

**SINGAPORE:
THE ART OF BUILDING A GLOBAL CITY**

SANJEEV SANYAL

January 2007
IPS Working Papers No. 17

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SANJEEV SANYAL

Adjunct Fellow

Institute of Policy Studies

e-mail: sanjeev.sanyal@db.com

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1. INTRODUCTION

The Singapore Government has now explicitly stated its goal to turn the city-state into Asia's Global City. In order to become a successful global city, it is important to understand what drives urban agglomeration in the 21st Century.

Cities have historically existed for a variety of reasons – defence, administration, religion, trade and industry. The last two factors have been the main drivers of urban growth since the Industrial Revolution of the late 18th Century. However, over the last few decades, advances in communications and transportation have meant that theoretically, cities are no longer needed for the physical needs of production. This is why many commentators in the early 1990s were talking about 'the death of cities'.

Yet, certain cities have thrived in the last decade – London, New York, San Francisco, Boston. Their success is due to the fact that post-industrial cities now provide two important socio-economic inputs:

Uncodifiable Human Interaction. Despite the dramatic improvements in electronic communications, many economic activities cannot be codified and electronically transmitted, and therefore still require face-to-face interaction. This is especially true for two broad types of activities. The first are activities that need a constant exchange of ideas and 'fuzzy information', especially those activities that are driven by innovation, creativity and the diffusion of ideas. Cities create concentrations of human capital and the constantly changing 'random networks' of people and institutions that are critical to innovation and diffusion of ideas. Second, direct human interactions are

critical to command-and-control functions of large international organisations (personal contact is not just necessary for the exchange of ideas but also for building trust). This is why the globalised world needs large financial and commercial hubs like London and New York¹.

Lifestyle. Cities are increasingly required to support the needs of consumption rather than production. This is because successful cities provide a clustering of 'hard' amenities such as schools, restaurants/bars, hospitals, shops, theatres, museums, airports, specialised medical care and so on. They also concentrate 'soft' amenities such as cultural and social organisations, friends, family and so on. Thus, people put up with the high rents and congestion because this clustering of amenities allows them to lead lifestyles that cannot be replicated in a less concentrated environment.²

These two factors are not mutually exclusive since many amenities that support lifestyle are also integral to direct human interaction. Ideas are generated and exchanged in both universities and cafes. They are both important for innovation and lifestyle. Over the past decade, we have found that cities that support lifestyle and human interaction have carved out a role for themselves. At the pinnacle of this new phenomenon are the so-called 'Global Cities' that act as nerve centres of the global economy. Singapore is now developing itself into a nerve-centre for the rapidly growing Asian region.

¹ For a detailed discussion of the role of Global Cities in the globalised production process read: Saskia Sassen, *The Global City* Princeton University Press, 2001

² For a broader discussion see Edward Glaeser *Consumer City* ed. Jed Kolko & Albert Saiz, HIER Discussion Paper June 2000.

Before we go further, however, it is important to recognise that this is not a black-and-white model but rather one of many shades of grey. The term ‘Global City’ conjures images of a megapolis like New York or London. However there are many smaller cities that are successful by carving out a unique space for themselves in the global grid – Boston (for Education, development of high technology and fund management), San Francisco (for lifestyle and information technology), or even perhaps Edinburgh (for the Arts and fund management). Furthermore, there are successful cities that are not global cities at all – niche cities like Las Vegas, or large national cities like Tokyo. This is why post-industrial urban re-engineering is more an art than a science. Therefore, one needs to have an open mind about how Singapore can use this new dynamic to transform itself successfully.

