

Perspectives on Industrial Design in Singapore

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Abstract

Singapore has progressed significantly in the area of design over the last ten years. This paper is concerned with the discipline of industrial design in Singapore. The paper reports on research into the topic which has employed literature review and structured interviewing of design professionals across the spectrum of practice, education and government policy. The paper attempts to provide an overview of how industrial design has developed, and its potential future role in the country. Industrial design was originally viewed as a servant of indigenous manufacturing industry, and particularly of large overseas multi-national corporations which the Singapore government attracted to be based in the country. In 2002 the creative industries were selected as a target for economic growth. Government financial support followed and the decade witnessed numerous design conferences, exhibitions, competitions and 'big name' visitors. The stated aim was to make Singapore the 'design hub' for Asia. Its profile in the design world has certainly been raised, but the role and scope of industrial / product design has remained generally static. Government policies succeeded in developing design's position in the cultural landscape of Singapore, and industrial design played its part in this success. Even though industrial design remains a small component (less than 5%) of all the design-related creative industries in Singapore, the research reveals a current situation which finds Singapore optimistic in seeking to employ design as a strategic tool to foster innovation and increase economic performance beyond its traditional, but now diminishing, consumer product manufacturing base.

Keywords: industrial design, singapore, government policy

Introduction

Singapore, as an independent state, is less than half a century old but it is famed for its successful economic growth over those fifty years. Over this period Singapore has progressed from a 'developing' to a 'developed' country. In 1964 Singapore opened its first national design centre, a showcase to promote Singapore-based design talent, products and opportunities. In 2013 Singapore will open its third incarnation of a 'national design centre' (DesignSingapore Council, 2010).

Er (1997) investigated the progression of industrial design (ID) in developing countries. To model and illustrate this progression, Er chose a series of relevant design arenas, such as: the scope of ID use in manufacturing industry; government policies towards ID; and ID education. He then identified the various phases of development, from 'embryonic' to 'maturity' and stated how each design arena should appear during each phase. According to this modelling, Singapore is in the 'maturity' phase because, for example, in government policy ID is part of industrial culture and design centres are run by professionals. It boasts a well developed professional bodies, a government agency to support design, higher education programmes in ID, and a vision for its future.

Singapore has had significant growth in its international profile in the area of design, largely due to government support. ID is in a period of flux, as the country's consumer goods manufacturing sector shrinks, but also at a time when 'design' is seen as a strategic tool in business innovation. Thus it is relevant and timely to reflect upon the place and role of ID in the country.

What the reader will understand from the paper:

- Awareness of a decade of government policies and support, and its impact.
- A sense of how ID has been positioned to support 'brand' Singapore.
- A view of how ID could play a part in the country's economic development.

The investigation employed two main processes of data gathering. Firstly, available literature and information relating to ID in Singapore, especially covering the last decade, were reflected upon. Secondly, interviews with individuals connected with ID in Singapore were conducted. Note that the investigation has attempted to isolate industrial and product design from other design disciplines such as graphics, web, media and architecture.

Literature

Government initiatives and policies

This section reviews Singapore governments' policies and initiatives relating to design, and includes notes on ID companies and professional associations in the country.

From the early 1960s to 2002 Singapore's Economic Development Board (EDB) was the main government agency to monitor and support industrial and product design within the country. Another agency, IE Singapore, sought to promote the strategic advantages of design in the international arena. The Trade Development Board, part of the EDB, and IE Singapore promoted design from the mid 1980s partly through the hosting of biennial International Design Forum conferences (1988 to 2005), the opening of a Design Centre in 1992, and the organisation of the Singapore Design Awards.

A 2001 survey on the economic impact of product and visual communication design activities in Singapore stated that there were 83 ID establishments out of a total of 3,657 establishments covering architecture, advertising, product, interior, fashion, web, and graphic design (Economic Review Committee, 2002a). This very low percentage (only 2.3%) indicates the rather minor position of ID had in relation to the other 'creative industries' design disciplines in Singapore.

At the beginning of the new millennium the Singapore government was seeking new avenues of economic development. Its Economic Review Committee recommended that the creative industries should be taken up as a case for strategic development, to benefit the Singapore economy (Economic Review Committee, 2002a). The report identified that the (then) value of the 'creative cluster' was low when compared to countries such as Australia, UK and USA, and, as such, it had good scope for growth.

