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Innovation and creativity in digital content industries in Australia and China: policy and practice

Abstract

This paper will examine how policy in Australia is underpinning the development of a national innovation system in the cultural industries. I make distinctions between innovation and creativity. Specific examples come from digital content industries in Australia. I will suggest that many of the policies that Australia has adopted, and is considering, have relevance for China. While there are distinctions that can be drawn between *cultural industries* and *creative industries*, in this paper the terms are used interchangeably.

Biography

Michael Keane is a post-doctoral research fellow at the Creative Industries Research and Application Centre (CIRAC) at the Queensland University of Technology in Australia. Research interests include broadcasting policy in East Asia, innovation in creative industries, television format trade in Asia, and creative industries internationalization in East Asia. His most recent books are Media in China, Consumption, Content and Crisis, (with Stephanie Hemelryk Donald and Yin Hong eds.), London: RoutledgeCurzon (2002), and Television across Asia: Television Industries, Programme Formats and Globalization (with Albert Moran eds.), London: RoutledgeCurzon (2003); Innovation in Australian Arts, Media and Design: Fresh Challenges for the Tertiary Sector (with R. Wissler, B. Haseman and S. Wallace) Flaxton: Post Press (2004). He is currently working with Koichi Iwabuchi and Anthony Fung on Out of Nowhere: New Television Formats and the East Asian Cultural Imagination (Hong Kong University Press, forthcoming late 2004) He is currently working on a three year Australian government funded research project, Internationalising Creative Industries: China, the World Trade Organisation and the Knowledge-based Economy.

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Introduction

For over a decade national governments in developed countries have focused attention on strategically harnessing innovation through national innovation systems (NSI). In OECD countries there has been much debate about the role of innovation systems. But what is an innovation system? And how is it relevant to the cultural sector?

In this paper I examine the concept of *innovation* and *innovation systems* as these apply to the cultural industries. While there are distinctions that can be drawn between *cultural industries* and *creative industries*, in this paper I use the terms interchangeably. I look at an innovation system approach drawn from the very ‘young’ digital content industry sector in Australia. I identify impediments and opportunities, and I make some observations from Australia’s experience as a small geographically distant market with aspirations for export success. I conclude by making some broad recommendations for China’s development.

1. Origins

The origins of innovation policy and innovation systems can be located in the information society discussions of the 1950s. In 1953 Paul Hatt and Nelson Foote proposed sub-divisions of the service or tertiary industry sector into quaternary and quinary sectors based on information management (4th sector) and knowledge generation (5th sector). In the 1960s Fritz Machlup’s seminal *The Production and Distribution of Knowledge in the United States* argued that it was impossible to make a clear division between physical and mental labour (in Preston 2001: 52). Machlup coined the term ‘knowledge-producing workers’; he saw these as comprising ‘transporters, transformers,

processors, interpreters, analysers, and original creators of communications of all sorts (1962: 383). Here we see the origins of the knowledge society concept.

In the 1970s, Daniel Bell's writings on post-industrial society were influential in pushing the idea of a new social order. While Bell wrote primarily about technological change, he also concerned himself with culture -- *The Cultural Contradictions of Capitalism* was the title of one his books. Bell argued that culture had become detached and self-determining and in particular that the avant-garde was shaping and leading audiences rather than the market (Bell 1976). Culture was moving fast, changing fast, and audiences were diversifying. By the year 2000, the rate of turnover of cultural products was unprecedented. It wasn't so much the avant-garde or the market that were now shaping and leading; audiences and consumers were driving the innovation of services in interactive formats that included reality TV, mobile phone, and SMS applications. Innovation was occurring at a fast rate due to both technology (push) and consumption (pull). Michael Storper, an economic geographer, argues that in order to understand and promote innovation we need to examine both demand and supply sides (Storper 1997).

The cultural industries, with their increasing turnover of products and services, as well as their integration into the global economy, represent a unique *innovation environment*. In Australia the cultural industries are valued at up to AUD\$25 billion a year. These industries are growing rapidly: in high growth areas such as digital content and applications they are growing at twice the rate of the overall economy. Many Australians are involved in the creative industries, both full-time, part time, and as a hobby. 2.5 million Australians say they work in these areas. 900,000 of these earn money from their participation (Cunningham 2004).

