20 September 2017

Ir. Allen Yeung, JP
Government Chief Information Officer
Office of the Government Chief Information Officer
15/F, Wanchai Tower
12 Harbour Road
Wan Chai, Hong Kong

Dear Allen,

Smart Hong Kong Consultancy Study Report

The Hong Kong General Chamber of Commerce has all along been supporting the Government's initiative to embrace and adopt technology more widely to develop Hong Kong into a smart city.

Many advanced economies have taken on board the concept of smart city and created successful showcases, but Hong Kong remains lagging behind. The HKSAR initiatives of using Kowloon East as a pilot area in 2015 and formulating a digital framework for the development of a smart city in 2016 have been well supported by the business community. We appreciate that the Smart Hong Kong Consultancy Study Report has consolidated valuable inputs from stakeholders, which provides ample evidence that there is a consensus of the overall direction for smart city development in Hong Kong. We therefore urge the Government to be more swift and resolute in breaking through the bureaucratic routine and take the lead to scale up the momentum immediately.
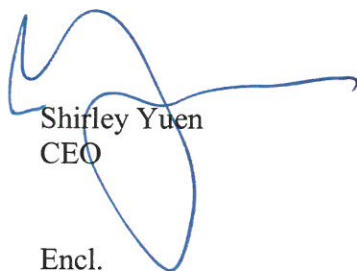
As in the Chamber's two previous submissions enclosed, we would like to emphasize again on *Smart Government*, which is fundamentally important for the development of an innovative and sustainable smart city to reinstate Hong Kong's competitiveness in the region. Instead of carrying out prolonged consultations over and over again, the Government's priorities should be to:

- Designate ONE high-level authority to champion the smart city agenda, empower government departments to get on with specific projects and ensure inter-departmental collaboration to achieve the objectives of the six smart dimensions; and simultaneously

- Identify and implement handy technological solutions that could bring in quick wins to demonstrate social and economic benefits of smart city development, so as to promote Hong Kong's smart image

Technology is advancing at light speed, while time and tide wait for no man. Having one overarching authority supported by working committees would ensure that new policies could be developed and implemented quickly and effectively, and vital infrastructure to support a smart city could be installed in a timely manner. The business sector would like to see prompt and concrete actions of a smart government, and the Chamber is again looking forward to working with the Government to enhance our living and working environment in a smarter Hong Kong.

Thank you.

Yours sincerely

Shirley Yuen
CEO

Encl.

15 February 2017

Mr Dantes TANG
Senior Systems Manager (Smart City) 4
Office of the Government Chief Information Officer
15/F, Wanchai Tower
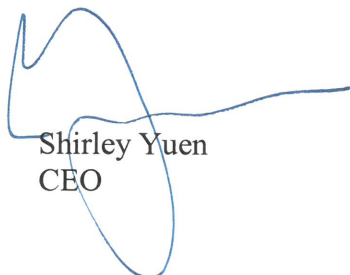12 Harbour Road
Wan Chai, Hong Kong

Dear Mr Tang,

Hong Kong Smart City Blue Print Consultancy Study

The Hong Kong General Chamber of Commerce supports the Government's initiative to embrace and adopt technology more widely as an accelerator to develop Hong Kong into a smart city.

We believe that a livable city leverages people-centric and technology-focused solutions, with an aim of increasing efficiency of the city's operation and management, improving quality of life for its citizens and strengthening its economic competitiveness. We welcome the Government's commitment to build Hong Kong into a smart city, and we would like to present our views and recommendations on how to facilitate the "Six Dimensions" of smart city development identified by the Government. Particularly, we put our emphasis on Smart Government and Smart Citizen, as they are of fundamental importance for the development of an innovative and sustainable smart city in all aspects. We also propose some feasible initiatives to drive Smart Living, Smart Economy, Smart Mobility and Smart Environment for Hong Kong, which are elaborated in the enclosed paper, and I hope you find it useful.

Thank you.

Yours sincerely

Shirley Yuen
CEO

Encl.