The government also wanted to develop a 'cultural scene', partly to make the country more attractive to short and long term visitors and workers. The government wanted to move the image of Singapore beyond simply a safe and secure place for business and living. Art and Design were identified as highly effective vehicles for delivering this new vision for Singapore (Economic Review Committee, 2002a).

One of the key initiatives that came from the Economic Review Committee report was to formulate a strategy for design in Singapore. This was revealed as the "Design Singapore Initiative" (Economic Review Committee, 2002b), and its proposals included integrating design in enterprise, establishing a national design agency, and nurturing a vibrant design community. From the second proposal there emerged the DesignSingapore Council (DSC). Formed in 2003, it operates within the Ministry of Information, Communications and the Arts (MICA). This is a quote from the DSC website:

The mission of the DesignSingapore Council is to develop Singapore into a global city for design where design innovation drives economic growth and enhances the quality of life. DesignSingapore promotes and develops the design industries as a creative cluster, encourages the adoption of design by enterprises and nurtures a climate of co-creation and innovation through design. (DesignSingapore Council, 2011a)

For DSC, the term "design" covers advertising, architecture, web, software, experience, graphics, industrial product, fashion, communication, interior, service, and environmental. Much of recent support and stimulus for ID has come from DesignSingapore Council. Numerous design conferences, competitions, exhibitions, big name speakers and similar events occupied the cultural calendar over the last decade.

In 2007 the Singapore Economic Development Board was promoting ID by highlighting the 'creative buzz' in the country, the awards and festivals, its design talent and products designed in Singapore, along with design agencies and Singapore-based brands (Singapore Economic Development Board, 2007). The stated aim was to make Singapore the 'design hub' for Asia. The Economic Development Board now promotes Singapore as "Asia's design destination" (Singapore Economic Development Board, 2011), the article focusing on innovation, consumer insights, and big name brands which chose to be based in Singapore.

In 2009 the DesignSingapore Council published "Dsg-II Strategic Blueprint of the DesignSingapore Initiative" (DesignSingapore Council, 2009). This was both a review of its work up to that time, and a strategic plan for its proposed initiatives between 2009 to 2015. The publication documents considerable success in the five key strategies of DesignSingapore's initial initiative. These were: to develop Singapore's designers; to create greater promotion and demand for design; to provide a design culture context

conducive to policy-making; to inspire more upstream design activities; and to use the Singapore Design Festival as an integrator platform. The document presents details of the design awards won, exhibitions held and attended, designers sponsored, educational programmes, business programmes, international study trips and missions, and festivals held. The document lays out the metrics of key performance indicators such as: design sector growth; international design ranking; international design awards won; and design awareness. All of these were positive.

The strategies set out for beyond 2009 seek to develop support for the design sector so that Singapore becomes a 'global city for design creativity'. The aims are revealed to be for design to enhance quality of life and drive competitiveness. A significant new thrust of the strategies appeared to be to target design (in the form of Design Thinking) to improve enterprise in small and medium sized enterprises (SMEs), and strategic innovation as a business tool. Subsequent initiatives and policies have flowed from this. In 2010 DesignSingapore Council created the Design Thinking and Innovation Academy. The government agency SPRING is promoting a programme of enterprise in the economy, and exploiting design to achieve this. The programme, called the Design Engage Programme, "*... aims to help enterprises learn how to integrate strategic design thinking into their business processes for creative advantage and profits.*" (SPRING, 2011). It is encouraging design consultants to come forward as trainers or facilitators in this endeavour. DesignSingapore has its 'Design for Enterprises' initiative (DesignSingapore Council 2008). This "*... is about helping Singapore-based enterprises understand the power of design and benefit from the impact design can make on business growth ...*".

The DesignSingapore Council has annual meetings of an International Advisory Panel (IAP), which consists of respected design leaders from around the world. In the most recent (seventh) report of the IAP the assembled design experts advised 'the harnessing of technology and design'. One Panel member, Mr Dick Powell, stated 'Singapore's opportunity is to bring human needs and desires to technological innovation through design.' (DesignSingapore, 2011b). Perhaps this is another avenue of exploration that DSC will be tempted to go down in its pursuit of success.

External studies

This section reviews various external commentaries on Singapore's recent design and innovation performance and status. Most reports cover a blend of design disciplines. It is rare for Singapore-based industrial or product design to have their own isolated studies.

Evans et al (2003) reported on innovation policies in Singapore. In a section on Singapore's promotion of its creative industries sector: "*Singapore's thinking about the creative industries – arts and culture, design, and media – is distinctly ambivalent as to whether these have a main role in the nation's economic development or are just supporting actors.*" (p72). This was prepared before the Singapore Economic Review Committee promoted its creative industries as a sector worthy of support to grow (Economic Review Committee, 2002a).