2. THE IMPORTANCE OF ‘CLUSTERING’

Many factors explain the success of global cities. They are human capital, hard and soft amenities, a multicultural milieu, ‘urban buzz’, international linkages and so on. The individual factors have been discussed at length in earlier articles³. This article discusses how these factors can be made to come together to create a vibrant Singapore for the future. This is important because both human interaction and lifestyle require a clustering of human capital, institutions and amenities that feed into each other. Cities that are able to provide a good clustering of these inputs can, therefore, survive the declining importance of cities as industrial and transportation hubs. Indeed, London provides a striking example of this transformation. The city remains

³ ‘Small Country to Big City’, Sanjeev Sanyal, Global Markets Research, Deutsche Bank, Oct 2003; ‘Singapore: Asia’s Global City?’, Sanjeev Sanyal, Paper presented at the *Fourth Singapore Economic Roundtable*, Institute of Policy Studies, March 2005.

the world's shipping hub despite the fact that it is no longer an active port. This is because London is still the centre for all the financial, legal, logistical activities that support the global shipping industry. This concentrated milieu has an internal dynamic that is so powerful that it matters little that the city is no longer involved directly in shipping.

If Singapore wants to succeed as a cutting-edge 21st Century city, it will have to ensure that it is able to build up the minimum clustering that is needed to sustain a global city. There are, of course, conceptual parallels here with industrial clustering but a post-industrial urban cluster will be far more dependent on intangible inputs and linkages. Furthermore, the linkages within the system may themselves be ephemeral and changing. Indeed, much of the benefit from 'random networks' derives from the fact that the linkages between people and institutions are continuously re-configuring. It is an important reason why some cities have the edge in creativity and innovation. In other words, modern cities cannot be hard-wired in quite the same way as traditional industrial clusters. However, as I will argue below, this does not mean that deliberate policy cannot play an important role in creating the clusters. Later in this article, we will compare and contrast the strategic differences between building up a financial and business hub and an arts and entertainment cluster.

3. CAN SINGAPORE MAKE IT?

Asia has many large cities but it does not yet have a true global city although some do come close. However, it can be argued that there is space for at least one city where Asians (and others) can come to interact and do business. As the author has argued in earlier articles⁴, Singapore stands a very good chance because it has many of the necessary initial conditions: it is easily, the most multicultural city in Asia, it has excellent civic amenities, it already has a financial and business cluster and it has good communications and transportation links. Furthermore, it has the advantage of having a government that has opted for this paradigm as a deliberate economic strategy. Therefore, it enjoys a liberal immigration policy, a recent increase in investment in education and cultural activity and overt encouragement for economic activities that are seen as necessary for building up the minimum clustering.

Nonetheless, there are many who feel that Singapore lacks the 'buzz' that characterises global cities. The Government takes this criticism seriously and has tried to set these short-falls right. More fundamentally, it has been argued that it is meaningless to deliberately 'plan' a global city since most of today's global cities were not deliberately set-up but evolved from an earlier milieu. Thus, it is pertinent to question the validity of having such a plan for Singapore, in the first place.

⁴ 'Singapore: Asia's Global City?', Sanjeev Sanyal, Paper presented at the *Fourth Singapore Economic Roundtable*, Institute of Policy Studies, March 2005.

4. ORGANIC EVOLUTION VERSUS INTELLIGENT DESIGN

There is considerable disagreement amongst experts about the role of top-down government policy in developing a post-industrial financial and cultural hub. After all, it is true that all of today's global cities are largely the result of organic evolution rather than deliberate planning. London and New York have developed as successful financial centres on the back of pre-existing clusters that owe their existence to their past as major ports and industrial hubs. Similarly, Boston's success since the 1980s has much to do with a pre-existing cluster in education.

Thus, it is often argued that the dynamics that drive global cities are fundamentally unstructured and therefore cannot be planned. This does not mean that the advocates of organic evolution completely disregard the role of the state. The state is still required for maintaining basic civic amenities and general governance. Also specific policies may be designed to play a role – as in the case of the 'Big Bang' financial sector reforms in London in the late 1980s. However, the role of the state is largely passive and general.

Applied in the Singapore context, it would mean that the government should reduce regulation, withdraw the public sector and essentially take play a non-interventionist role. Unfortunately, organic evolution has and will take very long periods of time, and cities can go through a prolonged period of decline before a new dynamic emerges. For instance, Boston went through six decades of gradual decline before seeing a revival in the 1980s⁵. Even New

⁵ 'Reinventing Boston: 1640-2003', Edward Glaeser, NBER Working Paper, December 2003.

