By Khoo Teng Chye

THE CLC FRAMEWORK

for Liveable and Sustainable Cities

Khoo Teng Chye is the Executive Director of the Centre for Liveable Cities (CLC), a Singapore-based knowledge centre with a mission to distil, create and share knowledge on liveable and sustainable cities. The CLC Framework was conceived by Dr Liu Thai Ker, Chairman of CLC; and developed with inputs from Cheng Hsing Yao, Chng Kai Fong, Dr Limin Hee, Prof Lily Kong, Leong Ching, Donald Low, Aaron Maniam, Prof Neo Boon Siong, Ng Wai Keen, Serena Wong, and Yang Wen.

Singapore is a densely populated metropolis with more than five million inhabitants living on 710 square kilometres of land. In liveable city surveys over the last few years, including Mercer's *Quality of Living Survey* of 2011, Singapore is one of few high-density cities that are able to achieve high liveability standards.

In the 1960s, it would have been hard to imagine that Singapore – then a fledgling nation troubled by high unemployment, urban slums, poor infrastructure, lack of sanitation, and an unskilled labour force – would make the leap from a developing nation into a thriving global city in the space of 40 years.

Today, many highly liveable cities exist in large geographical spaces with low-rise developments, less dense populations and low-polluting industries. Cities such as Sydney or Vancouver are often cited. Singapore is one of the outliers that have combined highly dense urban structures with high standards of living. This

The CLC Liveability Matrix

represents an intriguing possibility that high-density living does not have to compromise on quality of life.

How is this achieved? And, what has Singapore learnt in the process? These are key questions that Singapore's Centre for Liveable Cities (CLC) will address.

Method: Urban Systems Studies

When Singapore's pioneering leaders started to build the city, they did not have a particular framework in mind, or a written set of principles and guidelines. CLC's challenge is to distil these – not just the formal institutions of urban development, but also the tacit knowledge from those that led Singapore's urban planning and governance over the decades.

In exploring these, we paid special attention to the role of key actors, enabling processes and innovative policies that we believed to be crucial to understanding the transformation of Singapore. The basic units of analysis were the institutions, which we defined as "rules of the game." Formal institutions include the law, formal rules and regulations, and structures of governance. Informal structures include norms, principles and values. These research outcomes are captured in CLC's ongoing research in Singapore's urban systems.

Snapshot of the CLC Framework

The purpose of the CLC Framework is to provide a lens through which city leaders can view their cities and analyse the actions or approaches open to them to achieve high liveability.

Three outcomes have been constant in how Singapore envisioned liveability. First, Singapore needed a competitive economy in order to attract investments and provide jobs. Second, the city has to survive with limited natural resources in terms of land and water. Thirdly, it has to maintain an acceptable quality of life, which includes addressing environmental and hygiene problems, as well as providing affordable education, housing and healthcare. These three outcomes are highly visible, and could be a statement of policy goals. But what are the processes and mechanisms that enable this

CLC Liveability Framework

High Quality of Life

Competitive Economy   **Sustainable Environment**

Outcomes (What's)

Integrated Master Planning & Development
- Think Long Term
- Fight Productively
- Build in some Flexibility
- Execute Effectively
- Innovate Systemically

Systems (How's)

Dynamic Urban Governance
- Lead with Vision and Pragmatism
- Build a Culture of Integrity
- Cultivate Sound Institutions
- Involve the Community as Stakeholders
- Work with Markets