Hong Kong Smart City Blue Print Consultancy Study

1. The Hong Kong General Chamber of Commerce supports the Government's initiative to embrace and adopt technology more widely as an accelerator to develop Hong Kong into a smart city. Since there is no universally accepted definition of the term "smart city" and the concept has been diversely applied in many world cities, it is not sensible to put forward an eclectic mix of notions broadly for a small but dynamic business centre like Hong Kong. Instead, we should configure Hong Kong's own smart city framework based on our strengths, and choose existing solutions or develop new initiatives to cope with the bottleneck of sustaining our economy. **Given Hong Kong's characteristics of having a high population density and bustling business activities within a small territory, the notion that a smart city should mean a "livable city" would be most applicable to us.**

2. **We believe that a livable city leverages people-centric and technology-focused solutions, with an aim of increasing efficiency of the city's operation and management, improving quality of life for its citizens and strengthening its economic competitiveness.** Although Hong Kong has not been at the forefront of smart city adoption, the Government is on the right track of scaling up the momentum. We would like to present our views and recommendations on how to facilitate the "Six Dimensions" of smart city development identified by the Government. Particularly, **we put our emphasis on *Smart Government* and *Smart Citizen*, as they are of fundamental importance for the development of an innovative and sustainable smart city in all aspects**, and we also propose some feasible initiatives to drive *Smart Living, Smart Economy, Smart Mobility* and *Smart Environment* for Hong Kong.

Smart Government

3. As different government bureaus and departments will be involved in implementing smart city initiatives, this may represent, to some extent, challenges for the Government to develop, coordinate and implement policies and for private enterprises to easily develop new ideas and implement new initiatives. For example, the installation of new telecommunications infrastructure requires liaison with and permits from several different government agencies, including the Lands Department, Highways Department and Environmental Protection Department. As each of these departments may have its own requirements, policy objectives and operational considerations, the entire process would be quite time consuming. In order to achieve the intended results of the smart city blue print in an effective and efficient manner, **there is a need for the establishment of a high-level designated authority to champion the smart city agenda and ensure integrated policy planning to achieve the objectives of the six smart dimensions. For those smart city perspectives requiring collaborations among departments, e.g. adoption of new Smart Mobility and Smart Environment technologies, interdepartmental committees should be set up to take the lead in driving the implementation of initiatives**. Having one overarching authority supported by working committees to override the bureaucracy would ensure that new policies could be developed and implemented, and vital infrastructure could be installed in a timely manner.

4. A Smart Government should allow greater flexibility of adopting innovative solutions and breaking away from bureaucratic rigidity, and encourage a variety of innovative urban designs while not jeopardizing statutory controls. To achieve this, **the**

Government should identify and prioritize those technological solutions that could bring in quick wins to demonstrate social and economic benefits. For example, efficient transport is crucial for a city to function properly and the impact is apparent to the general public. If such effective solutions as smart apps and smart traffic lights system (to be mentioned later) do not require a positive consent from the community, the Government should act quickly to catch up with other smart cities. **The Government should also review and amend outdated and untimely regulations impeding the adoption of emerging solutions that have been successfully implemented elsewhere**.

5. The success of smart city initiatives depends very much on the availability of easily accessible open source data since they all involve huge amounts of data collection, storage and analytics. **The Government should provide enough encouragement and incentives, and formulate the required legislative framework to facilitate the sharing of data necessary for the implementation of smart city initiatives by stakeholders.** There needs to be a clear understanding of and distinction between privacy of data (which identifies and associates information with an individual or single commercial entity) and use of anonymously aggregated data which can be of great value (and on which all smart city initiatives depend) without jeopardizing the data privacy aspects.

6. To fully utilize mass information, a common and user-friendly platform is needed to share data contributed by the Government, industry players and other stakeholders. We appreciate that the Government has established a one-stop portal (www.data.gov.hk) to host and facilitate the sharing of data. However, these data are usually presented in formats which are not straightforward for third parties to use. The Government should offer data through the dedicated portal with open application programming interfaces ("APIs") to enable the public and business startups to access back-end data for developing applications more easily.