York has gone through long periods of urban crisis (as in the 1970s and 1980s)⁶. Furthermore, for every city that has spontaneously evolved into a post-industrial success, there are several that have failed (Detroit, Birmingham for example). Darwinian evolution is a brutal process. Singapore can hardly risk such an experience, especially since it is not just a city but a country.

So, what is the alternative? It is worth exploring the possibility that it may be possible to create a vibrant urban clustering though deliberately guiding resources in a particular direction to speed up urban change. There are examples through history such as Ptolemaic Alexandria, Florence during the Renaissance and 19th Century Paris where deliberate state policy built up a city of global commercial, intellectual and cultural importance. It is true that Western global cities of today did not use 'intelligent design' but they were not in a position to use this strategy because they did not have a model that they could copy. Indeed, till the early 1990s, most experts were predicting the demise of cities rather than an alternative urban model. Thus, the revival of these cities was necessarily organic.

In contrast, Singapore has a number of well-established models that it can use to understand the dynamics of post-industrial cities. As a late entrant, it is in a far better position to plan for a certain outcome and it already has an enviable record of economic re-engineering. After all, Singapore industrialised without undergoing a slow Dickensian industrialisation stage. It

⁶ 'Urban Colossus: Why is New York America's Largest City?', Edward Glaeser, NBER, June 2005

was able to do this because it could copy 'best-practice' from existing industrial countries. There is no fundamental reason why this experience cannot be replicated. Note also that the two strategies are not exclusive but a continuum. What is probably needed is a strategic mix that sways towards intelligent design (which in some areas may require no more than encouragement of the organic process).

5. BUILDING A FINANCIAL HUB

Many successful global cities today are also financial hubs. Such hubs include both activities that are directly a part of the financial system as well as business and commercial activities that cluster together in such hubs (such as corporate headquarters, newswires, lawyers, accountants, and so on). It is not surprising that global cities are financial hubs because there are few other economic activities that play so well to the comparative advantage of urban agglomeration. Financial hubs are intensive users of information, innovation, and direct human interaction. Moreover, it is driven by human to institutional linkages that are constantly evolving in numerous and unpredictable ways. Cities still provide the most effective way to create this milieu of 'random networks'. This is despite the growth of electronic communications. Urban density, therefore, still has a very large advantage over other existing ways of carrying out the functions of a financial hub.

London is probably the quintessential example of how a global city performs as a financial centre. In order to understand this phenomenon, it is instructive to look at some of London's experiences. In previous papers, I have

discussed many of the inputs that make London such a success (human capital, cosmopolitan attitude etc.), so here we will concentrate on three points about London's development experience that have relevance to Singapore's strategic planning:

Force of Gravity: London has long been an important financial and business centre but, in the late 1980s, it was only marginally ahead of European rivals such as Paris and Frankfurt. London did have a few advantages. Britain's imperial past had left the city with a sizeable finance-business cluster, a flexible common-law legal system, and a widely used international language. However, it also had many disadvantages including the fact that it was considered outside the core of Europe (indeed, the UK has still not joined the Euro area). Nonetheless, London was been able to turn the small advantage into a huge lead by the late Nineties. It is estimated that London now accounts for between 40-50% of all 'high-finance' in the European Union⁷. Similarly, 60-70% of global issuance and trading in international bonds and over 30% of international foreign exchange dealing takes place in London. It appears that the process of agglomeration enjoys increasing returns to scale that have caused all this activity to gravitate to London. This is probably because all financiers, corporate leaders, lawyers for instance, head for the place where others are congregating, and this process gathers a dynamic of its own. Other European financial centres, as a result, now survive as spokes to London's hub. What this implies for Singapore is that this is essentially a 'winner-takes-all' model where a small initial advantage will get exaggerated

⁷ *The City's Importance to the EU Economy*, CEBR, Feb 2005

very rapidly. Singapore is currently one of several medium-sized hubs in the Asian region but, if it wants to play this game, it needs to actively ensure that it builds up and maintains critical mass.