> " Singapore is one of the outliers that have combined highly dense urban structures with high standards of living. This represents an intriguing possibility that high-density living does not have to compromise on quality of life. "
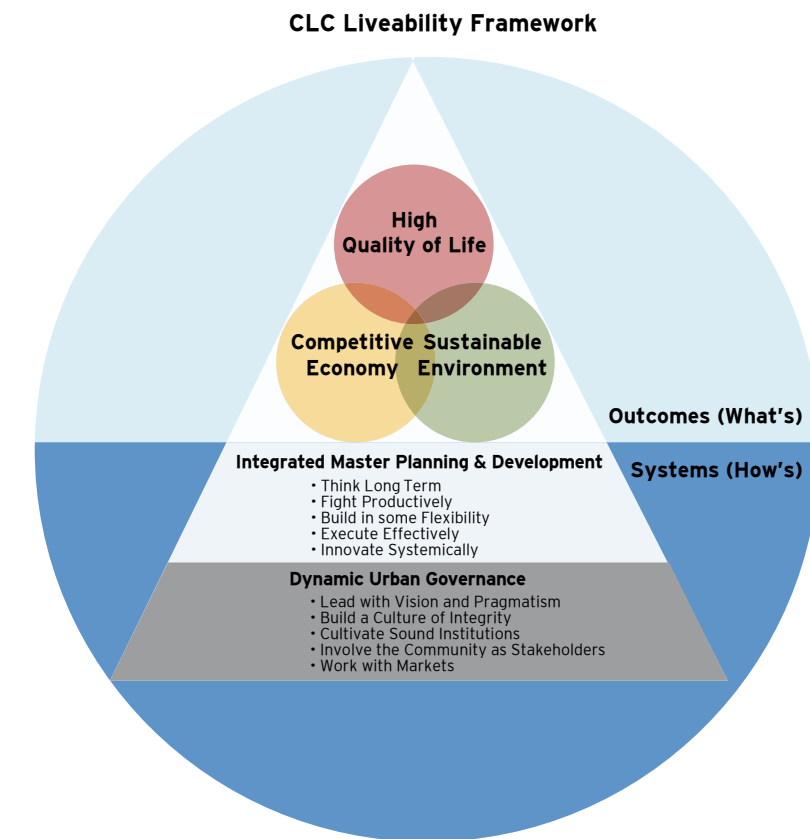
transformation? What are the "rules" that must be in place to sustain these desirable outcomes?

In short, how did Singapore achieve these outcomes? These mechanisms or operating "rules," are not so apparent.

We explain this with the CLC framework graphically represented by the diagram above. As a working hypothesis, we take two elements as key in understanding the institutional change of Singapore – first, integrated planning and development, keeping the outcomes of a liveable city in view over the long term; second, urban governance of a dynamic nature that sustains the conditions for a liveable city to thrive.

The Liveable City Outcomes

These outcomes have remained consistent over the last 50 years. From Singapore's experience, there are often no absolute levels whereby liveability is met. It is more often than not about optimising the trade-offs at each stage of development, adapting to the circumstances and challenges prevailing at the time.

Outcome 1:
A Competitive Economy
The presence of a competitive economy is crucial to a city's liveability. Residents must have the opportunity to make a living and achieve a degree of economic security. Likewise, the city must be able to generate income in order to sustain itself, invest and create further opportunities for economic growth.

Singapore's urban systems have had an integral role in supporting the country's economic development. This includes the allocation of land and facilities for industrial use, transportation networks, and the supply of water and the provision of sewerage facilities. Its economic policies have also been dynamic and adaptive to changing global conditions, with government agencies well-aligned to compete for foreign investments for development.

Outcome 2:
A Sustainable Environment
Environmental sustainability also means the long-term sustainability of resources that are vital to the survival and functioning of Singapore. As much as the Singapore government placed huge priority on economic development in the early years, it did not take the "develop first, clean up later" approach of many developing nations. The city-state brought environmental protection in line with both economic development and city planning.

During the 1960s and 1970s, Singapore paid attention to a clean and green environment in order to improve public health, inculcate social responsibility, and show foreign investors that the country was well-run. Environmental values were therefore embedded into a larger social and economic narrative by framing it as a means to distinguish Singapore from regional peers. This was key in understanding how environmental concerns had an early and important place at the policy table.

Outcome 3:
A High Quality of Life
In the early stages of Singapore's development, slums, squatters and substandard living conditions were prevalent. At that time, improving quality of life would have incorporated basic accommodation, sanitation and an elementary public health system.