Smart Citizen

7. Without smart people, there is no smart city, as any long-term smart city developments are built upon the investments in talents and technologies, as well as the needs and aspirations of citizens. Singapore launched its Masterplan for IT education in 1997 to lay out a comprehensive strategy for creating an IT-based teaching and learning environment in every school, and recently developed a vision of a data-driven education strategy to make education more immersive and more personally impactful. Many prominent academic institutions around the globe, including the Massachusetts Institute of Technology, have begun to take a bigger role in smart city education by offering courses to help students and professionals get a better grip on smart city solutions. **The HKSAR Government should work with local tertiary institutions to conduct research studies on various smart initiatives, and develop adaptive education programmes and courses to nurture smart city innovators and entrepreneurs**.

8. Education means not only nurturing professionals to develop and maintain a smart city's infrastructures, but also promoting and teaching the general public the knowledge of using them. However, the usual top-down and policy-driven approach, i.e. developing information technology courses and implementing e-learning in schools, and providing funding support to nurture new technologies, may not be able to bring in the most effective results, as the general public is more concerned of their everyday lives and

neighborhoods – housing, employment, transportation and environmental quality than the omnibus smart city concepts. To empower a more productive relationship between a smart city and its citizens, the Government should "**Create a Smart City with Citizens**". While some of the conventional engagement measures such as public consultation, propaganda and education should continue, the participation of citizens must be proactively integrated into the strategic development and implementation process. E-participation, for example, should go beyond supplying citizens with information, but also giving them an opportunity to co-create solutions via interactive and transparent platforms.

9. In particular to those proposals involving heavy investment and/or irreversible consequences such as major infrastructure projects, the Government should conduct a thorough cost-benefit analysis and engage stakeholders to gain social acceptance before proceeding to implementation. Such participatory mechanisms help identify the community's issues and aspirations, generate a sense of ownership by allowing citizens to take part in the design, implementation, monitoring and evaluation of public policy, resolve conflict of interests within the community, facilitate people to understand how to get the best from their environment, and build up consensus. **The Government should play a proactive role in consolidating valuable inputs, addressing hurdles and resolving conflicts among stakeholders**, so as to drive the overall policy framework to realize the vision agreed upon by stakeholders.

Smart Living

10. Utilizing technology is indispensable to the development of a smart city. In particular, information, communications and technology ("ICT"), i.e. wifi infrastructure, Internet of Things ("IoT"), centralised digital systems and the use of big data, will enable a better linkage among multiple initiatives. A smart electricity grid is a good example that demonstrates the essential role of ICT in ensuring a reliable energy supply for the smooth running of a smart city. A growth in the coverage of and applications on wireless and cross-platform technologies will bring improvement to people's living environment, quality of life, sustainability, efficiency and safety of the living city. Examples of smart living initiatives are:

   ● To extend the wi-fi hotspots for wider public coverage;
   ● To make wider use of smart metering and control solutions to help citizens improve their energy efficiency;
   ● To facilitate better community care in our ageing society with remote monitoring and notifications to families and friends for seniors who live independently in the community; and
   ● To encourage cost-effective coverage of e-health facilities and nursing care services.

Smart Economy

11. **Smart economy emphasizes the development of new modes of operation, which can foster closer linkage between domestic and global economies.** Although Hong Kong had transformed itself from an industrial economic module to a service economy long time ago, and is promoting the development of financial technologies ("Fintech"), the continued diversification of industries in our economy should be encouraged. In fact, smart economy provides a platform which facilitates the transformation of industries to

more sustainable ones. Some of such facilitating measures are:

- To provide funding or technical assistance (i.e. big data analytics and cloud computing) for businesses to employ smart business solutions, especially for SMEs;
- To promote wider data digitization so as to enable free flow of business/economy related information; and
- To promote the development of e-commerce and Fintech.

Smart Mobility

12. **The enhancement of the efficiency and service quality of urban transport is essential in the pursuit of smart mobility.** In view of this, clean and non-motorized transport options and a public transport/walkability regime should be encouraged through the application of ICT traffic management technologies. Moreover, as many advanced vehicle technologies and solutions have already been adopted in other places, Hong Kong should keep pace with these global smart trends. Some potential policy initiatives are:

- To develop smart traffic light systems to improve traffic flow;
- To open data for apps development and data analytics to inform users of traffic flow, traffic congestion, availability of parking facilities and queuing time, to help users locate vehicles after parking, and to remind users for payments and fees for public services;
- To boost the popularity of electrical vehicles by installing more public and private charging facilities;
- To give more incentives and supports to developers, smart mobility service providers and users for trial running innovative transport solutions in new development areas, i.e. bike sharing and car sharing; and
- To create open platforms for studying and testing autonomous diving and vehicle platooning technologies.