Getting the Mix Right: One of the interesting aspects of London's economic model is that it is a closely interwoven socio-economic system that incorporates the whole city. The number of 'City-type' jobs in the much touted high-finance sector amounted to barely 317,000 in 2003. Even if one included various other businesses that feed into the financial and commercial cluster, the number of jobs amounts to 702,000 (about 18% of the jobs). However, this cluster indirectly depends on a plethora of sectors ranging from restaurants and entertainment to real estate and education. All these 'support activities' are an integral part of the financial hub. It would not function effectively without this broader socio-economic support structure. This is very different from the industrial city model which is much more compartmentalised. The lesson for Singapore's planners is that for a financial hub to evolve, the emphasis should be on getting the 'mix' right rather than on individual ingredients – a good generalist can perform well here compared to a city that is too specialised.

Open-ended Model: The success of London as the world's financial capital owes much to the 'Big Bang' deregulation of 1986. One of the implications of this change was that foreign companies could buy British brokerages or become direct participants themselves. This effectively destroyed the closed world of the City brokers and merchant banks. European and American banks responded by purchasing some of the country's best known names

(ING bought Barings, Deutsche Bank bought Morgan Grenfell and so on). At first, many commentators argued then that foreign ownership meant the end of the City. We now know that instead, it created a place where global banks could network with each other through their newly established subsidiaries. Today's London is a direct result of this clustering. The lesson for Singapore is that critical mass should be built through openness rather than protectionism. At times, this may mean that the authorities have to sacrifice the needs of established domestic companies in order to shore up the overall hub (this is true for many sectors ranging from airlines to banking). The Singapore Government appears to be very aware of this particular point because it has been preparing for this by opening up the financial and airlines sectors to competition, and by following an aggressive policy of entering bilateral free-trade arrangements.

6. BUILDING AN ARTS AND ENTERTAINMENT HUB

Many successful global cities have a thriving arts and entertainment sector. This too should not be surprising since the Arts, like high finance, also requires uncodifiable human interaction and a concentration of soft and hard amenities. However, there are some interesting differences that need to be highlighted:

Direct Patronage: Much of the discussion on a creating an arts hub tends to emphasise the lack of structure in the creative process. This is a view that has

become fashionable through the work of Richard Florida⁸. His work is often taken to suggest that an arts hub cannot be planned but should be allowed to develop spontaneously when intellectual and behavioural freedoms are allowed. Oddly, there is plenty of historical evidence to the contrary. Many examples of great art developed under the rule of despotic monarchs (Versailles and the Taj Mahal to name a few). In my view, art is not the result of unregulated bohemianism but the result of 'patronage'. For example, Florence would never have been a centre of Renaissance Art without the patronage of the Medici family (incidentally, it was a family of respectable bankers). Today, patronage from private sources is the key to thriving art hubs like New York and London. Therefore, Singapore should not be unduly apologetic about top-down patronage as a means to encourage Art. This patronage can come in the form of financial support (grants etc.) or non-financial incentives (for instance, recognition). The point here is that contrary to popular perception, the Arts sector benefits from direct top-down intervention, and one should not place too much faith in mere social deregulation.

Multiple hubs: In the previous section, we discussed how the competition to be a financial hub is a 'winner-takes-all' tournament. This is probably less true for an arts and entertainment hub. There are of course many gains from clustering the arts and entertainment, but the force of gravity appears to be weaker than for a financial hub. Thus, Europe has many thriving cultural centres like Paris, Berlin, Vienna, and there are perhaps even some gains

⁸ A short introduction of Richard Florida's views is contained in Richard Florida's 'The Rise of the Creative Class', *Washington Monthly*, May 2002.

from differentiating away from the main hubs. The implication for Singapore is that the city-state should concentrate on building on its strengths in this space rather than bother too much about what its competitors are doing.

