herald Tribune (17 April 2004) “Sony ‘Luxury’ Line: Not Just About the Price”.

⁶⁵ Katz, Donald (1994) *Just Do It: The Nike Spirit in the Corporate World*, Random House: New York.

the cost of the shoe simply by virtue of its brand name, which was built upon its streams of cutting-edge designs. Design can also be applied to services. The advent of Apple's iPod has changed the online music retailing landscape, as seen in the newfound dominance of the complementary iTunes music e-tailing service. By designing iTunes to offer unrivalled compatibility with the ubiquitous iPod, online music shoppers are persuaded to purchase their music from iTunes rather than from competing services.

Hong Kong has traditionally been a trading economy, playing the middleman in commerce ranging from contracted manufacturing (original equipment manufacturing or OEM) to freight forwarding and financial arbitration. As a result, Hong Kong businesses have not had much refinement at either end of the product cycle, ie, product design and consumer contact. Referring to Tom Kelley's ten personas characterising "people-centric tools for innovation", the first criterion of product innovation is insight into consumer behaviour through anthropological observation. Since many Hong Kong businesses have not been fully accustomed to interacting with or even observing end consumers, both impetus and clue for innovation are underdeveloped. Without these precursors to innovation, Hong Kong businesses not only lack the ability to innovate themselves, they also have immaterial contribution to both upstream and downstream areas. Status quo therefore sets in, while the rest of the world continues to progress.

The traditional role of Hong Kong businesses hamstrings the innovation process in more ways than one. Hong Kong's business community perfected its business models during Hong Kong's meteoric economic rise from the 1960s to 1990s. Many of the business practices that contributed to the successful models became set in stone due to their effectiveness. However, as times progressed and business environments morphed, many of these old business practices became obsolete and an impediment to change. The generation that put these practices in place often lacks awareness that current times call for fresh ideas, while the younger generations are hesitant to call for change for fear of jeopardising their own advancement. Thus, status quo is perpetuated as Hong Kong's edge wears out. On the contrary, Hong Kong's neighbours, who have more recent histories of development, including Mainland China, do not share the same legacy. With few set practices to work with, newer economies are less constrained in embracing alternatives and radical ideas, and are thus able to leverage innovation to economically leapfrog Hong Kong. For example, an international market researcher has commented that Mainland Chinese companies are more receptive to trying the latest market research methodologies than Hong Kong companies that have long been exposed to market research. Likewise, Hong Kong-based advertising agencies that have been recently admitted into Mainland China under the Closer Economic Partnership Arrangement ("CEPA") scheme have also found greater creative space in the newly opened market. These agencies find that Mainland Chinese clients are much more open to new and edgier methodologies and messages, whereas in Hong Kong, the norm takes too much precedence.

Much of this conforming mindset can be attributed to a combination of the traditional Chinese mentality and the Hong Kong education system. The traditional Chinese mentality is largely based on Confucianism, which stresses ritualistic hierarchies and role diligence. In other words, subscribers are encouraged to stay within the confines of their social role. In the case of a subordinate, disobedience or even querying a superior's viewpoint is considered a breach of conduct. The idea is that if everyone conforms to their role in society, the entire population will enjoy harmony even in the absence of law. In modern day Hong Kong, however, this has resulted in a business culture that is highly top-down and authoritarian. All decisions and business ideas are therefore concentrated in the top management, even though it is often poorly informed about market situations and underlying factors. Needless to say, such a business set up is not conducive to innovation and creative thinking because of the delay caused by the distance between relevant information and the decision-making loci. In the end, the fear of failure prevents people from taking risks and thinking out of the box.

Feeding the non-innovative nature of the Hong Kong mindset is the city's mainstream education system. Often described as a spoon-feeder, students survive in the system mainly with heavy rote learning, which is thought to be better suited for exams than for proactive and creative learning. With an emphasis on exam results and ranking since an early age, competition among students is fierce because upper-class placement and advancement to tertiary education are rigorously filtered by test scores and rankings. Students are seldom given the opportunity to think independently or encouraged to investigate matters on their own through trial and error. Although there are provisions for more creative subjects such as art and design-and-technology, the grading system is nonetheless rigid and mechanical, effectively doing away with innovative and radical approaches. As a result, the system has been churning out students mostly in one mould. Graduates of this education system are therefore tuned to a focused, monolithic pursuit of monetary and career advancement instead of a broader, more holistic and creative approach to life that is much more common in mature economies.

New Hope

Despite ambient disadvantages, Hong Kong has nurtured a collection of innovations worthy of note.

Shanghai Tang

Founded in 1994 by Hong Kong businessman, David Tang Wing-Cheung, Shanghai Tang was envisioned as “the best of 5,000 years of Chinese tradition exploding into the 21st century”. The name, reminiscent of the glory days of China's capital of style, elegance and charm in the 1930s, is a “cross pollinator” that blends strikingly Chinese designs with modern production techniques and appeal. However, it is not to be confused with attempts at “East meets West” that many Asian-influenced fashion designers have engaged in. Shanghai Tang defines itself as strictly a Chinese brand⁶⁶ but with an international appeal. In fact, its attractiveness with the overseas audience was so great that the international brand behemoth, Richemont, had already targeted it for acquisition in the early days. Since then, Shanghai Tang has been offering an expanding range of home furnishings, accessories, novelty gift items, and a collection of men's, ladies' and children's apparel—all of which enhance the concept of revitalised Chinese arts. Unique to Shanghai Tang is Imperial Tailors where customers can order a full range of exclusive designs created from lush cut velvets, silk jacquards, chiffon, organza, delicate linens and printed cottons that provide an exciting collection of brilliant colours and textures. Imperial Tailors revives the near-extinct art of “Chinese haute couture”, delicately crafted by a team of traditional Shanghaiese tailors. In contrast to other Shanghaiese tailors in Hong Kong found mostly in unpleasant neighbourhoods, Shanghai Tang provides its tailoring service in an exquisite and comfortable setting, complemented by tourist-friendly service and refined materials. By combining all these elements, Shanghai Tang has created a niche market for itself out of an old and shrinking market, and has yet to be challenged.

Octopus Card

The multi-award-winning⁶⁷ Octopus card system has revolutionised how Hong Kong makes small-sum transactions. Previously, stored value tickets were the handiest payment for the city's two railway systems. When a stored value ticket ran out, the ticketing system would

⁶⁶ Broun, Samantha (7 April 2006) “Designing a Global Brand”, Cnn.com, <http://www.cnn.com/2006/WORLD/asiapcf/03/15/eyeonchina.brands/index.html> (accessed 13 September 2007).

⁶⁷ The Octopus card system has won multiple awards, including the “Asian Innovation Awards 1998” from *Far Eastern Economic Review*, “1998 Hong Kong Awards for Services: Innovation” from The Hong Kong Coalition of Service Industries, “The 1st UITP Secretariat General Award for Innovation in Public Transport” from The UITP's Secretary General in 1999, “2005 Hong Kong Awards for Industries: Innovation and Creativity” from the Hong Kong General Chamber of Commerce, and “2006 Chairman's Award in the WITSA Global IT Excellence Awards” from the World Information Technology and Services Alliance (“WITSA”). The UK's Design Council calls it one of the small steps leading to better life.

retain the ticket and the commuter would have to purchase a new one. There was no other intended use for the stored value ticket besides paying for the railway systems. When taking the bus or minibus, commuters would have to pay exact change, which was usually cumbersome because it meant customers had to think about having, and then procuring, the exact change beforehand. In a city obsessed with efficiency, stored value tickets and coins simply could not keep up. With the aim of providing a simple way to pay fares on public transport, the Mass Transit Railway Corporation (“MTRC”), spearheaded the migration to more advanced technologies, which led to the launch of the Octopus card in 1997. Using technology imported from Australia, Octopus is operated, maintained and developed by a local company controlled by MTRC, which in turn is largely owned by the government. With the Octopus card, commuters can pay for the railway systems, buses and minibuses—all without even pulling the card out of their wallets or handbags. Fares are deducted from the Octopus card, whose value can be recharged either by over-the-counter payments or automatic charge to a credit card. Octopus has since extended its reach to simple payments for purchases in retail outlets and with personalised cards customers can use it as an access control and for personal identification. Hailed for its smooth operation, superior security and continuous innovations, Octopus has earned a global reputation and set an exemplary model for emulators outside Hong Kong. As the world’s leading and most extensive contact-less smart-card system, Octopus boasts the highest penetration, the highest transaction volume and the widest scope of applications. For a city with a population of around 7 million, over 14 million Octopus cards were in use as of 2007, transacting over HK\$29 billion annually with major public transportation and over 450 retailers.⁶⁸ What started out as a “caregiver” initiative, going out of the way to meet customers’ needs, developed into a “set designer” characteristic that provided a platform on which innovation and performance are enhanced.

The Role of Education

The beauty about creativity and innovation is the absence of exclusivity. No nation, company, gender, race or socio-economic group can exclude others from producing or using creativity and innovation. In other words, creativity and innovation is neither a zero sum game, nor is it exclusive to developed or rich nations. Having said that, the distribution of creativity and innovation on a global scale is far from equal. Certain countries are almost synonymous with creativity while others are often labelled a creative desert. This phenomenon contradicts the notion that universally, children are born with an instinctive imaginative and investigative spirit,⁶⁹ and that they grow up universally to become creative and innovative adults. The cause of disparity in creativity and innovation between nations must therefore lie between childhood and adulthood, and education can be singled out as a reasonable explanation.

As the economic pace moves ever faster, innovation can no longer be cooked up in the laboratories alone because of their glacial progress.⁷⁰ The innovation process has become democratised, such that any person can come up with an idea at any time, any place and under any circumstance. However, creativity and innovation without practicality is still useless. Although innovation does involve trial and error, there are tangible limits to failure that a business can tolerate before it goes bust. Arguably, harnessing innovation is as important as having innovation in the first place. Education serves as the bedrock for sound and practical innovation by upgrading the population’s skills and knowledge set.

Hence, by investing in quality education, economies can bring up generations of creative and innovative workers that can actively perpetuate economic success. The three nations examined earlier—Spain, Finland and South Korea—have managed to accomplish this goal

⁶⁸ Octopus (2005) “About Us”, <http://www.octopuscards.com/corporate/aboutus/en/index.jsp> (accessed 26 September 2007).

⁶⁹ Faulkner, D.; Coates, E.; Craft, A. and Duffy, B. (2006) “Creativity and Cultural Innovation in Early Years Childhood Education”, *International Journal of Early Years Education*, pp 191–199.

⁷⁰ Vaitheeswaran, Vijay (13 October 2007) “Something New under the Sun”, *The Economist*, p. 4.

by integrating creative elements into their education systems, which can act as beacons on the horizon for Hong Kong as it sets sail to becoming a creative and innovative society.