2. Innovation

'Innovation is the souls of a nation's progress.' (Chinese slogan)

Innovation assumes importance as globalization impacts upon bottom-lines. What I mean by this statement is that globalization reduces profit because products that are successful can be copied anywhere in the world (with appropriate localization if necessary). Moreover, they are produced more cheaply because the costly R&D has already been done. Innovation and intellectual property thus assume a key role. If you can develop a new product and achieve some first-mover advantage you will be ahead of the field. And this is why large companies like Motorola, Nokia, and Sony invest so much money in research and development. While R&D occurs in these large companies it also spills over into businesses that cluster in a particular location. The best examples are Silicon Valley and Hollywood. Storper writes of the centrality of learning and interaction. He calls this 'innovation as collective action'. Learning through processes of interaction creates dynamic advantages so that the force of imitation is outrun by the pace of innovation (Storper 1997: 107).

The OECD distinguishes three broad types of innovation:

- Strategic innovation: businesses will look to particular markets to develop innovations. For instance, the rate of innovation in mobile phone design and content in China is strategic and China is also a testing place for new value-added services;
- Research and development (R&D): Huge amounts of capital are invested by companies. This ranges from basic research that extends knowledge of fundamental processes through to experimental development of product concepts (prototype design, development and testing);
- Non R&D innovation including: identifying new products and technologies; linking products and services in innovative ways to capture new market/business opportunity; piloting new production facilities; buying in technical information or skills; developing human skills through formal and informal training; investing in equipment or inputs which embody innovation undertaken by others (including

from overseas); and implementing changes to organizational and management systems.

(CIRAC and CUTLER 2003)

3. Innovation systems

Innovation systems are normally equated with technological progress: in areas like information technology, biotechnology, and telecommunications.

However, the questions we need to focus on today are:

- What does an innovation system look like in the cultural industries?
- Are there lessons that the cultural sector can learn from the knowledge-economy?
- What, if anything, can Australia's cultural industries innovation system teach China?

The relationship of the knowledge economy to innovation in cultural industries cannot be underestimated. The director of the Creative Industries Research and Applications Centre in Brisbane, Stuart Cunningham rephrases the conventional problematic. He says: the question should be 'not on the way humanities, creative arts and social sciences analyse and manage the knowledge-based economy, but on their central role *in* it. Creative production and cultural consumption are an integral part of the new economy, as are the disciplines that educate, train and research these activities' (Cunningham 2004).

In a recent public address, Evan Thornley, the founder of Looksmart International, an Australian-based Internet company, noted that in Australia there is a widespread view that scientific knowledge is somehow more important than that of the humanities, despite the obvious fact that Australia's failures to build global markets have been largely failures of sales, marketing, and distribution (Thornley 2004: 27). He says that these failures are cultural issues -- not failures in our scientific or technological capacity.

Stuart Cunningham takes this point further. He says that ‘all modern economies are consumption driven...and the social technologies that manage consumption all derive from the social and creative disciplines’ (Cunningham 2004). His point is that the importance of consumption is reflected in the social technologies that are applied in order to make products and services more marketable, more innovative, and more pleasing to the eye. This is where the arts, media, and design disciplines come into focus.

In fact, many cultural projects remain within the realm of ideas because there is inadequate investment to facilitate their development and a lack of support mechanisms such as marketing, distribution, and promotion to add value. In China these arguments ring true, and there is similar momentum – a shift to understand how the cultural market has changed and how the cultural industries depend on a new kind of cultural knowledge. Miao and Chen (2003: 85) have written:

In debates about culture and in important policy decisions impacting on the cultural industry it is hard to hear the expert voices of economists and managers - those who own or invest in cultural enterprises - and especially those without a background in the liberal arts

Miao and Chen (2003, 85).

The knowledge of how cultural markets work is important because the value of cultural goods is not standardised. Speaking of the value of cultural output, Throsby (2001) argues that it is ‘various and variable’ (29). The measurement of cultural value can be broken down into several components, each with particular value: aesthetics, spiritual, social, historical, symbolic and authenticity (159). He contends that cultural value also permeates cultural identity, diversity, creativity, cultural life of the community, regional development, and heritage tourism (148).

In recent times national governments have come to appreciate that the cultural sector is integrating with the service economy. Indeed, the creative disciplines of art, media, and design are exemplary forms of knowledge-based production. In this sense, they share some similarities with the hard sciences. For example, they draw upon specialized resources, expertise, and communities of practice. The kinds of practices that are found in the creative disciplines play an important role in creating environments that simulate enquiry, sharing and diffusion of ideas, recombination, and synthesis.