Compartmentalisation: An important facet of the global financial hub is that the financial and business cluster is an integral part of the urban system itself and draws heavily from the city's general socio-economic infrastructure. Not all great cities are financial hubs but all financial hubs are already great cities. This is not true to the same extent for arts and entertainment and it is often possible to compartmentalise the art and entertainment cluster. There are many extreme examples of this – Las Vegas, Disneyland Orlando, Monte Carlo or even Hollywood (arguably a somewhat separate entity from Los Angeles). This possibility of compartmentalisation makes it somewhat easier to build up an arts and entertainment hub from scratch compared to building a financial hub. Edinburgh is a classic example of how a focused effort can lead to a much wider cluster. The phenomenon has its roots in the Edinburgh International Festival (focused on performing arts) that began in 1947. Over time, this event spawned an informal Fringe Festival that has grown dramatically since the late 1970s. The result is that the Edinburgh Arts Festival is now the nearest equivalent the Arts world has to the Olympics. The website states that in 2005 there were 26,995 performances of 1800 shows in 247 venues, and hosted 16,190 performers.

7. HARD AND SOFT ARCHITECTURE

So far we have talked about cities as disembodied economic systems but in reality, the urban economy functions around the city's underlying architecture. This architecture includes buildings, bridges, roads etc (i.e. hard architecture) but also a plethora of social, cultural, government and academic institutions (i.e. soft architecture). The arrangement of this hard and soft architecture has an important bearing on the way the economic system functions and new clusters develop. Of course, this is not just true of today's cities but was true of industrial and pre-modern cities as well. As we discussed earlier, what is new about post-modern cities is that they are less driven by the needs of 'production' (i.e. manufacturing, shipping, administration and so). Instead, what counts is the way people live their lives and interact with each other. Thus, the hard and soft architecture of a post-industrial city must be designed to enhance these two facets. This is not the place to regurgitate the evolving literature on town planning but there are a few issues that can be highlighted in the current context:

Mix-and-Match: Only till recently, cities were designed for production rather than to be lived in. This meant that the architecture was designed to move goods and people to-and-from the place where production took place efficiently. Since the city was not really meant as place to live one's life, various kinds of suburbs developed. In short, there was a clear distinction between where one worked and where one lived. Technology has changed this and people now live in cities in order to enjoy the concentration of amenities and to interact with other people. However, people are infinitely

heterogeneous and they live their lives in many different permutations and combinations. Therefore, 21st Century cities will have to develop an architecture that takes this into account. One implication of this is that city-centres will have a mix-and-match of a variety of activities – recreation, education, residential, medical and so on. We can already see the impact of this new thinking on Singapore's development with the construction of Singapore Management University, the Esplanade theatre complex, the Integrated Resort and perhaps the new Botanical Gardens, all within walking distance. We are also likely to see more residential conversions in the Central Business District. However, there is probably a broader need to do away with the rigid zoning approach of the past and increasingly generalise this process. Note that the result may be a more fluid but it is not necessarily unplanned.

Interactive: Post-industrial cities need to create the infrastructure where people can interact, and have chance meetings. The latter is important because so much depends on the ability of cities to allow unpredictable 'random networks' to develop (in contrast, telecommunications only allows lines of interaction that has been actively sought out). Thus, cities need spaces that encourage such interaction be they bars and restaurants, parks, museums, shops, the evening dance class, interest groups like the Economics Society of Singapore and so on. In the past, these were peripheral to the economic activity of the city but now they are the main reason that cities exist. The problem again is that it is not always possible to pre-determine how people will interact. Thus, this requires deliberately

leaving unstructured spaces in the hard architecture – something that Prof. William Lim calls: ‘Spaces of Indeterminacy’⁹. Similarly, the rules that regulate soft architecture (such as philanthropic trusts, cultural associations, think-tanks etc) should also be eased in ways that encourage variety and dense human interaction. An important caveat needs to be mentioned here – ‘indeterminacy’ does not mean ‘chaos’. As a study by Glaser and Gottlibet shows, the decline in urban crime in US cities in the 1990s encouraged civic interaction and urban revival¹⁰.