In order to meet this, Singapore's Public Housing Programme provided accessible and affordable housing and amenities for its citizens. Till today, it encourages home ownership with over 80% of Singaporeans living in apartments built by the Housing Development Board (HDB). The government also made a conscious decision to keep Singapore green and more pleasant for its residents. Social integration has, likewise, played a part in the building of Singapore. Initiatives such as the 2004 Active, Beautiful and Clean Waters (ABC Waters)

Programme sought to transform urban infrastructure into aesthetic landscapes and recreational spots. Numerous cultural initiatives have given rise to the city's Esplanade theatres, various museums and cultural venues.

Integrated Master Planning and Development

Integrated master planning goes beyond the making of physical plans. It addresses the need to optimise planning decisions such that the outcomes for the environment, economy and quality of life can be balanced, especially with competing demands for use of limited land. It must also ensure that meeting long-term outcomes as well as short-term needs are optimised. But the key differentiating factor for Singapore's planning is that its plans do not stay just on paper – they are implemented and executed with dedicated organisations, expertise and resources.

Implicit "Rules" of Integrated Master Planning and Development
At each stage in the integrated master planning and development process, there have been five implicit operating "rules" that have remained remarkably consistent over the years.

Rule 1: Think Long Term
Thinking long term helps officials keep the three outcomes in balance at both the planning and implementing stages. A longer-term view can also help planners make decisions on developing a good project that may be before its time. Long-term thinking provided government agencies with a sense of mission and direction, and at every point in time, rigorous decisions in evaluating and implementing projects have to be made to deal with challenges based on the best knowledge and information available at that time.

Rule 2: Fight Productively
In a rational, interest-based analysis, government agencies tend to focus on their own targets rather than the larger goals of government. An inter-agency structure forces various government departments to acknowledge each other's concerns and goals. Such a structure, and the resulting processes, gives room for "productive fights". A fight is productive when it helps officials to surface their concerns and differences, challenge proposals, and reach decisions on planning and implementation that optimise the three liveability outcomes. Unresolved issues are escalated for resolution by considering overall strategic goals and national interests.

> **Creating a liveable city is a huge and complex undertaking and city planners need the support of the city's inhabitants.**

Fights are not just a result of different interests, but also sometimes, of different perspectives. For example, our research has shown for example, some instances where political and professional ideas and assessments diverge. In these cases, it is not mere power that resolves the issue – there is a historical and deep respect for professional expertise in public policy planning and implementation in Singapore.

Rule 3: Build in Some Flexibility
While planning is necessarily for the long-term and done in some detail, city planners need to accept that no plan is perfect, just as no future is predictable. Planning needs some operational flexibility. Regular reviews of land use and development policies take into account new technologies, changing circumstances and public feedback. This process allows for the re-evaluation of development strategies as well as the strategic and specific land use plans to cater for changing economic and social needs.

Rule 4: Execute Effectively
A plan is only as good as its successful implementation. The Government set up action-oriented agencies or statutory boards for implementation of policies and programmes in view of larger national objectives.

The emphasis is on delivering the mission. In this, leadership, especially in the civil service and statutory boards, professional expertise and clear benchmarks and indicators of performance, have made a crucial difference. Technocratic excellence is also sustained by committing the necessary resources to ensure that agencies stay on track.

Rule 5: Innovate Systemically
Singapore learns from the experience of many countries. But, instead of merely imitating successful practices, officials seek to understand the underlying causes and then adapt the principles to the local context to achieve its policy objectives. This systemic mindset has led to many policy innovations in dealing with urban development challenges in Singapore. Through continuous experimentation, learning and adaptation, Singapore has achieved significant breakthroughs in areas such as economic development, public housing, water management, transport regulation, and industrial infrastructure.

Dynamic Urban Governance

Singapore's geographical scale and structure of government allows for efficiency in policy formulation and implementation. Having delivered on security as well as economic and institutional development, Singapore's urban governance challenges lie in achieving dynamic and effective governance that enables public leaders and citizens to interact to make optimal decisions and choices in an environment that is unpredictable and constantly changing.