The Spanish Education System

The Spanish education system starts off with the kindergarten stage (*Educación Infantil*), which is broken down into nursery (*Jardín de Infancia*) for infants up to three years old and pre-school (*Prescolar*) for children between three to five years of age. The kindergarten stage is non-compulsory and free for all students. It is regarded as an integral part of the education system with kindergarten classes in almost every primary school, while some separate *Colegios Infantiles* or nursery schools run their own kindergarten classes. The goal of education at the kindergarten stage is to promote the physical, intellectual, emotional, social and moral development of students, thus creating a well-rounded preparation for the next stage of education while providing a play-centred environment in which students can explore the world around them and nurture their creativity.

Primary education (*Educación Primaria*) is compulsory and free for children aged six to 12, and is organised into three cycles of two years. The purpose of education at the primary stage is to promote the socialisation of students, to include them culturally and to contribute to a progressive autonomy of action in their environment. The teaching methodology is personal in nature and is adapted to the different rates of learning of each student by means of continuous overall assessment. In contrast with rigid and test-based curricula, the abundance of personal attention, learning freedom in pace and scope in the Spanish system are vital to preserving the inquisitive nature of children, which is a precursor to creativity and innovation.

This personalised style of education continues with the compulsory secondary education (*Educación Secundaria Obligatoria* or ESO), catered for students aged 12 to 16. Successful students are awarded a secondary education certificate at the end of ten years of compulsory education. Since 2002, the Spanish government has been implementing the Organic Law on the Quality of Education (*Ley Orgánica de Calidad de la Educación* or LOCE). Of particular interest in this latest reform is the reinforcement of the students' personal experience, training of teachers about teacher–student bonding, the development of institutional autonomy, and the stimulation of student motivation. All these initiatives are aimed at bolstering the desire for learning and exploration in students, who are guided by teachers better trained at understanding and bonding with students. This empowerment of students indirectly raises their penchant for creativity and innovation by removing limits and boundaries that would otherwise herd them into having a uniform obsession with test scores and assessments. After leaving compulsory education at age 16, students have two options: either pursuing intermediate vocational studies (*Formacion Profesional*) or the baccalaureate (*Bachillerato*).

While students pursuing *Formacion Profesional* dive into their specialisation in preparation for more advanced studies in a technical college (*Ciclo Formativo de Grado Superior*) or university at 18, those who elect to pursue the *Bachillerato* receive a general education, which favours greater intellectual and personal maturity, and a greater capacity to apply a wide range of knowledge and skills. All *Bachillerato* students have common and thematic subjects. The common subjects include Spanish language and literature, grammar and literature in the co-official language (varies according to region), a foreign language (usually English), philosophy, physical education, Spanish history, history of philosophy, and one elective that may be another foreign language, audiovisuals or human biology. The *Bachillerato* is designed to provide the foundation for further studies, either at university or in vocational training, ultimately enabling students to realise their preferences and interests. The absence of streaming gives maximum liberty to students in pursuing subjects of interest and is more conducive to nurturing creativity in students by giving them a breadth of disciplines to choose from.

After finishing *Formacion Profesional* or *Bachillerato*, students may enter one of two streams of tertiary education. The first is technical college (*Ciclo Formativo de Grado Superior*), which aims to prepare pupils for professional activity, providing them with multi-purpose training allowing them to adapt to job changes that may occur in their working life. Students learn about the organisation and characteristics of the corresponding sector and about the mechanisms of occupational integration, and acquire a professional identity and maturity encouraging future learning and adaptation to changes in qualifications. There is also specialised education in the arts (music, dance, visual arts, design and theatre) and language studies. Graduates of *Ciclo Formativo de Grado Superior* are very much in demand in the modern Spanish working world.

The second stream of tertiary education is university, which can be entered through a prerequisite entrance exam called *Selectividad*. The Spanish undergraduate system resembles the British system in that most students will enrol in a three-year program in a specific field, while more advanced disciplines such as medicine will take five years or longer to complete. At this stage, students enjoy much less liberty in subject choice as specialisation sets in immediately. However, the Spanish education system is currently undergoing substantial changes resulting from the introduction of the LOCE, which addresses the specialisation issue upfront. Despite the shortcomings of the existing system, Spanish university life offers a rather unique experience in that the clubs and activities that create a “campus community” in other university cultures are mostly absent. Instead, students are encouraged to make friends and develop a community of their own, so as to promote peer learning outside the classroom and motivate social innovation. This is aided by the fact that Spain is the world’s third-most popular destination for international university students from Europe and the American continent. The diverse, multicultural student population has made the Spanish tertiary education system one of the most dynamic and creatively vibrant in Europe.

Spanish graduates are imbued with a sense of creativity and innovation because throughout their education they are constantly shaping their world around them. This innovative spirit is a result of the system never dictating students’ choice of subjects, their extra-curricular activities nor spoon-feeding them social circles. Regardless of specialisations, Spanish graduates are motivated to make changes and adjustments as they see fit. Creativity and innovation in the business and commercial setting hinges on none other than this sense of making changes and adjustments.

The Finnish Education System

As a welfare state, the Finnish society places heavy emphasis on education. Yet, instead of installing overbearing and dictatorial education policies, the Finnish government goes by a decentralised and transparent directive for education. This atypical approach is first reflected in the pre-primary education in Finland, which is just one year long and voluntary for children up to six years. Up until this stage, Finnish children are encouraged to play instead of learning formal numeracy and literacy. Classes tend to be small and saturated with teacher attention, so that children interact as much as possible with the environment and develop their own sense of creativity.

By age seven, Finnish children are committed to nine years of comprehensive schooling, which is compulsory and free. In addition, students are given free lunch, health care, books, school materials and, for those living far away from school, transport. Even though students entering comprehensive schooling lack the math and reading skills that would have started to develop in other countries, the seven-year-olds catch up in no time, thanks to a solid desire to learn and explore cultivated by their pre-primary education. In the OECD’s triennial worldwide test of 15-year-old schoolchildren’s scholastic performance called Programme for International Student Assessment (“PISA”), Finland has consistently been a top scorer,

especially in reading.⁷¹ The education system stresses involvement of the parents at this stage, promoting emotional and ethical growth and well being through guided, recreational and safe activities outside school hours. Morning and afternoon activities may be sports or related to practical skills, oral or pictorial expression, music, everyday chores or knowledge in different areas. School clubs and basic education in the arts are also factored in. By maximising exposure to various learning channels and disciplines, the Finnish system encourages students to apply their acquired skills across disciplines. The extensive liberal learning throughout comprehensive schooling ensures that students internalise the qualities necessary for innovation.

When students turn 16, they have two three-year options to choose from: 1) upper secondary school for general education in preparation for university or 2) vocational school for more specialised industrial training. The upper secondary school is based on courses that do not correspond to any specific class year and ends in a matriculation examination (*ylioppilastutkinto*, *studentexamen*) that only allows for a limited degree of specialisation. The rationale behind the lack of year-based classes and specialisation is to retain as much flexibility and self-motivation for students as possible. This flexibility would allow them to stretch their creative potential as structure is progressively introduced in view of greater specialisation ahead at the post-secondary level. As a reflection of the Finns' distaste for academic obsession, some upper secondary schools specialise in a certain subject, such as sports, art or music, with some others offering special sport and art lines. Meanwhile, vocational school aims to improve the skills of the workforce, to respond to the need for skills in the professional world and to support lifelong learning. True to the Finnish belief of learning for all, vocational school is intended both for students and adults already in the workforce. Upon graduation from vocational school, students can move up to polytechnics or, through matriculation, to universities. Demand is high for vocational school graduates, as many of them are trained in creativity-driven fields such as technology, tourism, culture, and leisure and physical education. The Finnish culture of innovation is thus cemented by this stage of education.

The Finnish tertiary education system consists of two complementary sectors: polytechnics and universities. Polytechnics train professionals in response to labour market needs and they conduct R&D, which supports instruction and, in particular, promotes regional development. The mission of universities is to conduct scientific research, and to provide instruction and postgraduate education based on it.

The system of polytechnics is still fairly new. The first polytechnics started to operate on a trial basis in 1991–1992 and the first permanent polytechnic was established in 1996. Polytechnics are multi-field regional institutions focusing on contacts with working life and on regional development. Since the polytechnic is a more customary choice for vocational school graduates, the choice of specialisation is similar, with offerings including humanities and education, culture, social sciences, business and administration, natural resources and the environment, technology, communication and transport, natural sciences, social services, health and sport, tourism, catering and domestic services. The vibrancy of creative-driven professional fields has reinforced creative-driven education in Finnish polytechnics, thus creating a synergetic effect.

Finnish universities are all state-owned and largely state-financed. With an emphasis on research, science and artistic education, universities are required by the government to “interact with the surrounding society and strengthen the impact of research findings and artistic activities on society.”⁷² There are 20 universities in Finland covering as many as 11

⁷¹ Programme for International Student Assessment (PISA) “2006 Pages”, <http://www.pisa2006.helsinki.fi/index.htm> (accessed 24 September 2007).

⁷² Ministry of Education “University Education in Finland”, <http://www.minedu.fi/OPM/Koulutus/yliopistokoulutus/?lang=en> (accessed 26 October 2007).

cities, while the population is only 5.3 million. The abundance of resources ensures high student enrolment and a great degree of institution–community interaction that supplies the flow of ideas among faculty. Similar to Spain, the university culture in Finland leaves plenty of room for students to create their own environment and social circles, never spoon-feeding students with institutionalised communities. Extended university life in Finland as a result of very high enrolment in master’s degree programmes means that students have additional time to experiment with life and learning. Thus, the Finnish university system provides an innovation-friendly environment for students, reinforced by faculties bubbling with fresh ideas.

It is therefore no surprise that the Finns see learning and innovation as almost a national duty, as exemplified by such success stories as the venerated Nokia. By refusing to dog every detail in students’ learning, the Finnish education system has managed to achieve more innovation with less intervention. The high level of English proficiency among the Finns also allows them to expand their horizons through interaction with the outside world, which leads to a wider source of inspiration and, in turn, innovation.

The South Korean Education System

Similar to many of its neighbouring nations with a Confucian heritage, South Korea has an intensive education system that constantly pushes students to the limit. In contrast with other Asian education systems, however, the South Korean system is a forerunner in breaking away from the rote-learning tradition and recognising the need for diversity in content and instruction.