The re-evaluation of the creativity disciplines is demonstrated in the following sketch, which illustrates the synergy that is acquired from linking the *knowledge economy* and the *cultural economy*. The cultural economy is different in many respects from the broader economy. Alan Scott defines the cultural economy as ‘an incoherent collection of activities’ that are bound by three features. First, they have some relationship to the creation of aesthetic and semiotic content; second, the cultural economy is subject to Engel’s Law, which means that as disposable incomes rise, so does consumption of cultural goods and services; and third, the production of these goods and services is typically found in specialised clusters or industrial districts (Scott 2003).

While the creative process (the methods by which these creative forms of knowledge come into being) are fundamentally comparable to the hard sciences (recombination, diffusing, trial and error, synthesis), the creative disciplines draw their inspiration from a repository of meaning that has accrued over time. In this sketch this repository is referred to as the semiosphere - a concept coined by Yuri Lotman to refer to the universe of symbolic content (1991). The technosphere is suggested as a concept that informs much research and development thinking. Moreover, for the cultural economy and the knowledge based economy to interact requires an understanding of the relationship between the semiosphere and the technosphere, between the micro-environment and infrastructure, and between creativity and innovation.

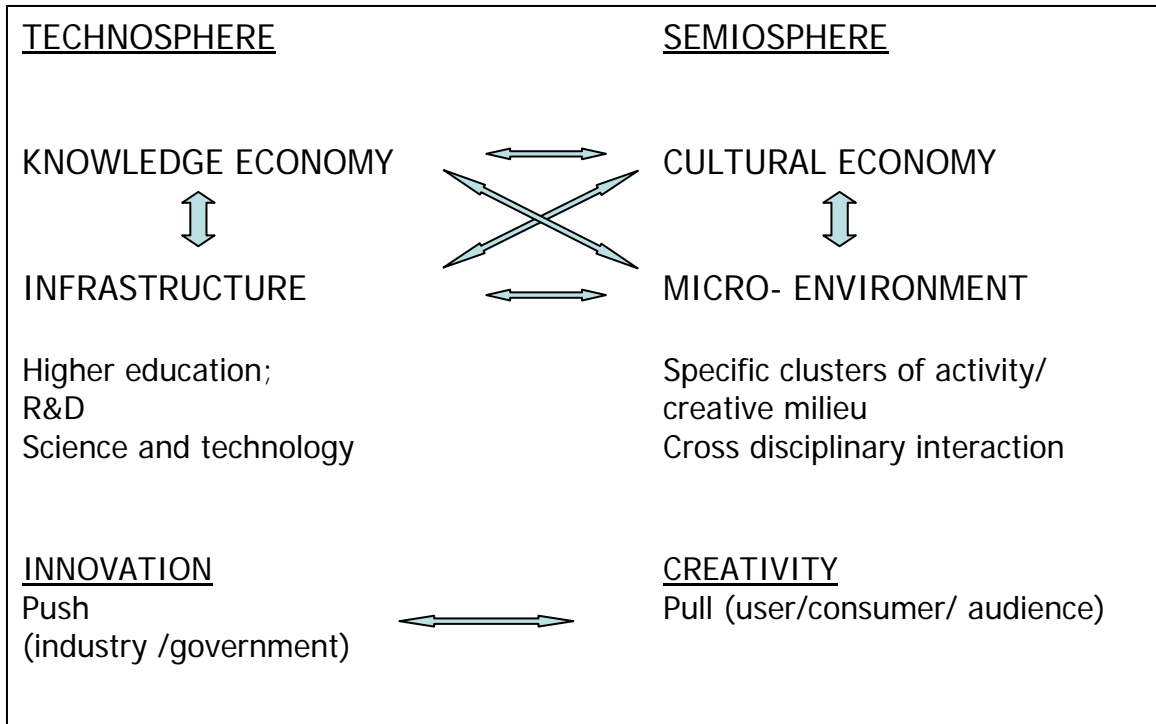


Figure 1: Inter-relationships between innovation in knowledge economy and cultural economy

4. Digital content production in Australia

The need for an innovation system in the cultural industries is illustrated by an investigation of the digital content industries. The range of products and services that are described as digital content industries are extensive and include:

- *interactive multimedia,*
- *digital film and television production and post-production,*
- *interactive and digital television,*
- *digital video arts production,*
- *computer and online games,*
- *design and advertising,*
- *educational content production,*
- *digital publishing,*

- *digital and online music,*
- *digital applications.*

Many of these businesses are small and medium enterprises. Digital content industries are increasingly valuable to national economies. They are growth industries and they have global impact. That is, applications developed in one country can be marketed globally, in comparison to television and film, which is often location specific. So it is essential that governments recognise the importance of digital content industries. In addition, the marketplace is characterised by a small number of large players, in this sense replicating the traditional broadcast model. Few companies occupy the middle ground. The environment sees a fragmented base of small enterprises. This applies in China as well as in Australia.