The dangers of overbuilding: A key driver of human interaction in urban centres is concentration. However, overbuilding is a serious threat to the process. In the past, overbuilding merely meant wasted capital and did not directly affect the functioning of other production processes. However, overbuilding in a post-industrial city may lead to dispersal of people and consequently hurt the very interactions that drive the city economy. For example, it could be argued that bars should be carefully clustered and the number of licenses restricted in order to ensure that there are a few lively night spots rather than several dull ones. This is just as true of ‘soft’ architecture. For instance, one Economics Society of Singapore may be a good way to encourage the community of economists to interact, but eight ESSs would completely miss the point. In short, Singapore’s policymakers need to be mindful that by building a new facility, they effectively drain away people from another facility. This does not mean that new facilities should not

⁹ ‘Alternative (Post) Modernity: An Asian Perspective’, William SW Lim, 2003

¹⁰ ‘Urban Resurgence and Consumer City’, Edward Glaeser & Joshua Gottlibet, HIER Discussion Paper, February 2006.

be built. Rather, it means that planners need to be extra sensitive to this danger in the new paradigm.

8. STRUCTURE AND UNSTRUCTURE

Much of the above discussion looked at how the post-industrial city must have a more fluid and indeterminate spaces in order to allow for the new dynamics of a 21st Century city. The need for such a flexible architecture has tended encourage the view that new global cities cannot be pre-planned but must grow organically. However, this is not true because fluidity can be encouraged and enhanced through planning. For instance, a 'wild beach party' on New Year's Eve may appear to be unstructured and fluid. However, it is almost certainly planned. The event would hardly be successful if no one had planned the venue, music, drinks and finally invited people. To expect a vibrant global city to evolve organically is like expecting a New Year's Eve party to spontaneously erupt; it can happen sometimes but intelligent planning can certainly enhance the chances.

Singapore's planners must however recognise the difference between a hard-wired industrial city and the more fluid, mix-and-match, post-industrial city. As Coward and Salingaros put it, "A city works like a brain, not a computer"¹¹. Thus, old industrial-era zoning laws that neatly separate out various human activities will hurt the new urban paradigm by retarding human connectivity. Of course, this does not mean that we abandon planning and haphazardly build warehouses in residential areas, and concert theatres next to Changi

¹¹ 'The Information Architecture of Cities', Andrew Coward and Nikos Salingaros, Jan 2004.

Airport. What is needed is a deliberate plan that encourages human interaction and makes Singapore an enjoyable, vibrant place to live – the economics will naturally follow.

9. IS THERE AN OPTIMAL SIZE?

The idea of 'Clustering' is the underlying theme of this paper. In the earlier sections, we have discussed the dynamics of the clustering process. However, it all works only if the level of activity reaches some minimum threshold. This is especially true for financial hubs because they need to be filled with good generalists and, therefore, need to have a broad range of services and amenities. Thus, size matters and existing global cities have tended to be large cities. With an estimated population of 4.3 million, Singapore is not a small city but it is admittedly much smaller than most international and national financial centres. According to United Nation estimates, the urban agglomeration of Tokyo has 35.5 million inhabitants, New York- Newark has 18.5 million, Shanghai has 12.6 million, Hong Kong has 7.2 million, Mumbai has 18.4 million and London has 7.6 million (the estimate for London is probably a gross understatement as it probably does not account for the urban system that has developed in South East England)¹².

This observation has often led to concern that Singapore is perhaps too small to be able to build up the minimum level of activity to be a full-fledged global

¹² *World Urbanization Prospects* (2003 Revision), Population Division, United Nations. The data related to estimates for 2005. Note that size itself does not make for a financial hub. Many large cities are not major financial centers although they may be important cities at the national level – for example Lima (8.1mn), Lagos (11.1mn), Dhaka (12.5mn).

city. Many commentators and even policy-makers have been heard saying that the population needs to grow sharply in order create a credible cluster. People tend to put the minimum size of around 6-8 million (about the size of Hong Kong) but in reality it is very difficult to work out the number using an objective methodology.