South Korean pre-primary education, like in many other countries, is outside the scope of formal education. Nevertheless, the government understands its importance to the extent that it is progressing toward providing free pre-primary education for all citizens, a rare feat in Asia. The pre-primary curriculum centres around five domains of human development: health, society, expression, language and exploration. The government spells out that pre-primary education aims to provide an appropriate environment for nurturing children and promoting the wholesome development of children through various enjoyable activities with diversified content and methods of instruction.⁷³ For a country with a history of rote learning, the government’s current directives are tell-tale signs of a comprehensive, more humanistic interpretation of childhood development that emphasises creative elements.

Students between the age of six and 11 attend free, compulsory primary education. Although the South Korean system still confines studies to individual subjects and classes, each class teacher (homeroom teacher) generally covers most of the subjects, except for certain subjects that call for specialisation, such as physical education and English. The use of homeroom teaching enhances teacher–student bonding and comprehensive feedback for students. This is particularly helpful in the South Korean system because—like in many urbanised Asian countries—class size tends to be big compared to that in more sparsely populated countries in the West. With homeroom teaching, students gain more attention from the teacher, who knows the students much better on an individual basis than otherwise, there is greater flexibility in the teaching method and the pace is more suited to the individual. However, the greatest advantage of having homeroom teaching is that teachers are able to draw on different subjects in their teaching, using an inter-disciplinary approach that instils lateral thinking in students, which in turn is a crucial element in innovation. Another interesting facet about South Korean primary education is that in the most junior years, certain science and creative subjects are integrated as “intelligent life” and “pleasant life”,⁷⁴ with the former taking around

⁷³ Ministry of Education and Human Resources Development “Pre-Primary Education”, <http://english.moe.go.kr/main.jsp?idx=020201> (accessed 29 October 2007).

⁷⁴ Prior to 3 December 2007, “intelligent life” was known as “wise living” and “pleasant life” was known as “pleasant living”, according to South Korea’s Ministry of Education and Human Resources Development (“MOE”).

100 class hours and the latter 200 class hours each academic year. It is then little wonder why South Korean lifestyle products and services are in such demand.

Since the South Korean system is a wartime legacy of the US, secondary education spans six years and is equally divided between middle school and high school. Middle school-bound students are placed according to their place of residence and not by their grades, thereby being relieved of exam pressures found in an elitist system. With the government's realisation of the ills of rote learning and about the dawn of a knowledge-based, global economy, it has, since the mid-1990s, attempted to break away from a spoon-fed and short-sighted approach to education. It has tried to move towards a new approach in the classroom to produce individuals capable of facing new challenges. Study loads for each subject have been reduced to an appropriate level, while curricula that accommodate different needs of individual students were also introduced. Independent learning activities to enhance self-directed learning as required in a knowledge-based society have either been introduced or expanded. The current, student-oriented curriculum emphasises individual talent, aptitude and creativity, aiming to produce an educated person who:

- Seeks individuality as the basis for the growth of the whole personality
- Exhibits a capacity for fundamental creativity
- Pioneers a career path within the wide spectrum of culture
- Creates new value based on an understanding of the national culture
- Contributes to the development of the community based on democratic civil consciousness.

Based on such ideals, students in the final two years of high school are given the opportunity to choose the curriculum and courses they wish to take so that they may benefit from education that facilitates their future path. Many South Korean celebrities trace their first formal education in the creative arts to this stage. Adding to this is the prevalence of IT in South Korean schools, where students are naturalised into retrieving, referencing, analysing, applying and presenting information on the internet, thus further widening students' ability to practise their inter-disciplinary skills and enhance their creativity. The South Korean government is going to such lengths that cyber-textbooks are being considered for localised trial. The conscious effort of the government to imbue a sense of creativity and innovation in students through flexible and uncustomary education has clearly paid off in the successes of the Korean economic boom.

The tertiary education framework in South Korea shares many similarities with other countries, where universities specialise in theoretical education and other institutions focus on vocational or technical aspects. Likewise with the duration of study, it generally takes four to six years to complete undergraduate studies, depending on the major. The university entrance examination, which used to be described as "hellish", is now much less intense due to the rise of in-school assessment and elimination of tracks (eg, humanities, sciences, arts/physical education). The installation of more curriculum choices and application phases for university has added flexibility in accommodating students who excel in non-academic areas.

One characteristic of South Korean tertiary education is its extra-curriculum. Taking advantage of the longer term breaks, South Korean students have a custom of filling their extra-curriculum with special courses, travels, internships and even political activities. As a testament to South Korea's enthusiasm for international study, the country currently ranks third in sending students to the US, just behind the much more populous nations of India and China.⁷⁵ Even back in South Korea, most of the extra-curricular activities are not motivated by monetary gains; they serve to broaden students' horizons and enhance their organisation skills, ultimately leading to better creativity and innovation.

⁷⁵ Institute of International Education (2007) "Report on International Education Exchange: Open Doors 2007 Fast Facts".

South Korea's historical emphasis on education has resulted in it being one of the most educated nations—the percentage of the population with tertiary education is on par with the most advanced OECD nations, surpassing even Japan in certain age groups.⁷⁶ This has supplied South Korea's highly successful R&D with an abundance of educated researchers, further fuelled by the nation's proportionally high expenditure in the area.⁷⁷ Like Finland, South Korea's stellar rise in innovation can be attributed to an education system that is high in both quality and quantity. By ingraining the urgency of education into young minds, the South Korean education system has produced crop after crop of students that can make good use of the flexibilities of the education system and innovate on every opportunity to advance themselves.

The Hong Kong Education System

Juxtaposing the educational successes in Spain, Finland and South Korea with Hong Kong's mainstream education system reveals its shortcomings and areas of possible improvement in fostering creativity and innovation.

Pre-Primary Education

Children aged between two and six are provided with pre-primary education before being committed to formal education in Hong Kong. Pre-primary education is divided into two stages: child care centres for ages two to three and kindergartens for ages three to six. Child care centres provide full-day and half-day services, with the majority providing full-day services. Most kindergartens operate on a half-day basis offering upper and lower kindergarten classes and nursery classes, while some offer full-day classes. The aim of pre-primary education in Hong Kong is to provide children with a relaxing and pleasurable learning environment to promote a balanced development of different aspects necessary to a child's development, including the physical, intellectual, linguistic, social, emotional and aesthetic aspects.

All kindergartens in Hong Kong are privately run. They are categorised as non-profit kindergartens and private independent kindergartens, depending on their sponsoring organisations, which can be either voluntary agencies or private enterprises. A voucher scheme is being introduced to provide direct subsidy to parents starting in the 2007–2008 school year, with the voucher value amounting to HK\$13,000 which will be increased progressively to HK\$16,000 by the 2011–2012 school year. The voucher value includes subsidies for school fees and teacher professional development. In the 2007–2008 school year, the voucher value dedicated to school fees and teacher professional development will respectively be HK\$10,000 and HK\$3,000 per student per annum. Primarily tailored for non-profit kindergartens, the voucher scheme is to cover private independent kindergartens for a three-year transition period, after which the subsidy will be discontinued. Upon full implementation in the 2011–2012 school year, the government expects that more than 80% of kindergartens will come under the scheme and 90% of local students aged between three and six will receive fee subsidies regardless of socio-economic background.

Kindergarten teachers and principals are required to meet professional qualifications, and teacher to pupil ratios must be no higher than 1:15, which is the lowest among all non-tertiary segments in the Hong Kong education system and comparable to that in Western countries.⁷⁸

⁷⁶ Ministry of Education and Human Resources Development "2005 Brief Statistics on Korean Statistics", http://english.moe.go.kr/statistics/2005_statistics.pdf, p77 (accessed 30 October 2007).

⁷⁷ The Organisation for Economic Co-Operation and Development ("OECD") ranks South Korea as the fourth-highest spender in 2006 on R&D as a percentage of GDP; OECD (2007) "Key Figures", <http://www.oecd.org/dataoecd/49/45/24236156.pdf> (accessed 30 October 2007).

⁷⁸ California, USA has been trying to bring the teacher to student ratio to 1:20 with mixed results as reported in Knight Ridder Tribune Business News (18 February 2007) "Results Mixed Ten Years after Monumental Class Size Push".

In 1995, a working group with members drawn from the Education Bureau and Social Welfare Department was set up by the government to combine the curriculum reference materials for kindergartens and child care centres. The resulting “Guide to the Pre-Primary Curriculum” states that the pre-primary curriculum should help foster children’s all-round development and positive learning attitudes [see **Exhibit 6**]. Broadly speaking, the curriculum refers to all the activities that take place either indoors or outdoors in the pre-primary institutions, including class and group learning, music activities, story-telling, art and craft activities, games, and other habit-forming training covering personal health and hygiene like toileting, grooming, eating and resting. While individual kindergartens have the liberty to plan their own curriculum, they generally subscribe to these ten principles:

1. Catering for the overall physical, intellectual, linguistic, aesthetic, emotional and social development of children.
2. Meeting the developmental needs and abilities of children.
3. Relating to the experiences and interests of children.
4. Motivating children’s curiosity and thirst for knowledge, and encouraging interaction and independent thinking.
5. Fostering knowledge, skills and attitudes in different areas of learning.
6. Using themes for the purpose of flexible curriculum integration.
7. Promoting the unique values and functions of different kinds of play activities.
8. Providing children with opportunities to express themselves, to be creative and to enjoy activities.
9. Giving due consideration to children’s family background and their experience gained in the family.
10. Meeting the needs and development of society.

With abundant resources and breadth of curriculum, Hong Kong’s pre-primary education is well equipped to endow students with a creative impetus. The only potential drawbacks of pre-primary education in Hong Kong are the lack of space and English proficiency. In a city known for severe lack of space, even resource-rich kindergartens often face space constraints in realising the full potential of physical and creative developments of students. As for English instruction, Hong Kong’s pre-primary education is hampered by the relatively weak English ability of kindergarten teachers. While the situation would normally require years to improve, the education system in Hong Kong can achieve faster results through a combination of enhanced reading regimen and parental involvement. Although kindergarten teachers may be unable to provide good English teaching, students can benefit from quality reading to attain better English. Parents can complement students’ English learning through exposure to English media at home and other activities involving English outside the home. Parents need not possess a good command of the language; the fostering of an open attitude toward learning the language should take precedence. A good grasp of languages from an early age is vital to future creativity in the uptake and expression of ideas. The learning of English, in particular, is crucial for Hong Kong to stay international and unique in the nation. Meanwhile, Finland’s free-style pre-primary education has demonstrated that children do not require formal literacy training to gain proficiency in a language. If the education system is to bring out the creative potential in a child, it must not subject students to rigid, defined assessments. The current system in Hong Kong, however, operates on criteria assessments, which in effect only allows for one type of student—the academic—to excel. Since there is no direct correlation between academic excellence and creativity or innovation, the current system in Hong Kong is not optimised to accommodate the flourishing of creativity and innovation. By mimicking other systems such as the Finns’, Hong Kong’s pre-primary education can incorporate more play and exploratory elements in activity, and adopt more qualitative assessments as opposed to quantitative ones. Design education can begin as early as this stage by posing questions and problems for students to solve, thereby habituating them to thinking creatively and innovatively. In the absence of pre-conceptions and inhibiting life

experiences, children at this age are in the best position to think and design with total creative freedom. Through prolonged exercise of such faculty, the education system can begin preserving maverick thinking in children as they grow up and advance to the next stage.