5. Impediments and opportunities in digital content industries (Australia and China)

Technology

The foundation of digital content industries is advanced technology. In Australia a lack of venture capital for commercialisation in the content sector restricts innovation in digital content applications. The financial sector is unwilling to invest in unproven businesses. The domestic market is small so many digital content producers look to develop products that have an international uptake. However, high costs of broadband limit the capacity to develop R&D at the SME level. The Australian government allocated a mere 2% of R&D Start Grants to digital content industries in 2000/1. The cost of technology investment is high for SMEs who need to constantly upgrade. In addition, many public sector institutions have technology assets that are currently underused and policy at the moment does not allow SMEs to utilise public assets. Generally speaking, user uptake of digital content is rising, particularly in mobile platforms and applications; digital television uptake is slow, and subsequently the demand for digital content remains sluggish.

China also suffers from uncertainty in respect to investment in digital content industries. Much of the current investment in digital content industries comes from international companies based in Korea, Japan, the U.S., and Europe. China does have a large domestic market and the cost of access to digital technologies is constantly reducing through competition. The large domestic market however is a disadvantage as it does not provide incentive to target international markets.

Intellectual property

Digital content industries are exemplary copyright industries. In Australia copyright ownership is disproportionately balanced in favour of established interests (distributors, publishers). Content creators and users of digital content have less control over copyright, and many users resort to file sharing and illegal downloading. In addition, estimates are that 98% of copyright material is inactive (for instance material protected by the 75 year limit). Useful initiatives to free copyright for common use include The Learning Federation movement, which makes online material available for schools

<http://www.thelearningfederation.edu.au/tlf/newcms/d2.asp>

and the Creative Commons Movement, initially developed in the US, and which is currently being licensed through the Queensland University of Technology.

<http://creativecommons.org/projects/international/au/>

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In China the government recognises the importance of IP but as far as international digital content companies are concerned the protection regime is still undeveloped. This deters some investors, but more importantly it inhibits the development of Chinese creative content. Just as international businesses are reluctant to invest in China because of piracy concerns, local producers find that their ideas are copied before they can achieve return on investment.

Creative capital and skills

The term creative capital refers directly to the human resource environment. Richard Florida's 'creative class' divides creative capital into the *super creative core* and *creative*

professionals. Among his super creative core are arts, design, entertainment, sports, and media occupations (Florida 2002). Based on Florida's rankings the major Australian cities of Sydney and Melbourne would rank 7th and 8th places in the US. Australia rates highly on lifestyle and diversity but lacks significantly in comparison with the top US cities in innovation (patents per capita), human capital (percentage of persons with higher degrees), and high technology assets (CIRAC and Cutler 2003). In addition, the kinds of skills required in digital content industries are complex. They include high levels of technical knowledge, creativity, problem-solving ability, risk-taking, and an innovative mindset. Many universities are now addressing these concerns. In particular, the Creative Industries Faculty at the Queensland University of Technology places emphasis on interdisciplinary coursework and team-based research projects.

For China the issue of creative capital relates directly to education. Many of the brightest young minds in China are absorbed into industries such as advertising and media. The growth of MBA courses in China in recent years reflects a concern with understanding the contemporary marketplace. However, few MBA courses integrate concepts of creativity into their curricula. Another issue that is of concern is the style of education that has prevailed in China, where there is more emphasis on memorisation than problem-solving. The problem for China, like Australia, is how to build closer connections between educational institutions and the marketplace so that graduates are able to fit easily into the digital content industry marketplace.

Financial capital

Digital content industries such as video games, interactive media, and digital television production are expensive. Due to the untested nature of the digital content industries there are very few established business models. Reliance on cash flows has led to the collapse of many digital companies in Australia as well as globally. The costs of entry are often very high and the best option for many small enterprises is to provide services for larger companies that are well-resourced and networked. These large companies are referred to as *market organisers*. In Australia, they are the traditional broadcasting companies. The solution to the lack of finance for development of small enterprises is to make digital

content industries more attractive to investors. However, in order for this to happen there needs to be more 'success stories'.