Korea and Singapore are often included or compared in studies on the recent history of design and innovation within countries. Korea recognised the value of design for its country's economic performance late in the 1990s (Cho, 2004). It instigated and funded many policies to support the development of its design professionals, improve standards, raise its international profile, and produce more design graduates. Korea has also viewed design as a critical component of the 'day-to-day' culture of the country. In Korea, design is closely linked to mass manufacturing industries, such as the country's successful large consumer electronics companies. ID is highly regarded, and is seen as a driver of innovation. It is often linked with engineering, technology and science, rather than

marketing and humanities. Korea's number of industrial designers, as a proportion of population is ten times that of Singapore (MacLeod et al, 2007). MacLeod et al produced a report for the Canadian Design Research Network which reviewed design as an instrument of public policy in Singapore and South Korea. The focus was on economic performance, but also referred to issues such as environmental sustainability and quality of life. It commented favourably on Singapore's approach to integrating its support for multiple disciplines of design. The report listed design awards, conferences, overseas exhibitions and sponsoring local talent as successful ways (for external branding and marketing) of spending the S\$10 million that DesignSingapore had at its disposal.

From 2003 to 2011 the research organisation Designium has periodically surveyed various countries' policies of support and promotion of design. In its 2003 report (Hytönen, 2003) Singapore was not surveyed, presumably because its policies were being re-formulated at that time. From 2006 onwards, the Global Design Watch reports have ranked countries for design competitiveness. In the 2006 report (Sorvali et al, 2006) Singapore is picked out as a 'winner' because of its rise from 22nd in 2002 to 16th place in 2005, in a ranking that was concerned with the implementation of national design programmes on national competitiveness in the design sector. In 2008, the Designium survey (Sorvali and Nieminen, 2008) placed Singapore 15th in global design competitiveness for 2007. In Designium's latest survey results, Global Design Watch 2010 (Immonen, 2010), Singapore's ranking of its design or creativity competitiveness rose from 15th to 11th position. The survey also stated that Singapore's 'design competitiveness' is now greater than its 'national competitiveness'. This is a reverse of the comparison found in the previous (2007) survey.

Moultrie and Livesey (2009) reviewed the design capabilities of twelve countries. They generated a ranking of national design capabilities. This ranked Singapore as 6th in absolute measures of design capability, but 1st in relative measures. The review covered a broad range of design subjects including architecture, industrial design, fashion, multimedia and graphic design. The measures chosen to arrive at the rankings included public investment, numbers of graduates, numbers of design registrations and trademarks, and numbers of design companies. The following comments were made:

- 'Although ranked 1st for the relative measures, Singapore is less dominant in absolute terms. This is unsurprising, given the small size of the country.'
- 'Very high public investment in design in comparison to other nations, alongside a clear and ambitious national policy for design.'
- 'A comparatively small design services sector, but with growing capabilities.'

The DesignSingapore Council's mission statement (DesignSingapore Council, 2011a) indicates something of how design is regarded in Singapore. It is not just a tool for economic progress and development, it's part of the country's mechanism of social engineering. DesignSingapore's website also includes as news items, Singapore's rankings as a 'liveable' and 'fashionable' world city. This seems to reinforce a view that 'design', along with other 'arts' is seen as an important component of the mix to make the country appealing and attractive. It has a role to play in managing the image of the country, not only as a tool to effect positive change, but almost like a trophy to be shown to its residents, and the rest of the world. This view is supported by Gwee (2009). Her study of the development of Singapore's creative industries highlighted the point that one aim of such development has been to promote a creative culture, to educate a population to appreciate and embrace art and design. DesignSingapore Council has sponsored the biennial Singapore Design Festival and the annual President's Design Awards to be alongside other arts festivals. Gwee's view (2009: 249) is that one of the impacts of such

events is to '... shift community preferences toward higher quality products and design aesthetics.' Gwee (2009: 250) includes in her conclusions: 'The creative industries cluster strategy itself, although an economic strategy, is also the nation's innovation policy.'

Design companies, associations, and MNCs

Singapore has several professional design associations. The Designers Association of Singapore (DAS) is Singapore's only multi-disciplinary design association. Established in 1985, it is being re-branded as the Design Business Chamber Singapore (DBCS). This reflects a move towards positioning design as a strategic business tool. Another organisation, The Design Society, is '... dedicated to the goal of raising the general standard of design in Singapore, with a focus on applied graphic design.' (The Design Society, 2011). There are also professional associations for architecture, interior design, landscape architecture, fashion and textile design, furniture design, planning, advertising, and landscape architecture.