Some academic efforts have been made since the Seventies to estimate optimal city size. While a number of methodologies have been developed, the underlying premise is similar and relatively simple – the optimal size of a city is that at which the marginal gain from agglomeration is equal to the marginal cost of congestion. Unfortunately, in practice these are very difficult to estimate empirically, and the results from different studies are neither consistent nor especially compelling. Furthermore, the results are too generic to be of use for specifically working out the minimum size needed for making Singapore a viable global city.

One finding, nonetheless, stands out – the gains from a successful agglomeration can be so large that even an urban system the size of Tokyo may not be too large!¹³ History too suggests that there are gains from crossing a threshold size. After all, the list of the very largest and most successful cities in the world have been remarkably stable for centuries, like New York, London, Chicago, Paris and so on. Some like Rome, Delhi and Beijing have been major urban centers for even longer. It is the second tier cities that seem to rise and fall. Thus, it appears that once a large enough

¹³ 'Agglomeration Economies and a Test for Optimal City Sizes in Japan', by Yoshitsugu Kanemoto, Toro Ohkawara and Tsutomu Suzuki, *Urban Economics Workshop*, Kyoto, September 1996.

cluster of human capital and amenities have been built up, the benefits of agglomeration are substantial and persist for long periods. In the post-industrial world, this difference between the 'men' and 'boys' is likely to be even greater because cities are driven even more than before by the principle of clustering.

What does this imply for Singapore? It means that Singapore's urban system should seriously consider bulking up – but only as long as the economic gains substantially outweigh the escalating cost of congestion. In other words, Singapore should at least be as large as can be comfortably fit into the available area. A scenario planning document by the Urban Redevelopment Authority suggests that the city-state can comfortably hold about 5.5 million people¹⁴. Thus, 5.5million can be considered an intermediate target population size although some commentators may feel that is still too small to be a credible cluster. However, before we begin to target even larger populations, we must recognise that even this level could pose practical problems that must be taken into account. First, the incremental population will have to be generated entirely through immigration. At present, the population size is approximately 4.3 million with citizens and permanent residents accounting for about 3.5 million. However, birth rates in the resident population are too low even to keep the population steady in the long run (the latest reading suggests 1.26 births per woman of childbearing age). Thus, the additional population will have to be imported and that too within a relatively short period in order to get Singapore to the threshold level (say within 15

¹⁴ URA's Concept Plan 2001 (see www.ura.gov.sg).

years). Also note the 'gross' rate of immigration will have to be significantly higher as there will always be a fair amount of attrition. Foreigners have always been an important segment of the population and Singapore has an excellent record at integration (virtually everyone is an immigrant or the descendent of one). Nonetheless, the social implications of this process must be considered even if many of the new arrivals are willing to become citizens or permanent residents.

Second, and even more difficult, is the problem of maintaining the quality of immigration. After all, this model is dependent on clustering human capital and not just people. If the quality declines, the costs of congestion will quickly outweigh the gains from agglomeration. Unfortunately, it will not be easy to consistently attract high quality people every year, especially since there are many countries and cities vying for these same talented people (note that we should expect very high attrition for this category of people, and therefore the gross inflow will have to be much higher than the net rate).

Third, it must be remembered that the theoretically maximum possible number of inhabitants can only be comfortably accommodated after necessary infrastructure has been put in place. This may take many years and, meanwhile, the city-state runs the risk that the clustering process does not take root. Indeed, the Urban Redevelopment Authority's Concept Plan envisages the 5.5 million population size in 40-50 years. In this author's view, Singapore cannot wait for such a long time if it wants to cluster up to be Asia's Global City. Thus, a 'fast-track' approach may have to be taken to support this population size.

As can be seen from the above discussion, bulking up is not just a matter of having a target population size. In my view, however, there are a number of ways that 'intelligent design' that can be used to mitigate the above constraints. Two possible strategies are discussed below and they are not mutually exclusive:

First, create 'pull' factors that directly identify and attract quality human capital rather than passively rely on the job market, easy immigration laws and the quality of amenities. One such factor can be the proactive use of tertiary education to attract talent. Thus, current policy of encouraging new academic institutions (such as the Singapore Management University and branches of foreign universities) is a very important part of the overall strategy. The easy availability of good human capital can itself encourage the types of activities that employ them and thereby generate a virtuous cycle. Even the students who decide to leave will create a useful global network that feeds back to the city-state in many ways.