In China digital content industries are still in an infancy stage. Internet companies such as Sina.com, Netease, and Sohu were early movers. Many of these companies are still reliant on business models that have no clear future. At the moment the profits for Chinese companies are coming from SMS and online gaming. Investment in digital content production is coming also from international companies such as Microsoft, Real Networks, Erickson and Nokia.

Network infrastructure

The take-up of broadband is crucial to the development of digital content industries. Korea has the fastest broadband network in the world, a lightning fast 20 mbps VDSL service, connections sufficient to receive live high-definition TV. Costs of access are relatively cheap and uptake of broadband is currently 78%, twice that of the US. It is no surprise therefore that Korean computer games have a competitive edge. In Australia, broadband remains expensive while digital TV is experiencing slow uptake. The lack of demand inhibits digital content producers.

China's situation is encouraging. By 2001 China's fibre optic network was 1.97 kilometres. In the same year a drop in the price of ADSL broadband stimulated adoption. The Chinese government has put in place infrastructure for e-government and many policies encourage the development of high-tech industries.

6. Recommendations for China

The discussion of digital content innovation systems is complex and this paper has merely presented an overview of challenges and opportunities. In addition to the points raised, we can identify the foundational principles of innovation systems: centres of excellence, improvements in R&D provisions, links between teaching and industry, and effective mentoring and networking systems. In many respects, China is fairly advanced

in these areas, although there are disparities across the country. The following are some further suggestions that reflect current thinking on innovation and creativity in Australia.

Develop a greater focus on creativity within policy and recognise the importance of creative industries.

China needs to focus on creativity and not just innovation. Cultural creativity is the foundation of growth in the service economy. In this regard China could do well to consider some of the creative industries policy developments already taking root in neighbouring countries. I have written about this elsewhere in more detail (Keane 2004).

Creative industries are more likely to be located in large cities where there are cosmopolitan populations. In this sense, there is a distinction apparent between the term ‘cultural industries’, which expresses a broader range of public cultural concerns.

Mitchell et al (2003) note that creative industries have three components. First, economic activity directly related to the world of arts (visual arts, performing arts, literature and publishing, museums, galleries, heritage sites, festivals etc); second, activity related to new media (broadcast industries, recorded music, software and digital media); and third, design related activities (architecture, industrial design, fashion, and product design). In China the focus is still very much on the first of these components. The contribution that the cultural industries make to innovation in China has yet to be fully recognised. More policy attention needs to be directed to mining and exploiting the reserves of creativity, particularly in regard to developing a consciousness of the importance of intellectual property in the new economy. The Creative China Industrial Alliance, whose slogan ‘from made in China to created in China’ is a very positive step in this direction (Liu 2004).

Further embed cultural institutions within the innovation system

China has made some huge advances in its cultural industries reform during the past decade. Reports from conferences and publications of the *Blue Book of China’s Culture* are important elements of the sharing of knowledge across different fields. China has also established ‘cultural innovation’ research centres in Shanghai Jiaotong University and Beijing University, and the Chinese Academy of Social Science is playing a leading role

in innovation. Richard Caves (2000: 202), the author of the first major study of the creative industries, considers innovation as ‘the visible tip of the iceberg of everyday creativity’. An important next step is to promote research linkages between cultural institutions, universities, and content industries. Inter-disciplinary clusters are needed. An example for consideration is the Creative Industry Precinct at the Queensland University of Technology. As well as teaching and research the precinct is home to the Australian centre for Interaction Design (ACID), which acts as an incubator for new ideas and applications in interactive technology. ‘Creativity institutes’ or centres linked to existing cultural industry research networks could be considered. They could be supported by provincial government and linked to leading universities. It is important to bring creativity and innovation together. In China much innovation lacks core creativity. People innovate and imitate other’s success. Of course, this also signals a need to effectively regulate intellectual property. Lack of protection of ideas in turn deters creative entrepreneurs from taking risks.

Promote cultural exports through clusters

China’s large domestic market has a retarding effect on the development of its cultural exports. In comparison to Australia, a country with a small market, where export is essential to scale economies, Chinese producers do not need to go looking for audiences and users. China is made up of 1.4 billion people, thousands of small markets, and hundreds of thousands of SMEs. This represents a unique problem of scale, which is exacerbated by duplicate construction (*chongfu jianshe*), the practice of replicating infrastructure across provinces. Fragmentation inevitably leads to imitation and inhibits innovation. New media clusters (*jituan*) may be the answer to this problem as long as the end goal is to facilitate cultural creativity and develop export quality products and services. In addition, the government could initiate a scheme to reward cultural exports through tax breaks.