Notable multi-national corporations (MNCs) which have set up a base in Singapore are listed in table 1.

<i>Multi-National Corporation</i>	<i>Website</i>
Dell	www.dell.com.sg
Electrolux	www.electrolux.com
Hewlett-Packard (HP)	www.hp.com.sg
Motorola	www.motorola.com.sg
Nakamichi	www.nakamichi.com
Nestle	www.nestle.com.sg
Philips	www.philips.com
Procter & Gamble	www.pgcareers.com.sg
World Kitchen [Corning, Pyrex]	www.worldkitchenasia.com

Table 1. Singapore-based MNCs

There is a small number of significant (because the design community always refers to them) ID houses or consultancies based in Singapore. These are listed in table 2. Note that BMW Designworks moved its Asia operations to Shanghai at the end of 2011.

<i>ID House / Consultancy</i>	<i>Website</i>
BMW Designworks	www.designworksusa.com
Design Exchange	www.designexchange.com
Lawton & Yeo	www.lawton-yeo.com
Orcadesign Consultants	www.orcadesign.net
Philips Design Singapore	www.design.philips.com
XentiQ	www.xentiq.sg

Table 2. Singapore-based ID houses / consultancies

The Asian Design Survey 2009 (Lee, 2010) recorded the number of design-specialising companies in Singapore to be 11,000. It is not known how this figure was arrived at. The DesignSingapore website has a 'find a design firm' design directory feature. This does not include digital media design firms such as websites, games, film and TV, or software. It also does not include engineering design. If this design directory is searched there are approximately 290 design firms listed. If this list is filtered to only include "Industrial / Product Design" the number is reduced to 80. When these firms are reviewed on-line the

number which promote themselves as significantly involved or capable in the practice of ID reduces to approximately 15.

Interviews, themes and quotes

In order to generate a more current view of ID in Singapore, and explore its potential future, it was necessary to go beyond the available literature. Data gathering therefore included a series of semi-structured interviews. These were conducted with seven individuals who represent different areas of ID in Singapore. The identities of the individuals are not provided, for ethical reasons. The interviewees were:

- A practicing designer and partner in a strategic design and branding agency.
- A senior practicing designer and tutor on an ID undergraduate programme.
- A free-lance ID professional.
- A senior tutor and programme leader on an ID diploma programme.
- A senior manager and tutor on an ID diploma programme.
- A senior manager at a Singapore government agency responsible for design.
- An ID manager of a MNC which is based in Singapore.

The questions were framed to tease out some personal views on how ID is practiced and supported in Singapore. The following points summarize the structured questions:

- Does Singapore have a particular model of ID that works well for the country and its economy, and is ID in Singapore different from ID elsewhere?
- What sustains an ID profession in Singapore, considering that there is a shrinking manufacturing sector?
- What are the 'drivers' for change or development of ID in Singapore, and how is ID supported in Singapore?

The questions were deliberately open ended, to encourage a wide ranging discussion and to allow new topics to emerge and be included in the data. All interviews were audio recorded and the discussions were analysed later. The analysis included transcribing the conversations and then finding common themes, under which quotes from the interviewees could be grouped. These themes, and the quotes, are presented next. Each paragraph of quote(s) is from an individual interviewee.

Theme: Limitations concerning volume and scope of ID work and professional practice.

- *Probably a limited number of jobs in product/industrial design compared to other creative disciplines. Type of design is very much classical, aesthetic, design styling - give form to some kind of product and make it look nice. The [ID] industry is not as mature. Singapore does not have such home-grown outfits.*
- *It doesn't really significantly contribute to the economy. There isn't enough industry to create that kind of demand. Since 1989 ... there were about 10 ID firms operating. Up to today, in terms of those actively operating, there are maybe 10. So I don't think that they have basically grown.*
- *Driven by government initiative, not bottom up from the industry.*

- *Singapore has more free-lancers, than design agencies ... market size for industrial designers is quite small.*
- *Whether they [ID] are doing very very well is a question mark. [Mainly] 'design execution' - which is you only execute the design strategy which has been [written] down by other strategists. Although a small country, lots of opportunity to position oneself.*

Theme: The influence of multi-national corporations (MNCs).