Implicit "Rules" of Dynamic Urban Governance
Urban governance refers to the manner in which public leadership interacts with citizens and other stakeholders to make decisions regarding, and have oversight over how a city plans, develops, utilises and manages its physical and environmental resources to achieve national outcomes. Of the many implicit "rules" that had an impact on Singapore's urban governance approach, five stood out:

Rule 1: Lead with Vision and Pragmatism
Leadership has an important impact on planning and implementation. One important aspect of leadership is having the political will to push through policies or projects that are considered unpopular or politically difficult if leaders are convinced that such policies or projects are for the long-term benefit of the city. Although they may have a long-term vision, pragmatic leaders are able to focus on what needs to be done immediately, or what can feasibly be done, rather than adhering to ideological principles for their own sake.

Rule 2: Build a Culture of Integrity
Public sector culture is values and beliefs that affect how civil servants, public officers and politicians execute their responsibilities as well as the legitimacy gained amongst its citizens. Accountability, too, is of equal importance. Governments must ensure that sound financing mechanisms are in place to maintain fiscal solvency and, hence, the sustainability of projects. Formal structures to defend against corruption include systems that are transparent, high disclosure requirements, and severe and public punishments.

Rule 3: Cultivate Sound Institutions
Institutional rules and norms, both formal and informal, enable government agencies to work effectively together, irrespective of different (or competing) interests or professional opinions. These institutions include clear and transparent policies as well as incentive structures. The formal institutions can be simple or complex, fixed or adaptive – the variety of forms have been captured in the CLC urban systems studies in areas such as housing, transport and infrastructure, with milestones of the key institutional changes that are needed to cope with the changing policy context.

Aside from these formal institutions, what is more difficult to build, describe, and thus to transplant, are informal institutions – norms of governance such as rational approach to policy, respect for sound professional competence, anti-corruption, meritocracy, and a culture of integrity. The separation of politics and the professional services as embodied in Singapore's institutions is also a significant factor.

Rule 4: Involve the Community as Stakeholders
Creating a liveable city is a huge and complex undertaking and city planners need the support of the city's inhabitants. The government engages the community by creating avenues for participation in the policy-forming processes or in various projects. Even though policy and planning decisions are fundamentally undertaken by the government, the government has increasingly engaged the public on various initiatives to build up the legitimacy of decision-making and the policy outcomes.

Rule 5: Work with Markets
A key governance approach has been to harness market forces where they would improve efficiency. This is a matter of fiscal prudence, and the government has successfully privatised telecommunications, power generation, and some parts of public transport. At the same time, there are limits to private sector provision. For example, the Government has not privatised water provision and the majority of health care continues to be provided by the public sector. The role of the private sector therefore is called into service for, and calibrated against, the overall public role of Government.

Conclusion

As outlined, the CLC Framework derives from Singapore's urban development experience and is not meant to be exhaustive, but is a useful guide for developing sustainable and liveable cities.

The urban systems described in the Framework are of most relevance to cities that are densely populated with limited natural resources. These general principles for building an effective integrated master planning and development process, and a dynamic urban governance system are worth a look by any city interested in raising and sustaining their liveability standards.

Khoo Teng Chye is the Executive Director of the Centre for Liveable Cities since July 2010. He is concurrently the Chairman of Singapore International Water Week Pte Ltd since August 2009.

He was the Chief Executive, Board Member of PUB from Dec 2003 to 2011. He was the Chief Executive Officer/Chief Planner from 1992 to 1996 at Urban Redevelopment Authority. He headed PSA Corporation as its Chief Executive Officer/Group President between 1996 and 2002, and Mapletree Investments as its President and Chief Executive Officer from 2002 to 2003. He was the Managing Director (Special Projects) of Temasek Holdings in 2003.

Mr Khoo graduated with First Class Honours in Civil Engineering from Monash University, Australia in 1975. A President-cum-Colombo Plan Scholar, he also holds a Master of Science in Construction Engineering and a Master of Business Administration from the National University of Singapore.