Second, and more intriguingly, the planners could explore the possibility of bulking up by using its geographical hinterland. Johore Bahru and Kuala Lumpur (KL) are in another country but it may be possible to integrate them into the same urban system by building up high-speed transportation and other links (perhaps even have a coordinated immigration system). The Singapore-KL urban system would immediately have a population of more than 9 million. There is no reason to worry that cheap real estate on the mainland would suddenly cause an outflow because the new urban dynamic

no longer functions like the traditional suburban system. The old arrangement was a hub-and-spoke system where people lived in the periphery and commuted to the centre. The new urban system is more like a network with various nodes – for example, the urban network around New York extends from Connecticut to New Jersey. The existence of cheaper housing in New Jersey does not empty out Manhattan. Similarly, the system around London now encompasses much of South-East England. Of course, many people still commute to the centre but increasingly people live and work at various nodes in the network. There are even people who live in the city and reverse-commute. This process has economically benefited both the inner-city as well as the network as a whole. Thus, a dual node urban system combining KL and Singapore is possible, and is likely to benefit both cities as well as subsidiary nodes like Johore Bahru (the latest proposal for a free immigration zone in Johore may be a step in this direction).

10. CONCLUSION

This article discusses the art of deliberately creating a global city for Asia in Singapore. 21st Century cities exist in order to allow human interaction and enhance lifestyle. Such clusters developed organically from an earlier milieu in the case of London and New York, but this does not mean that the process of clustering cannot benefit from deliberate planning. Indeed, this article argues that the process can be triggered and encouraged by 'intelligent design'. This is particularly true for late entrants in Asia who can study and understand the urban dynamics of existing global cities in Europe and North America. Nonetheless, planners must note that there is a fundamental difference between the hard-wired planning of industrial cities and the fluid clustering of post-industrial cities.

Successful global cities are often hubs for both financial and business activity as well as for arts and entertainment. This is not surprising because they both require uncodifiable human interaction as well as a concentration of hard and soft amenities. However, the characteristics of both types of clusters have been examined and these are some conclusions:

First, the financial and business hub is a good generalist that is able to create a good mix of various ingredients and leverage the urban system as a whole. In contrast, the arts hub can succeed as a narrower cluster and is therefore probably easier to engineer through a concentrated effort.

Second, the financial and commercial hub enjoys very strong economies of scale such that a successful cluster will compete away business with other hubs. In contrast, arts and entertainment hubs do not necessarily compete with each other in quite the same way. The inward gravity of a large cluster can be balanced by the gains from differentiation.

Third, the financial and business cluster requires more generalised intervention through the definition of rules and regulations, the establishment of civic amenities, the design of attractive taxation regimes, and so on, as well as an open-ended system that encourages external links. In contrast, the arts and entertainment hub can benefit greatly from specific interventions in the form of top-down patronage.

The way the soft and hard architecture of a city is arranged has a strong impact on the way an urban cluster develops. Those planning a post-industrial global city must ensure that these cities encourage human interaction, enhance lifestyle through a mix-and-match of amenities and, finally, avoid the dangers of over-building. This means that a post-industrial city must have a fluid structure and that there is even need for spaces of indeterminate usage. With a bit of imagination, however, there is no reason why such a structure cannot be deliberately engineered.

This paper ends on a discussion of optimal city size. While it is difficult to work out a hard number objectively, it is fair to say that size does help as long as the gains from agglomeration outweigh the costs of congestion. For Singapore, bulking up means being able to sustain a pipeline of immigration

without compromising on social cohesion and the quality of human capital. Pro-active strategies may be needed to create and maintain this pipeline. At the same time, the authorities should explore the idea of bulking up by using the geographical hinterland rather than exclusively relying on population density of the city-state alone.

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