- *Companies exist on the basis of being designers for companies such as HP and Motorola.*
- *ID here for strategic reasons. Design studios related to mobile phones, product design, like Philips, ... 'design centres' ... Motorola, HP, BMW. Currently, HP is probably the company that sustains all this ID activity. Most of the ID companies, have some form of major account with HP.*
- *Have mainly support from MNCs ... 'the great employers of industrial designers'.*
- *Big companies like IDEO, frog design are setting up an office here - to serve the demand of the MNCs.*
- *Most ID business is from overseas companies, rather than local SMEs.*

Theme: Singapore industrial designers are not equipped for global work, nor well engaged with local SMEs.

- *Don't believe there is a lot going on at the level of high level, strategic design innovation or design thinking.*
- *The big companies employ the big names/execs but somehow it does not translate well. SMEs, historically and up to now, don't really know how to engage or work with a designer.*
- *No specific ID office really raised to a level recognised around the world.*
- *SMEs are slowly grasping the investment value of ID.*
- *More MNCs moving to Singapore, and one of the major complaints/feedbacks is that they cannot find the right profile of designers. Most local designers work on local projects ... don't have the exposure to work on global market.*
- *... they [Singapore manufacturing industries] most likely will use overseas design consultant (because it's bigger, larger scale) to do their strategy. There is no business [for the strategists]. The clients know that they need to do it [strategic thinking], and designers know that they need to do it ... but mutual connector is not there yet.*

Theme: Sustaining the profession: opportunities and threats.

- *Design is all about IP [intellectual property] and innovation. Singapore totally needs to rely on that to survive - because manufacturing has shifted out.*
- *Working with MNCs, although this has been drastically scaled back, with companies like Motorola leaving. There are companies that are finding more niche areas, like XentiQ.*
- *Diversification (exhibition, interactivity, multi-media etc.) is what is helping Singapore design studios to keep alive.*

- *Maybe SMEs will come in ... spreading their wings in the region - especially in China. We are the bridge, we know European tastes ... they think that Singapore designers are worth grooming.*
- *Think it's not about manufacturing. We need to create our own IP. IP and design comes from here - not made here. Focus for manufacturing is high value, high technology products - not so much on the mass. For ID, it's for us to create our own brand of product.*
- *It's going to be quite tough for IDers to survive. We push our IDers to go and work overseas. Some of the design agencies are doing quite well, because they have more and more projects overseas. Difficult for designers to come back, when they have enjoyed working overseas, and having a lot of interesting projects to do.*

Theme: Drivers for change in Singapore's ID profession.

- *The growth of design from mainly an aesthetical discipline to one of strategic thinking. A multi-disciplinary team who work to keep businesses competitive - where it needs to go [in Singapore].*
- *May happen when HP [Hewlett-Packard] not here anymore! When younger designers are not relying on the existing kind of revenue stream.*
- *One aspect is ... design education ... different stratas: polytechnics, degree, masters. Government's initiative [is] to drive design education to a higher level.*
- *Singapore moved from a 'developing' to a 'developed' country ... that increases consumer expectation. 'Design' is coming of age.*
- *[IDers] have to venture out, for example to China, because this is a bigger market for them.*
- *Openness to ideas. By whole society ... a survival instinct. Key drivers are ... clients and designers*

Theme: Government support for ID industry.

- *[Government] funding schemes ... it's important that they do that, and definitely many people do benefit from it ... but do not believe that can use funding as model to run operation as a design consultancy. Bad for design development with this kind of grant. Maybe need a stronger business agent to bring them to the next stage.*
- *Government is trying really hard ... to sustain the people who want to work in ID.*
- *DesignSingapore Council ... they are doing a good job - the awareness of design has risen.*
- *[DesignSingapore Council] working on both sides ... education and companies ...trying to create the demand, increase and quality.*
- *Promotion by government, funding, will help. Funding shortfalls can mean work is not retained in Singapore and [local] designers lose the opportunity of such work. EDB and DesignSingapore Council need to have a more functional role ... need to ensure facilitation. Must go beyond just achieving KPIs.*

Discussion and conclusions

The literature and interviews reveal a range of data relating to the present and recent past of ID in Singapore. This section discusses issues arising from the data, including comparisons between interviewees' comments and findings from literature.