Government must play a leading role in the purchase and procurement of Chinese cultural creativity

Liu Shifa (2004) has made the point that the Chinese government is the greatest investor in creative industries in China, as well as the greatest consumer of its products.

Government currently supports cultural industries but more can be achieved, including procurement of local (Chinese) content and more purchase of public art. State owned companies currently take up a large proportion of the market and private investment is lacking. As in Australia the government could invest more in infrastructure, including platforms that facilitate electronic services. Leading examples in the region are Singapore and Korea. The media clusters in China's large cities and provinces could be allowed to expand nationally rather than being just regional centres. They could also be obliged to make television windows available for innovative new content. In this way there would be a vehicle for innovative content.

Promote open content repositories to fuel creative activity

Open content repositories are important to the development of ideas. One project associated with the Creative Commons Movement in Australia is currently looking at how copyright licenses can be developed more flexibly to allow independent film makers and multimedia producers to utilise open source material. Content repositories enable digital story-telling and digital archiving of cultural legacies. In Australia we have an important Indigenous cultural legacy that is currently being digitally archived. Also the Australian Centre for the Moving Image in Melbourne plays an important role in the digitisation of moving image history (film and multimedia). In China some development in this area is already taking place with the outstanding Multimedia Digital Art Museum, located at the Millennium Art Monument in Beijing. The Chinese government has also reiterated that it will support adoption of the Linux system over Microsoft for its e-government initiatives as well as in the development of China's software industry (Ke 2003).

Tax credits for investment in R&D

R&D is in short supply in the cultural industries in Australia and China for similar reasons: business models are still unsustainable. Australia has a small market that doesn't provide great return on investment. And unlike the US and Europe, Australia does not

have a tradition of philanthropy and private investment in culture. Reliance on government to support cultural institutions has led to dependency. In China the government has invested heavily in network upgrades through its public telecommunications carriers. One possible solution to the investment problem is to put in place special regulations for creativity institutes such as those that apply to high technology districts such as Zhongguancun in Beijing's Haidian district. As indicated in Figure 1, the knowledge economy and the cultural economy can co-exist in the same space, the technosphere and the semiosphere can draw on similar systemic practices, and education, R&D, and technology can be integrated into creative milieu.

Educational campaigns targeted at children 'creative careers'.

At the dawn of the new millennium the knowledge entrepreneur plays a significant role in economic development. This will continue and can be assisted by educational campaigns that speak to young people about the need to acquire the kinds of skills that will be necessary to compete in the coming decades. As George Bush reminds us, the world has changed'. Schools, universities, and training institutions will need to re-evaluate their pedagogical models to ensure the creative society of the 21st century become a reality that is shared by all, not just those who are the elite (OECD 2001).

Financial models to support

A rethinking of financial models is necessary to place more emphasis on mid-stages of the value chain. At the moment China, like Australia, favours a traditional subsidy model of direct support for cultural industries. Support is directed to the input process, that is, to the institution or the creator. This is often in the form of grants and seed funding. It may be more beneficial to redirect more finance to the marketing, promotion, and distribution stages of the value chain. When you consider that the success of US culture industries is largely dependent on marketing and distribution, both China and Australia need to think more about the 'downstream' activities.

Effective light-touch market regulation

Too much regulation stifles innovation and creativity. This is true in any country. In many cases creative production is regulated by more than one bureau and regulation guidelines are unclear, thus leading to uncertainty. Regulatory regimes that are consistent will help to provide a more stable environment for innovation and allow business models to develop. Consumer protection law and competition law are also crucial to the proper development of creative and cultural industries. For instance, products that are badly made will damage the credibility of the industries while monopolies create innovation bottlenecks. Intellectual property remains an unresolved issue in China, as is rights management for creative producers. Content regulation guidelines need also to be clear and in some instances consideration could be given to liberalisation. Korean cultural industries benefited greatly from governmental relaxations in the kinds of topics that could be shown on film and television. This does not mean lowering public standards however.

Concluding remarks

In the streets and subways of cities in China a distinctive Chinese modernity strikes the eye. Change is occurring faster than in any country in the world. Architecture, industrial design and fashion compete for attention. Advertisements for mobile phones present glamorous images of young professionals, billboards announce the latest video game, and magazines dominate newsstands. Tradition jostles uncompromisingly with the commercial realities of the marketplace. We are in the midst of a remarkable innovation environment. But there is a need to guide this environment, to regulate it correctly, and to enable the next generation to utilise it properly. I am confident that China will enjoy a creative century.

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