Primary Education

When a child reaches six years of age, nine years of compulsory education begins. Tuition is sponsored by the government, and other smaller charges, mostly for administrative purposes, are borne by parents or guardians. The first six years of compulsory education are categorised as primary education. Over 80% of the 669 primary schools in Hong Kong provide full-day schooling, while the government is working to convert the remaining bi-session schools according to resource availability.⁷⁹

The wide curriculum comprises core subjects including Chinese, English and mathematics, with a broad emphasis on music, physical education, and arts and crafts; general studies cover social, health and scientific studies. Depending on the religious background of the school, religious education or Bible studies may be incorporated. Since the 2004–2005 school year, the government has been focusing on IT education to let students acquire the necessary skills, knowledge and attitudes for lifelong learning and creative problem solving in the information age. The primary emphasis is on students to use IT as an information retrieval, knowledge enquiry, communication, collaboration, analytical and personal development tool. The government has pledged to continually enrich digital resources to meet schools' needs.

The medium of instruction in most mainstream, or local, primary schools is Chinese, and English is the second language. In the name of enabling students to learn effectively, the government promoted the use of the mother tongue as the medium of instruction since the 1980s. By the time Hong Kong reverted to Chinese sovereignty in 1997, only a small minority of primary schools had kept English as the medium of instruction under prevailing policies. Those schools are generally referred to as English as Medium of Instruction schools. The government's language policy is to enable students to learn effectively, and to be bi-literate and trilingual, ie, writing good Chinese and English, and speaking Cantonese, Putonghua and English fluently. To that end, the government has been extending the Chinese and English Extensive Reading Schemes, and developing writing packages for all levels of schooling. Native-speaking English teachers are also recruited to enhance the level of English taught in public schools.

Hong Kong's primary education has received a boost in recent years with a growing recognition and conscious effort to improve the learning environment. The standard school design was revised in mid-1998 to provide more facilities to support the development of quality education and the implementation of various new initiatives such as IT in education and enhanced language teaching. Some schools built in 1999 and all schools completed from 2000 have additional facilities including computer-assisted learning rooms, language rooms, conference rooms, discipline master's offices and multi-purpose areas. These schools also have larger classrooms, staff rooms and covered playgrounds.

Apart from providing more facilities and expanding existing ones, there has been more attention paid to the provision of open and green space in new school designs. According to the government, the purpose is "to facilitate the development of closer ties amongst pupils, allow greater interaction between pupils and teachers, and help foster a stronger sense of belonging to the school amongst the pupils."⁸⁰

⁷⁹ Education Bureau, Government of the Hong Kong Special Administrative Region (2007) "Kindergarten, Primary and Secondary Education", <http://www.edb.gov.hk/index.aspx?nodeID=152&langno=1> (accessed 18 October 2007).

⁸⁰ Education Bureau, The Government of the Hong Kong Special Administrative Region (2007) "Programme Highlights", <http://www.edb.gov.hk/index.aspx?langno=1&nodeID=397> (accessed 18 October 2007).

As Hong Kong progresses in upgrading the physical learning environment for primary education, the next step is to dismantle the rigid boundaries of the curriculum. The Chief Executive's 2007–2008 policy address has touched on progressively reducing class size.⁸¹ A lower teacher-to-student ratio will boost Hong Kong's readiness in adopting a more student-centric mode of education, creating more capacity in the nurturing of creativity. The next step, as with pre-primary education, is to relax the assessment methodology that currently favours the academic at the expense of students that have non-academic strengths. Only in doing so will diversity, and in turn creativity, truly flourish in Hong Kong's primary education, because status quo only encourages parents and students to head down one single path of left-brain, counter-creative learning. In breaking free from such monotony, the system can incorporate more interactive elements into teaching, such as field trips, museum tours, factory visits, site seeing, sport and spectator events, or simply the creative arts. Another element worthy of integration into the curriculum is art history and appreciation, because they widen students' exposure and provide inspiration. Hong Kong children are often thought of as shy and non-expressive, and interactive teaching is not only a powerful tool that can reverse the predicament and bring out the creative side in primary students, but it is also helpful in setting up a potent linkage between academic learning and the world outside the classroom, especially when Hong Kong students already participate in many extra-curricular activities. Through the infusion of learning in and outside the classroom, students become more at ease with cross-disciplinary thinking, paving the way for greater creativity and innovation.

Secondary Education

Hong Kong's current compulsory education stretches into the first three years of secondary education, which includes four additional years of voluntary enrolment, making it seven years in all. The first three years of secondary education are largely a continuation of the primary curriculum except that students are taught several more subjects, depending on the school. By the fourth year, students who choose to continue are segregated into streams, namely science, arts and commerce, subject to availability at the individual school. The specialisation sees an end to cross-disciplinary studies, where science students are cut off from more creative subjects and arts students are deprived of learning the natural sciences. This specialised learning is meant to prepare students to sit for up to ten subjects in a public examination at the end of the fifth year, called the Hong Kong Certificate of Education Examination ("HKCEE"). This highly competitive exam is largely based on rote learning and is used to screen out a significant proportion of the student body. Those who get past this gate will be streamed into even greater specialisation for the sixth and seventh year—mathematics/engineering stream, science stream and arts stream—in preparation for another highly rigorous public examination, the Hong Kong Advanced Level Examination ("HKALE"). Although this de facto university entrance examination is less dependent on rote learning, it is still rigid and formulaic in approach.

To the collective relief of junior secondary students, the government has announced the introduction of a New Senior Secondary ("NSS") curriculum to be rolled out in 2009. The NSS curriculum will be part of a new "334" academic structure, in which secondary education will be reduced from seven years to six years, transferring the extra year to form a four-year tertiary education rather than the current three years. Under the NSS curriculum, more flexibility will be introduced in secondary education with regards to curriculum design and assessment, with an aim "to encourage a more broad-based curriculum for senior secondary students with more choices to suit individual aptitudes and interests."⁸² Tertiary education advancement will also become more comprehensive, with applicants no longer

⁸¹ 2007–08 Policy Address of the Chief Executive of Hong Kong (2007) "A New Direction for Hong Kong", <http://www.policyaddress.gov.hk/07-08/eng/p88.html> (accessed 18 October 2007).

⁸² Education and Manpower Bureau (5 July 2006) "EMB welcomes university admission requirements announced by HUCOM", Press Release, http://www.edb.gov.hk/FileManager/EN/Content_4745/press_release_d5_060705_c_eng.pdf (accessed 28 September 2007).

being assessed on limited criteria and exam scores, most notably with the evolution of the HKCEE and HKALE into a merged Hong Kong Diploma of Secondary Education (“HKDSE”).

Under the new examination framework, many existing subjects in the HKCEE and HKALE will be combined to suit the varying interests and abilities of the students. Students will be examined on core subjects and elective options of their preference. Most school students are expected to take four core subjects plus two or three elective subjects.⁸³ Each HKDSE subject includes a compulsory part and an extended part consisting of modules of choice. The HKDSE will adopt a criterion-referenced grading system, where experts from each subject will set the standards for each level. Level descriptors and examples will be based on syllabus objectives and collected data, including past exam statistics and answer scripts. Grading in a criterion-referenced system reflects a student’s level of attainment in the particular subject and is not a result of a comparison with others. Before the exam, a student will be familiarised with the different level descriptors and samples, and may use them as objectives for their study. After results are released, students will have a clearer picture of their attainment level. Tertiary institutions and employers will also benefit, gaining more comprehensive information for admissions or recruitment.

This positive development is boosted by the Chief Executive’s pledge in his 2007–2008 policy address on expanding free education from the current nine years to 12 years⁸⁴ to cover the entire secondary education. This, however, does not overturn the society’s obsession with the science stream, which is thought to lead to more advanced studies and in turn careers in professions deemed more prestigious, such as medicine and accounting. A further downside to this obsession is the slighting of non-science-stream disciplines that resonates throughout society. The NSS and HKDSE will practically remove such streaming so that students can achieve a more balanced and well-rounded education that is conducive to creativity. To go a step further in nurturing creativity in secondary students, more interactive elements can be incorporated into classroom teaching. As with primary education, the current curriculum for secondary education focuses solely on academics. All the creative, interlacing and contextual elements have been filtered out, leaving a dry, spoon-feeding mechanism. Over time, students become conditioned to dull learning, in which creativity and innovation have no place, and carry the same mentality into later stages of their lives, be it education or work. To break free of this weight of non-creativity, the system needs to sweep the students off their feet and get them to walk the talk. Instead of just reading up on science, schools can organise visits to science museums, laboratories, R&D firms or even factories, where different chemical, biological and mechanical processes occur in real life. Besides studying economics and commerce, students should have the opportunity to see the stock market and commercial banks in action, or even run a store at a carnival to experience entrepreneurship first hand. Arts students can go beyond producing their own creations by interacting with practising artists or seeing great works of art on display in museums. As with primary education, art history and appreciation can form an integral part of the curriculum as an option of study. Another element that can be introduced into the curriculum is the case study method, which emphasises applied learning, skills integration and investigative thinking. Without the processes of investigation, trial and error, there can be no real innovation. That is why it is vital that secondary students in Hong Kong get their fair share of investigation, trial and error in their education. However, it is true that to provide the luxuries of a truly interactive learning environment places a greater workload on front-line teachers, who are already strained by excessive administrative tasks and constant education reforms.⁸⁵ There is a real

⁸³ Hong Kong Diploma of Secondary Education, Hong Kong Examinations Authority “Introduction”, http://www.hkeaa.edu.hk/en/hkdse_intro.htm (accessed 18 October 2007).

⁸⁴ 2007–08 Policy Address of the Chief Executive of Hong Kong (2007) “A New Direction for Hong Kong”, <http://www.policyaddress.gov.hk/07-08/eng/p88.html> (accessed 18 October 2007).

⁸⁵ Chow, Ping-yan Alan (1999) “A Review of Current Education Policies in Hong Kong”, <http://www.hkpri.org.hk/bulletin/8/alanchowpy.html> (accessed 31 October 2007).

need for the government to consider the implementation method when it next revises the content of secondary education, namely the Applied Learning Curriculum that is in the pipeline, so as to achieve the intended effect of boosting creativity and innovation skills among Hong Kong's secondary students.