Policy and support from the Singapore government has gone through distinct phases. The early phases were about manufacturing industries using design to add value to products. The industries ranged from MNCs to SMEs. There was some success with the MNCs being attracted by financial incentives, but Singapore's SMEs have been slow and hesitant to exploit ID. The middle phases, when DesignSingapore Council was developing its roles, might be characterised by the following aims: promoting design as good for business; creating a design 'buzz', a design culture; educating more Singaporeans to appreciate 'good' design. More recently, design is promoted along the following lines: innovation and strategy; reframing business opportunities; design thinking; consumer insights.

Singapore has been very successful in its formulating and implementing of policies to support design. However, it is not easy to isolate ID from other disciplines, and what is not clear is the success of the policies in directly affecting economic performance. It is clear that industrial/product design is a small component of all 'design' in Singapore, approximately 5% in terms of numbers of design firms. Some interviewees confirmed this point.

The interviewees seem to recognise a potentially difficult position for ID. There was much reference to MNCs and a global view of design. The interviewees recognised the importance of government money, but view it as 'double edged'. The money had supported an ID profession with the presence of the MNCs, but left the profession vulnerable when the MNCs decided to leave Singapore.

Few interviewees commented on the detail of government initiatives, beyond the financial issues. There was some call for agencies to work to be 'connectors', to bring ID and indigenous manufacturers together, and not just at a strategic level, but at a practical ID level. There is an opportunity for industrial design to be innovators, not just of ideas but of realised products when they are linked with industry.

In its policies on design, Singapore has given less emphasis to 'mainstream' industrial and product design activity than, for example, Korea. It is likely that the reason behind this is the relative scales of consumer product manufacturing industries in the two countries. In-depth comparison of different countries' support for design is beyond the scope of this paper. However, the literature does suggest that Singapore's policy had its greatest success (in loose comparison to other countries) in raising the profile of design within its own population and in its support of 'brand' Singapore.

Interviews revealed a confidence and positive hope for what design can offer Singapore. Its designers and design-related business people are enthusiastic about future prospects. They are fully aware of the effect of government influence in much of what they do. They have a pragmatic and realistic approach. They accept the significance of the role of government in the life of the country. This is something which is quite particular to Singapore.

There is a curious relationship between the ID profession, as represented through the ID agencies, and MNCs. The MNCs are largely in Singapore because they have been attracted by government support. There seems little else for industrial designers to do, other than become sole practitioners, or craft designers. Some parties are optimistic

about the potential role of designers as strategists, but this has yet to happen to a significant extent.

The Designium report in 2008 (Sorvali and Nieminen, 2008) listed 'to make Singapore a global design hub' as one of Singapore's four main objectives of its national design policy. Has Singapore become a 'global design hub'? There is some evidence that this began to be the case as MNCs were attracted to set up bases. More recent events, such as BMW Designworks leaving to go to Shanghai, suggest that Singapore may struggle to achieve this objective.

There is much thoughtful design talent in Singapore. There is a small, but lively community of independent designers, design/artists and crafts people. Great strides have been taken to develop a thriving community, and general, 'popular' interest in design has grown to the point that it has become part of the cultural life of the country. Design's impact in business and commerce, both public and private, is being boosted with the promotion of 'Design Thinking' (DesignSingapore Council, 2012).

There has been a rise in the prominence given to Design Thinking (i.e. the business tool), but there seems to be much less conversation about thinking in design. In a recent posting a Singapore-based design writer, Justin Zhuang, questions the reasons behind the 'disappearance' of the Singapore Design Festival in 2011 (Zhuang, 2011). Following Festivals in 2005, 2007 and 2009, DesignSingapore Council reviewed their purpose and have yet to announce what will happen to the Festival. Zhuang considered that the 2009 Festival had reverted to the format of a 'trade show', rather than a review of design 'culture'.

There seems to be little maturing of fundamental thinking 'about' design. For example, there is virtually no academic research emerging concerned with the fundamentals of design. Papers from Singapore researchers, published in design journals and conference proceedings are rare. Design research culture is not strong in Singapore. There is little or no tradition of development or innovation in ID practice, resulting from university-based academic research. There is not the tradition of collaboration between universities, government and industry. Building on Singapore's reputation as a 'knowledge-based' economy, there may be value in the country developing a deeper intellectual base concerning design.

Industrial design, along with other design disciplines, in Singapore has developed significantly over the past decade. It has enjoyed generous government support and this has resulted in a recognised international profile for its designers and designed output. Industrial design is now re-developing, even re-inventing itself, to become more affective and influential in Singapore's changing landscape of industry and commerce. However, it seems that the scale and scope of industrial design cannot escape the effect of the (small) physical size of the country.

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