Tertiary Education

Following secondary education, students with HKALE results that satisfy university entrance requirements are admitted to one of the eight universities, which have a combined undergraduate population of over 50,000.⁸⁶ All universities are publicly subsidised, resulting in very low tuition fees; the expensive medical and engineering education is subsidised as well. Apart from certain specialised courses such as medicine, undergraduate education spans three years and specialisation is immediate, with students assigned to respective schools and faculties from the beginning. Regrettably, there are very few degrees that deal extensively with creativity or innovation, apart from specific courses on design outside the mainstream.⁸⁷ Thankfully, the move by Hong Kong's universities in the mid-1990s to import the grade point average ("GPA") system from the West has, to some extent, diluted the negative effects of streaming. Under the GPA system, degrees are broken down into modular courses with more dynamic assessments and increased coursework demands. More importantly, the GPA system allows students to fit elective courses into their studies, thereby introducing more breadth and variety necessary for creativity to flourish.

With secondary education ready to take on a broader curriculum to provide a more comprehensive development for students, the next step is to revamp tertiary education. Under the NSS, a move from a default three-year programme to four years mirrors the existing systems in the US and certain parts of Europe, where liberal arts and general education are common. Liberal arts and general education aim to expose students to a spectrum of subjects without pushing students into a speciality from the beginning. This makes practical sense as students often do not have a solid idea about their lifelong career goal and the corresponding academic qualifications required, at the beginning of their tertiary education. Rather than pushing students into a specialisation early on only for them to realise they want another specialisation and then back out, it is wiser to expose students to the many disciplines on offer and let students come to their own decision as they better understand their life goals. Greater emphasis in undergraduate course design can be given to creativity, innovation and entrepreneurship education to fill the gap in the current system in grooming creative and dynamic business leaders, especially since Hong Kong students need more comprehensive training and practice in "problem solving" and "opportunity creation". On occasion, students may have to take a gap year or a sabbatical to fulfil certain projects or work experiences. These are excellent opportunities for students to apply their learning comprehensively and sharpen their problem-solving skills in real-life settings. The concept, though novel for Hong Kong, has been a standard practice in many places around the world. Hong Kong will need to be educated on the merits of a gap year, be it pre-university or post-graduation.

At the postgraduate level, the Rotman School of Management at the University of Toronto advocates "integrative thinking" that breaks down traditional division of functional areas in business (eg, accounting, management and marketing) and combines all these elements into a new way of thinking. Meanwhile, the Institute of Design at Stanford's multidisciplinary approach provides an exemplary template—here, students from many different and often unrelated disciplines are brought together to create a vital interactive environment. The resulting diversity and breadth of the community makes it possible to establish bold new initiatives and projects that integrate a unique mix of disciplines and talents [see **Exhibit 7** for

⁸⁶ Education Bureau "Number of Students by Type of Educational and Training Institution and Mode of Study", <http://www.edb.gov.hk/index.aspx?langno=1&nodeid=1029> (accessed 18 October 2007).

⁸⁷ Education Bureau "List of Full-Time Accredited Self-Financing Post-Secondary Programmes for 2007/08", <http://www.edb.gov.hk/index.aspx?nodeid=6081&langno=1#asd> (accessed 31 October 2007).

graphical illustration]. One underlying factor contributing to Stanford's mix is its international make-up, as students come from all around the world, bringing with them their expertise and backgrounds to synergise creativity. Despite universities in Hong Kong stepping up their exchange programmes, international presence in Hong Kong's schools still trails behind the major learning hubs of the US and the UK. Joint programmes between business schools in Hong Kong and design schools both local and across the globe are an effective channel to import international styles of creativity and design logic to augment the acute business sense of Hong Kong students. A trend has already begun in the West where business schools and engineering institutes are rolling out joint programmes with design schools and art schools, including top institutions like France's INSEAD and the Art Center College of Design in the US. It would, of course, be even better if Hong Kong managed to attract internationally renowned design schools to set up a branch in the city, benefiting both the profile and creative education of Hong Kong.

To better equip students with wider knowledge and skill sets, Hong Kong can take cues from South Korea. The Dongseo University Graduate School of Design and IT is revamping its design curriculum by replacing the conventional silos of product, graphic, interior design etc. with an umbrella approach, dubbed "service and experience design", to meet the changing needs of an increasingly service-oriented economy. The South Korean government is also driving design as laid out in its third five-year (2002–2007) plan for industrial design promotion. South Korea's drive involves lowering the starting age of design education to identify and educate design prodigies, supplemented by abundant internship opportunities at design and creative firms to stimulate development and to build up working experience. The South Korean government also actively encourages industry–academic exchange, with company executives and specialists frequently sharing their experiences at academic institutions and companies hosting extended tours for students and faculty. In return, the education sector also collaborates with the private sector extensively, putting the latest academic research findings into real-life applications—and this is not restricted to scientific or technological fields. Design research is one field within academia that constantly crosses paths with the wider community, yet often goes un-noticed. Given its emphasis on user-centricity and innovation, design research carries a lot of potential in inspiring and paving the way for the next major innovation. For that reason, it deserves greater attention and resource input.

The focus of change need not be limited to students. In faculty recruitment, reward and retention, the current strategy leans towards pure academic research and neglects other activities essential to creativity and innovation, including external engagement and applied research. Several universities in the UK have recognised the need to change. For example, the University of Nottingham and Newcastle University now assess faculty promotion on how their research and teachings have reached out to the business sector and the wider community.⁸⁸ A healthy interaction across sectors promotes balanced and positive growth for creativity and innovation within the economy.

Conclusion

Faced with stiff competition from around the region, Hong Kong is at the cusp of its next phase of development. Having built its fortunes on efficiency and logic—attributes associated with the left brain—Hong Kong can no longer compete on price and speed alone, especially when the macro commercial landscape has since moved on to higher standards and more sophisticated consumption patterns. Many countries have reached the same cusp of development ahead of Hong Kong. Those that came out on top did so using creativity and

⁸⁸ Personneltoday.com (2004) "Academic Reward in the Firing Line", <http://www.personneltoday.com/Articles/2004/11/23/26878/academic-reward-in-the-firing-line.html> (accessed 18 October 2007).

innovation to carve out new market spaces for themselves. Like Hong Kong, these nations did not think innovation was recreation—it was survival. Despite the grim tone, these success stories shared the same silver lining. All these nations had to teach themselves to become creative and innovative. So can Hong Kong.

To help Hong Kong's creativity and innovation flourish, there should be two foci targeting both the short term and the long term.

In the short term, a massive importation of creative talents can provide a jolt of creativity to jumpstart Hong Kong's creative engine. This is not to say that Hong Kong merely needs to import workers for the creative industries. Instead, what Hong Kong needs is talent from the respective industries, including the four economic pillars—financial services, trading and logistics, tourism, and producer and professional services—that can creatively make use of existing advantages in Hong Kong to produce and *inspire* innovations. The existing workforce in Hong Kong is by and large deprived of exposure to creativity and innovation—attributes associated with the right brain. The presence of inspiration in the form of imported talent can provide a much-needed stimulus to latent creativity and innovation.

In the long term, a more fundamental transformation of Hong Kong's mindset has to be effected through the education system, spanning pre-primary through lifelong learning. The current education system is highly efficient in training up attributes associated with the left brain, hence the masses of conscientious, logic-driven workers. Yet, to teach Hong Kong to become innovative, some fundamental changes to the education system have to be made:

- Pre-primary education should incorporate more play and exploratory elements in teaching, and move away from quantitative assessment. Students need to develop curiosity about the world around them so that as they grow they will be keen to learn from a variety of sources and topics as a precursor to a creative and innovative mindset. Parental involvement is critical to a child's development at this stage, thus the system can benefit from encouraging a greater role for parents not only in interaction with the school but also in the time a child spends outside the school. The system and parents need to work in tandem to ensure children are equipped with the basic skills and motivation to interact with the surrounding environment, people and situations, so as to pave the way for future development of creativity and innovation through diversity and cross-reference. Design education can be introduced to help students develop problem solving and creative thinking.
- Primary education should be more interactive and dynamic, allowing students to develop their own strengths without the restriction of a narrowly defined, quantitative assessment that is heavily based on classroom teaching at the expense of integrating learning in the outside world. Through learning from a wider spectrum of disciplines, students develop the ability to see the same thing from different angles, paving the way to creative and innovative thinking. The latest initiative from the government in lowering class size helps the primary education system to devote greater personal attention to individual students and have greater teacher–student interaction. Once more teacher resources are freed up, the system can rely less on a rigid curriculum for homework and exam assessment, and more on projects and field activities. More cross-cultural studies and exchanges can be introduced at the primary level through overseas excursions, inter-racial and cultural activities, etc. Given the establishment of non-mainstream education in Hong Kong, namely the international and English School Foundation schools, the mainstream system can expand students' horizon through more frequent contact with the non-mainstream students. This further step in removing the constraints of the classroom will serve to illustrate diversity, creativity and innovation in action. Students at this age, with their innate ability to mimic and relate, should encounter little difficulty in incorporating

creative elements into their way of life. Art history and appreciation can be integrated into the curriculum to widen students' exposure and to inspire them.

- Secondary education should develop students' curiosity by encouraging them to put book knowledge into practice and to interact with different populations to gain experience and inspiration. A learning pattern that involves investigation, trial and error ensures that students mature into inquisitive, creative problem-solving, and innovative individuals. Boarding school, for example, provides excellent field training for students to exercise their ability to solve problems creatively and innovatively. Extending this concept overseas, the system can also include more opportunities for students to study away from home, to learn about other cultures and ways of life, to experience different flavours of creativity and innovation in real life. The system can also advance the introduction of foreign exchange programmes at this stage, instead of limiting them to the tertiary level, which it does at present. As with the primary level, the non-mainstream education system can be brought into contact with the mainstream system to inspire students. In breaking out of the classroom, more projects and real-life learning can be factored in, such as field trips, long-term projects, organising exhibitions and presentations. Once system reforms have liberated more teacher resources through smaller classes and more streamlined administration, teachers can start to become more creative and involved in their approach, which should then have a multiplier effect on the students. The adoption of NSS and HKDSE is the first step in liberalising education at the secondary level. Supplementary elements like the ones discussed above will have to be added to ensure that students receive a vibrant, comprehensive and liberal education that nurtures their ability to imagine and innovate. Additionally, besides art history and appreciation as introduced in primary education, schools can also use the case study method of teaching to train students to solve problems and to be curious. There already are institutions in Hong Kong, such as the Lee Shau Kee School of Creativity, pushing for greater integration of the various disciplines to bring about a more comprehensive education for students.
- Tertiary education should aim to expose students to the widest spectrum of learning disciplines and cultures so that students become more resourceful and multi-faceted as they prepare to test their creative and innovative minds in the professional world or further studies. On the undergraduate level, there should be greater emphasis on creativity, innovation and entrepreneurship education to fill the gap in "problem solving" and "opportunity creation" in the current system. An upcoming Bachelor's programme on Creativity and Innovation by the University of Hong Kong is an attempt in the right direction. Hong Kong also needs to be educated about the merits of a gap year in enriching real-life and skill-application experiences among students. At the postgraduate level, a multi-disciplinary approach can bring together different fields of talent to achieve synergy in innovation. International partnerships and involvement can also benefit the profile and creative education of Hong Kong. Besides enhancing exchange programmes to encourage student interaction with the outside world, the mainstream system can also interact more with the non-mainstream system, such as vocational colleges and the Hong Kong Academy for Performing Arts. This not only broadens the horizon of mainstream students, giving them more resources to draw on for creativity and innovation, but also helps them appreciate excellence beyond academics. The system should also provide more opportunities for students to apprentice with various organisations. Besides the private sector, exposure to non-government organisations and even organisations outside Hong Kong provides excellent experiences to students who are often overly focused on academic learning. The faculty can also lead students in stepping out of the ivory tower. By shifting emphasis away from pure academic research to practical research with the non-academic world, the faculty can benefit from greater inspiration and practical insights that can, in turn, benefit students.

As Hong Kong transitions into a more creative and innovative paradigm, it should also progress towards a more co-operative society, sharing the burden of education with teachers and parents alike. Continuous teacher training and curriculum upgrades, particularly with regards to creativity and innovation, are certainly important. However, as children and teenagers spend more time with family than in school, and parents have an understated effect on the education of their children, parents should start becoming actively involved in their children's development. The successes of many education systems around the world have demonstrated the pivotal role parents play in giving children the opportunities, resources and impetus to be creative and innovative [see **Exhibit 8** for a prime example]. Parents can also be a role model in practising lifelong learning, setting for their children a positive example of learning. A shift in mindsets also needs to occur, such that students who may not perform well in traditional academic settings and standards should not be labelled as “losers” or “rejects”. Just because the current education system has a narrow catering to learning does not mean that students that fail in it are incapable of learning. A successful education system is one that unleashes the fullest potential in all its students, wherever the potential may be. Such a shift in mindset should begin at home with the parents.

Other segments in society also play a role in education. The sooner students are exposed to the professional world after education, the better prepared they become. Greater interaction between the business community and the education community generates mutual benefits: businesses gain access to better-prepared graduates to fill the ranks, academia gets updated on the latest in the professional world. The resulting synergy will help society as a whole to step into a higher gear on creativity and innovation.

With creativity and innovation brewed by a reformed education system, Hong Kong “will embark upon a new journey for a golden decade... Hong Kong will shine even more as a global metropolis”.⁸⁹

⁸⁹ 2007–08 Policy Address of the Chief Executive of Hong Kong (2007) “A New Direction for Hong Kong”, <http://www.policyaddress.gov.hk/07-08/eng/p122.html> (accessed 1 November 2007).

EXHIBIT 1: WORLD'S TOP ECONOMIES RANKED BY GDP PER CAPITA ("PPP")

Rank	Country	GDP per capita (PPP), US\$	Date of information
1	Luxembourg	71,400	2006 est.
2	Bermuda	69,900	2004 est.
3	Jersey	57,000	2005 est.
4	Equatorial Guinea	50,200	2005 est.
5	United Arab Emirates	49,700	2006 est.
6	Norway	46,300	2006 est.
7	Guernsey	44,600	2005
8	Ireland	44,500	2006 est.
9	United States	44,000	2006 est.
10	Cayman Islands	43,800	2004 est.
11	Andorra	38,800	2005
12	British Virgin Islands	38,500	2004 est.
13	Iceland	38,000	2006 est.
14	Hong Kong	37,300	2006 est.
15	Denmark	37,000	2006 est.
16	Canada	35,600	2006 est.
17	Isle of Man	35,000	2005 est.
18	Austria	34,600	2006 est.
19	San Marino	34,100	2004 est.
20	Switzerland	34,000	2006 est.

Source: CIA: The World Factbook (2007) "Rank Order – GDP – Per Capita (PPP)", <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html> (accessed 31 August 2007).

EXHIBIT 2: EMPLOYMENT OF CREATIVE INDUSTRIES IN HONG KONG

	March 2005*	March 2004	March 2003	March 2002	2002–2005 cumulative annual growth rate (%)
Advertising	17,523	18,862	19,038	20,461	-5
Antiques, crafts, jewellery and related articles	22,939	21,020	19,561	20,323	4.1
Architectural, surveying and project engineering services	5,974	5,869	5,981	6,257	-1.5
Business services (including design)	6,260	6,355	4,899	5,659	3.4
IT and related services	33,042	33,808	32,679	34,953	-1.9
Libraries, art galleries and cultural services	421	467	427	389	2.7
Motion pictures and other entertainment services (including radio and TV)	7,950	8,274	8,304	8,620	-2.7
Photographic studios	3,592	3,642	4,348	4,649	-8.2
Publishing, printing and allied industries	48,966	49,056	49,016	53,472	-2.9
Theatrical production and entertainment services (including music and performing arts)	15,803	14,668	14,454	15,228	1.2
Total	162,470	162,021	158,707	170,011	-1.5
<i>% of total employment</i>	4.89%	4.99%	4.94%	5.29%	-

* March 2005 (latest available) figures are used.

Source: Hong Kong Census and Statistics Department.

EXHIBIT 3: PRELIMINARY MAPPING OF HONG KONG'S CREATIVE INDUSTRIES

Industry category	Sub-sector
Advertising	Advertising companies and agencies, public relation services, market research companies, advertising services, n.e.c.
Architecture	Architectural design, landscape design and structural engineering
Art, antiques and crafts	Jewellery manufacturing, antiques, works of art and crafts, galleries, museums and visual arts (partial)
Design	Designing services, including fashion design, graphics, products, interior, and design services for furniture, shoes, toys and related articles
Digital entertainment	Interactive leisure software (games), animation, education and entertainment software
Film and video	Motion and video picture companies, film studios, film processing, and cinemas and movie theatres, etc.
Music	Music recording and production, musical performance
Performing arts	Performing arts, live performance and theatrical entertainment
Publishing	Printing, publishing and allied industries (including comics and multimedia publishing)
Software and computing	Software consultancy, software services, data processing, web design and internet applications, etc.
Television and radio	Television and radio production and related services

Source: Centre for Policy Research, University of Hong Kong (2003) "Baseline Study on Hong Kong's Creative Industries", Study for the Central Policy Unit, Hong Kong government.

EXHIBIT 4: EXPORTS OF CREATIVE INDUSTRIES

	2005*	2004	2000	2000–2005 cumulative annual growth rate (%)
Figures in HK\$ million unless otherwise specified				
Other business and personal services (including design)	5,605	4,604	1,714	26.7
Advertising, marketing research and public opinion polling services	4,117	4,076	6,386	-8.4
Computer services	2,060	1,550	227	55.4
AV production and related services	1,907	1,990	316	43.3
Royalties and licence fees	1,907	1,696	832	18.0
Architectural, engineering and other technical services (architecture)	1,035	929	183	41.4
Other personal, cultural and recreational services	194	266	84	18.2
Total	16,825	15,111	9,742	11.5
<i>Share of total services exports (%)</i>	<i>3.5</i>	<i>3.6</i>	<i>3.1</i>	<i>-</i>

* 2005 figures are the latest available figures.

Source: Hong Kong Census and Statistics Department.

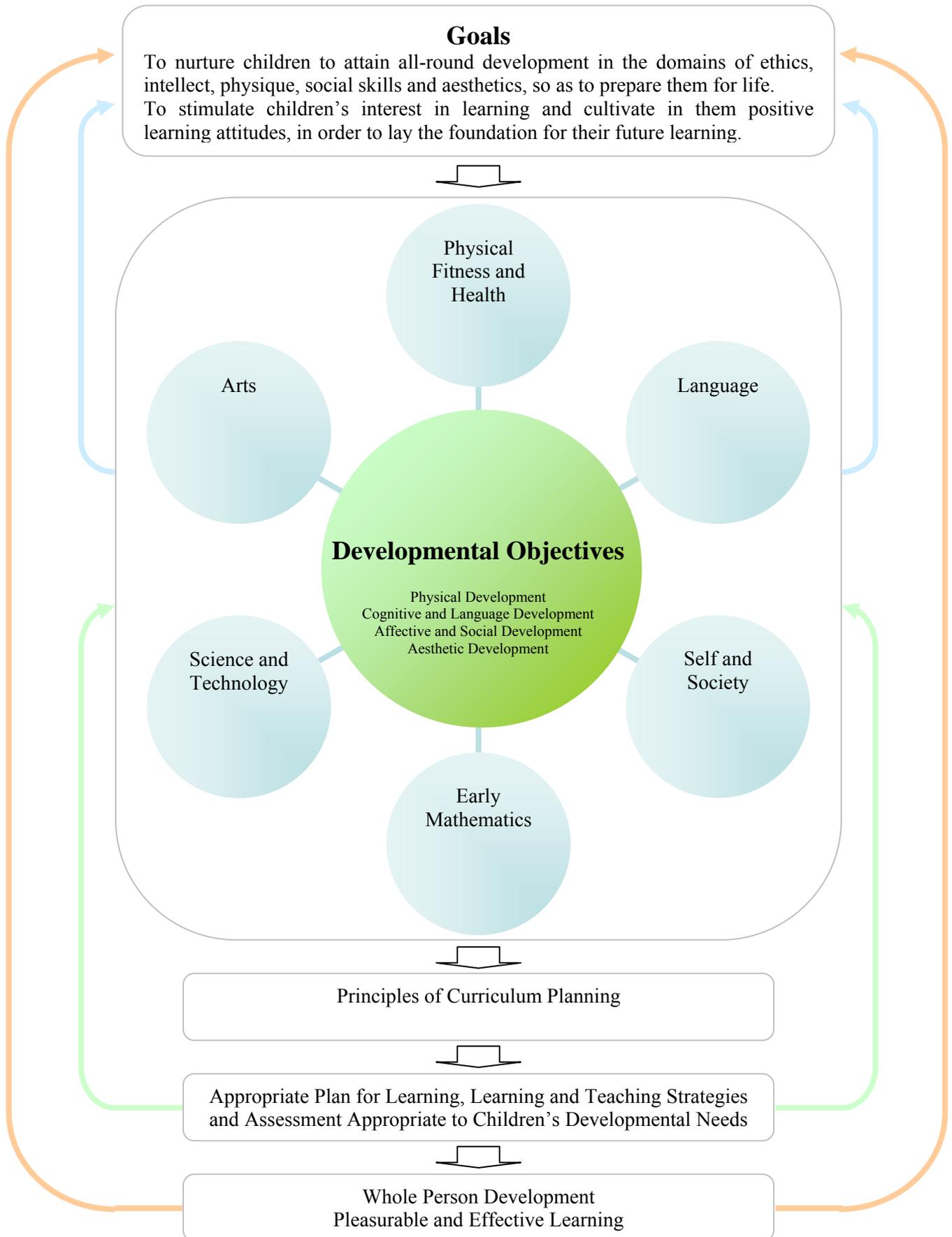
EXHIBIT 5: NOKIA AT THE START OF JORMA OLLILA'S TENURE AS CEO

Nokia's net sales and operating profit January–May 1992, FIM million

Business divisions	Actual	Variance with budget	Variance with previous year
Net sales			
Consumer electronics	2,000	-186	-464
Mobile phones	1,131	29	-25
Telecommunications	790	-26	82
Cables and machinery	1,678	25	-220
Basic industries	494	-31	-170
Others	59	-22	13
Nokia Group	6,077	-219	-560
Operating profit			
Consumer electronics	-303	-93	-242
Mobile phones	142	71	57
Telecommunications	1	73	20
Cables and machinery	-24	-18	-40
Basic industries	72	9	-14
Others	-88	-5	0
Nokia Group	-200	38	-219

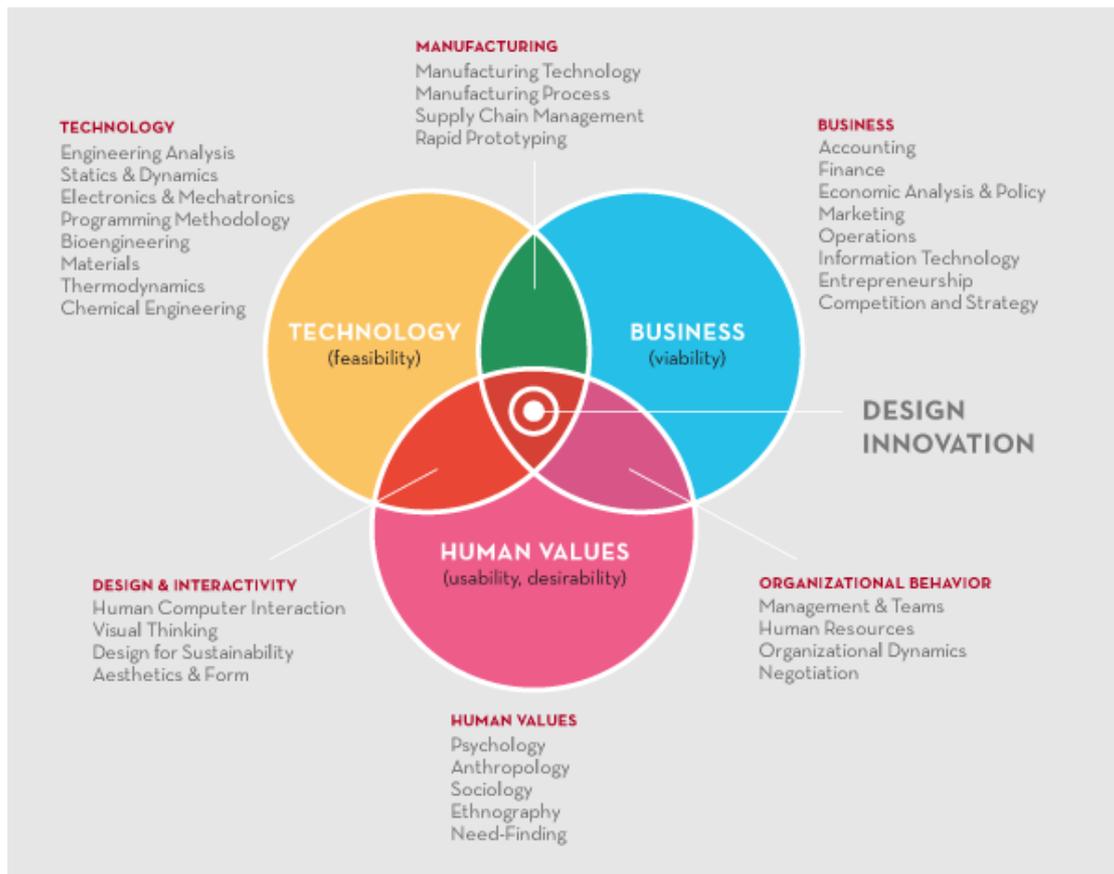
Source: Häikiö, Martti (2001) *Nokia: The Inside Story*, Pearson Education: UK, p. 143.

EXHIBIT 6: HONG KONG'S PRE-PRIMARY EDUCATION CURRICULUM FRAMEWORK



Source: Education Bureau (2006) "Guide to the Pre-Primary Curriculum", p. 17.

EXHIBIT 7: INSTITUTE OF DESIGN AT STANFORD'S MULTI-DISCIPLINARY APPROACH



Source: Institute of Design at Stanford.

EXHIBIT 8: THE REGGIO EMILIA APPROACH TO EDUCATION

In the Emilia Romagna region in northern Italy, a pedagogy that has come to be known as the “Reggio Emilia approach” has caught the attention of the international education community. Tracing its roots to the local villagers, the Reggio Emilia philosophy is based on a set of children-centric principles:

- Children must have some control over the direction of their learning.
- Children must be able to learn through experiences of touching, moving, listening, seeing, and hearing.
- Children have a relationship with other children and with material items in the world that children must be allowed to explore.
- Children must have endless ways and opportunities to express themselves.

The belief is that the central reason that a child must have control over his or her day-to-day activity is that learning must make sense from the child’s point of view.

Parents are a vital component to the Reggio Emilia philosophy, as they are viewed as partners, collaborators and advocates for their children. Teachers respect parents as each child’s first teacher and involve parents in every aspect of the curriculum. It is not uncommon to see parents volunteering in Reggio Emilia classrooms throughout the school. This philosophy is not contained in the classroom. Most parents who choose to send their children to a Reggio Emilia program incorporate many of its principles in their parenting and home life.

Teacher autonomy is highly valued, as evidenced by the absence of teacher manuals, curriculum guides or even assessments. The lack of externally imposed mandates is balanced by the imperative that teachers become skilled observers of children in order to inform their curriculum planning and implementation. Teachers routinely divide responsibilities in the class so that one teacher can systematically observe, take notes and record conversations between children. These observations are then shared with other teachers. Teachers of several schools often work and learn together as they explore ways of expanding on children’s spontaneous activities.

The physical environment is also crucial, and is often referred to as the “third teacher”. Major aims in the planning of new spaces and the remodelling of old ones include the integration of each classroom with the rest of the school, and the school with the surrounding community. School campuses are generally filled with indoor plants and vines, awash with natural light. Classrooms open to a central piazza, kitchens are open to view, and access to the surrounding community is assured through wall-size windows, courtyards and doors to the outside in each classroom. Entries capture the attention of both children and adults through the use of mirrors (on the walls, floors and ceilings), photographs and children’s work accompanied by transcriptions of their discussions. The same applies to classroom interiors, where displays of project work are interspersed with arrays of found objects and classroom materials. The ultimate aim is to create an environment that informs and engages the viewer.

Other supportive elements of the environment include ample space for supplies, frequently rearranged to draw attention to their aesthetic features. In each classroom, there are studio spaces in the form of a large, centrally located atelier and a smaller mini-atelier, and clearly designated spaces for large- and small-group activities. Dotting the campus are spaces to create opportunities for children to interact, such as a single dress-up area in the central piazza, classrooms connected with telephones, passageways or windows, and lunchrooms and bathrooms designed to encourage community interaction.

Forum on “From Creative Industries to Creative Economy: The Role of Education”

Date : 11 July 2008 (Friday)
Time : 2:00pm – 4:00pm
Venue : Chamber 1B, Innocentre
(72 Tat Chee Avenue, Kowloon Tong, Kowloon, Hong Kong)

A forum titled “From Creative Industries to Creative Economy: The Role of Education”, hosted by the Hong Kong Design Centre, was held on 11 July 2008. The purpose of the forum was to present the paper of the same title and to involve the various sectors of Hong Kong’s society in a discussion over the future of education in the city. 80 attendants who were stakeholders representing the creative industries, the education sector, the business sector and the government were in attendance and, in some instances, participated in the vibrant discussion. The forum was moderated by Professor Ali Farhoomand, director of the Asia Case Research Centre of the University of Hong Kong. He was joined by panelists: Ms. Ada Wong, Members of Board of Directors of Hong Kong Design Centre and Supervisor of the Hong Kong Institute of Contemporary Culture at the Lee Shau Kee School of Creativity; Mr. Po Chung, Chairman Emeritus of DHL Express (Hong Kong) Ltd.; and Mr. Mathias Woo, Executive Director of Zuni Icosahedron. Below is a summary of the panel and forum discussion.

Mr. Po Chung shared from the point of view of an employer, a parent and a university lecturer. Over the past two years, he had been in dialogue with various universities in Hong Kong on the transition from a three-year to a four-year undergraduate programme. He would like to see them to make use of the extra year under the new programme for liberal education, exposing students to a broader range of disciplines that includes psychology, sociology, economics, political science, western civilization, eastern philosophy and health. He felt that if the elementary and secondary education provided narrow-thinking education, it was imperative for tertiary education to expose students to how different disciplines and domains solve problems and look at new problems. He was optimistic that the forum and similar discussions would lead to meaningful changes in Hong Kong’s primary and secondary education in the next few years.

Mr. Chung believed that “there is nothing new under the sun” and likened creativity to taking old things from one domain and applying to a new domain. He thought that it was possible to make an uncreative individual more creative simply through “looking around, listening to people and then spending some time to reflect what you can take from an old domain and use it in a new domain”.

He also shared the DHL human resources philosophy. Despite the general pool’s infamy for being generally uncreative, it was often the recruitment target of DHL, which boosted creativity among employees in three ways. Firstly, decision making was pushed to the lowest level to give employees daily opportunities to make decisions and to learn more on the job. Employees were also asked to be as independent as possible in finding solutions to their work. Secondly, strategic thinking was introduced at all levels of management. By giving managers the big picture and a helicopter view, DHL aimed to provide employees the resources to make effective decisions and generate creative solutions. Thirdly, DHL’s corporate value was an extension of the family value. Given that mistakes were virtually inevitable and that family was the safest laboratory where mistakes were most tolerated, if such an assurance could be extended to the corporate level then employees could work with greater creativity without constant fear of making mistakes. He added that DHL employees were encouraged to share their learning from mistakes with colleagues, which helped create a more creative working environment.

Ms. Ada Wong found the paper itself to be creative in that it originated from a business school. She felt that creativity should be examined in a more integrated fashion in terms of economics, culture and technology.

Ms. Wong appreciated the good intentions of education officials in “loosening up” the education system and adopting a wider curriculum. However, she observed that the community at large—parents, schools, school principals and teachers—still nursed an obsession with getting students through the education system in an overly efficient manner. She saw parallels between this obsession and the term “fault-phobic” that was mentioned in the paper. Singling out the term as the core problem of the present education system, she questioned how students could be taught not to be afraid of experimentation and mistakes. She also attributed the fault-phobic mentality to the declining tolerance in Hong Kong society over the past few decades.

She hoped to see rectifications with the upcoming 3-3-4 system, especially in doing away with the mindless pursuit of rote learning and paper qualifications. Yet until there was a successful substitution, she reckoned that people would still fall back on rote learning. Citing an embarrassing example of Hong Kong exchange students failing to adapt to overseas stay, Ms. Wong criticised both parents and the education system for “nannying” students to the point of inhibiting their freedom and maturing. In breaking away from rote learning and a fault-phobic mentality, she proposed a change in the education system from the top. If the various universities in Hong Kong and the various academic disciplines could collaborate, it would be very innovative and a first for Hong Kong. Drawing on her experiences attending a workshop at Stanford University, Ms. Wong saw the importance of the different disciplines collaborating with each other in producing a comprehensive education. Once tertiary education had demonstrated the advantages of inter-disciplinary collaboration, the practice would filter down to secondary, primary and even pre-primary education.

Mr. Mathias Woo began by sharing an experience during a retreat in Kyoto by a group of young architects from around the world. They agreed that the best place for architects to practice was Spain and Scandinavia, while the worst was Hong Kong. Hong Kong was deemed worst because the practice was too result-driven, which effectively cut out the creative process. He drew parallels with Hong Kong’s secondary education, which focused on the model answer more than learning and inadvertently undermined the students’ creative capacity. He appreciated the cases examined in the paper—Finland, Spain and South Korea—for being good examples of migrating from manufacturing-based to innovation-based economies. However, he cautioned that Hong Kong should do more and talk less in achieving greater creativity. In his view, a creative economy was not creatable; instead, it must come from a creative culture.

In terms of creative culture, Mr. Woo felt that supply should create the demand, rather than the other way round. For example, Harry Potter was not written in response to an existing demand in the market. In examining the makeup of a creative culture, he identified a misconception that creativity could be taught. Creativity could not be taught: only the skills to generate creativity could be. He was wary about “loosening” the education system, fearing that it would only create indiscipline. The media and popular culture, to him, was more influential in shaping the minds of students than the education system, especially when students tended to treat education as merely a stepping stone to landing a job. He pointed out that a pop star visiting a university campus would generate much more excitement and attendance than a Nobel laureate. That reflected a consumer mentality in the students, with which they went into class expecting to be entertained but not to learn. He blamed such a mentality on the attitude problems SME employers were reporting of recent graduates, especially in the past five years. Some of these graduates refused to learn on the job, often opting to switch jobs instead of putting in serious effort. The high turnover left employers

little choice but to limit training and delegation. A vicious cycle thus began, which had been eroding Hong Kong's competitiveness. He therefore concluded that if creativity was to be developed in Hong Kong, the mass media must first be worked on. At present, the mass media had negatively impacted the quality of the Hong Kong people, and the situation needed to be rectified.

Professor Farhoomand responded that loosening up the education system did not equate to "free for all". Taking an evolutionary point of view, he said that it should be a case of ordered chaos, from which creativity would come. Under such principle, students should be allowed to experiment, but at the same time discipline should be enforced to create a holistic view.

Professor Davies Howard, Associate Dean of Undergraduate Programmes & Professional Development of Graduate School of Business, Hong Kong Polytechnic University, kicked off the response from the floor. While he was delighted to see more attention being paid to creativity and education, he was more reserved with business innovation. He pointed out that the two things identified in the paper as inhibiting creativity—short term business orientation and a top-down management—had been the bases of Hong Kong companies' competitive strength. In the desperate circumstances of the 1950s and 1960s, Hong Kong companies perfected the Original Equipment Manufacturing ("OEM") model that had since served the economy well for about 40 years. There had been many predictions about Hong Kong losing its competitiveness due to a lack in creativity, yet the Hong Kong economy continued to forge ahead. He wondered whether doing away with the inhibitors to creativity would also remove the very things that underpin the strength of Hong Kong's economy.

Professor Farhoomand, however, cited the trappings of the failure of success. From an evolutionary point of view, whenever there was a successful formula, the longevity of that successful formula was rather short-lived. Any advantage that every dynamic system had was temporary. He said it would be erroneous and misleading to predict success based solely on historical performance, because that would assume a static view of the situation.

Mr. Po Chung added that since his return to Hong Kong in 1969, he had witnessed three creativity booms in Hong Kong. The first boom was when the toys industry picked up in Hong Kong. Many Hong Kong companies in other industries quickly exercised their entrepreneurial and creative skills to adapt to the new-found success of Hong Kong's toys industry. The second boom was when Hong Kong transitioned from an authoritative culture to a more egalitarian culture, in which every level of society had more equal say. In that sense, he reckoned Hong Kong to be more creative than Japan and South Korea. For the third boom, he said Hong Kong went from a manufacturing-based economy to a service-based economy practically in about seven years, during which entrepreneurial and creative input was evident. He found the Hong Kong banking and real estate sectors to be most creative worldwide. He conceded that Hong Kong might not be as entrepreneurial as mainland China, yet that was largely because China now was like Hong Kong in the 1960s. The right kind of environment would foster the right kind of creativity.

In addition, he thought that creativity need not be for everyone. There should just be a dependable workforce to realise the visions of the creative few.

Mr. Victor Lo, Council Chairman of the Hong Kong Polytechnic University and Chairman of the Hong Kong Design Centre, approached the subject from two angles. Firstly, he was concerned about the quality of students, as highlighted by their poor exposure to arts, culture and social cultural studies. He felt that the lack of breadth in education would result in just training large numbers of design technicians instead of designers. He also observed that there was limited depth in the study of art and culture, with so few graduates in these disciplines at the masters level.

Mr. Lo pointed out that one of the underlying problems was the current funding system for education. Since the government stopped funding taught master degree programmes, the universities had to ensure that the programmes offered could break even quickly. The conservative approach prevented the universities from venturing into unproven new programmes and offering more classes. The result was that the system was always trying to meet yesterday's shortages. He felt that a good education system should be ahead of the market, not behind the market. It should also avoid being inward-looking, since there was a tendency among the universities in Hong Kong to think in terms of each other when there were larger contexts of China and Asia to be considered.

Secondly, he was alarmed by the lack of awareness in the community about the long-term effects of insufficient public education in art and culture. The indecision over the West Kowloon Cultural District and limited funding for the proposed M+ museum would ultimately hurt the grassroots. That was because while the well-off families in Hong Kong could find exposure to art and culture overseas, the grassroots relied on accessible museums and programmes for education in these disciplines, without which it would be difficult to achieve a desired level of creativity in the population.

Mr. Mathias Woo echoed that the demand for creative industries in China held great potential for Hong Kong. Taking reference from creative hubs like New York and London, where schools related to the creative industries trained more people than what was required locally to meet regional demands, Hong Kong should also train up more people to cater to the demand in China. He would also like to see more types of design school in addition to government-funded design schools, so as to create an ecology to generate a creative culture. Finding the local university student population too homogeneous, he suggested that the ratio of local students be lowered to half, with the rest made up of mature and international students.

Ms. Nansun Shi, Executive Director of Film Workshop Co. Ltd., expressed the growing frustrations of film makers in Hong Kong. While the city had the commercial and legal infrastructure to support film making, the growing investment of attention and resources in the past decade had instead yielded negative growth for the film industry in Hong Kong. She attributed the attrition to the declining quality of local graduates entering the industry. She found that their language skills were poor, their film knowledge was thin and their enthusiasm to learn was lacking. By contrast, Taiwan appeared to be more promising for film makers, thanks to the "cultural thickness" there with abundance in theatre, music, dance, performance, as well as quality graduates and advanced technology to support film making.

Mr. Alex Fung, Vice President of Hong Kong Design Institute and Head of Department of Design made a quick remark that amidst all the talk, what people seemed to have missed was fun. Hong Kong people were too serious, so were the government, the businesses and the universities. Creativity required fun. He found that it was vital to treat making mistakes and finding solutions as fun. Looking at the kindergartens, he saw that the children were not having fun and felt very sorry for the situation.

Mr. Po Chung added that even artistic or creative pursuits among Hong Kong students did not produce creativity as intended, mostly because fun was taken out. He illustrated with an example of his daughter's piano teacher not being able to pinpoint a specific note if it was not printed on the score. Hong Kong students, even when learning art and culture, tended to be too mechanical, perhaps as a result of not having the time and leisure to fully explore the crafts. He hoped that as a society, Hong Kong could create the time and fun for students to learn the crafts properly, and train up teachers that could teach the creative side of the crafts instead of just the mechanical or technical side.

Professor Farhoomand chipped in saying that, if it was any consolation, some of the students that he interviewed in mainland China were just as blind as their Hong Kong counterparts in choosing their area of studies. Many of them just followed the wishes of their parents, exhibiting little creativity and understanding of their own, similar to the predicament usually associated with Hong Kong students.

Asked to make a concluding remark on behalf of the panel, Ms. Ada Wong highlighted the importance of the 3-3-4 system to the educational reform. Universities should be given a free hand in deciding the programmes and objectives for each faculty and school. Despite the merits of central coordination body, tertiary education in Hong Kong could not benefit from rigid resource management and curriculum development because future demands of the society for education was unpredictable. The best way for Hong Kong's education to respond to an ever-changing society was to integrate flexibility into the 3-3-4 system, so that the various institutions could adjust more efficiently and creatively.

In closing the forum, Mr. Allan Chiang, CEO of the Hong Kong Design Centre, reiterated his Centre's commitment to promoting a multi-disciplinary approach to daily problem solving through the integrated workings of the left brain and the right brain. With a mission to help Hong Kong create value through design and innovation, the Centre aimed to involve as many stakeholders as possible. He hoped that the forum could kick off a series of hot discussions in creative education. Everyone in Hong Kong had a part to play in building a better future for the city.

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