Smart Environment

13. We need a livable city agenda covering energy efficiency, waste management, improved air and water quality, abundant recreational facilities and open space, green buildings and sustainability. To demonstrate the environmental and social benefits of a smart city, **the Government should speed up various smart initiatives to construct a livable and people-oriented community**. Examples of such smart environmental initiatives are:

- To develop greener, cheaper and cleaner high-rise construction with the aid of intelligent engineering and innovative technologies;
- To construct smart buildings with smart energy management systems; and
- To install renewable energy facilities and demand response systems where feasible.

Conclusion

14. If Hong Kong is to remain attractive as a place to live and work, it should be doing its utmost to harness technology as a means to fulfill such aspirations. We understand that this consultancy study is to map out short, medium and longer term measures up to 2030

for developing Hong Kong into a smart city. The business sector is looking forward to working further with the Government to lay down a solid foundation with specific strategies, development plans and concrete actions to enhance our living and working environment through public-private collaboration.

HKGCC Secretariat
February 2017

4 January 2017

Ms Rammy Lo
Assistant Consultant
Ove Arup & Partners Hong Kong Ltd
Level 5 Festival Walk
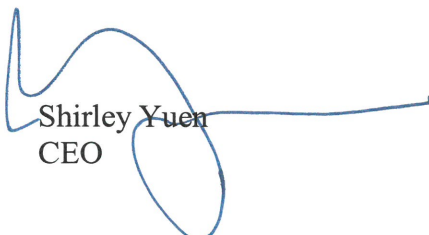80 Tat Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

Dear Rammy

Developing Kowloon East into a Smart City District
Feasibility Study Stage 1 Public Engagement

The Hong Kong General Chamber of Commerce supports the Government's initiative to embrace and adopt technology more widely as an accelerator to develop Hong Kong into a smart city, or a "livable city".

We believe that a livable city leverages people-centric and technology-focused solutions, with an aim to increase efficiency of the city's operation and management, improve quality of life for its citizens and strengthen its economic competitiveness. Although Hong Kong has not been at the forefront of smart city adoption, the Government is on the right track of scaling up the momentum. We welcome the selection of Kowloon East to trial run some feasible smart city initiatives. We also urge the Government to be an early adopter of effective solutions as soon as possible, so as to catch up with other smart cities. Our views and recommendations covering conceptual and specific aspects are elaborated in the enclosed paper, and I hope you find it useful.

Thank you.

Yours sincerely

Shirley Yuen
CEO

Encl.

Developing Kowloon East into a Smart City District
Feasibility Study Stage 1 Public Engagement

1. The Hong Kong General Chamber of Commerce, in its recent submission on "2017-2018 Policy Address cum Budget", supports the Government's initiative to embrace and adopt technology more widely as an accelerator to develop Hong Kong into a smart city. Since there is no universally accepted definition of the term "smart city", and the concept has been diversely applied in many world cities, it is not sensible to put forward an eclectic mix of notions broadly for a small but dynamic business centre like Hong Kong. Instead, we should configure our own smart city framework based on our strengths, and pick or develop solutions to cope with the bottleneck of sustaining our economy. **Given Hong Kong's characteristics of having a high population density and bustling business activities within a small territory, the notion that a smart city should mean a "livable city" would be most applicable to us.**

2. **We believe that a livable city leverages people-centric and technology-focused solutions, with an aim to increase efficiency of the city's operation and management, improve quality of life for its citizens and strengthen its economic competitiveness.** Although Hong Kong has not been at the forefront of smart city adoption, the Government is on the right track of scaling up the momentum. We welcome the selection of Kowloon East ("KE") to trial run some feasible smart city initiatives. We also urge the Government to be an early adopter of effective solutions as soon as possible, so as to catch up with other smart cities. Our views and recommendations covering conceptual and specific aspects are elaborated as follows:

Innovation-oriented Platform to Showcase KE Development

3. KE, consisting of Kai Tak, Kwun Tong and Kowloon Bay, is an area blending together old establishments and new developments. While the majority of buildings and auxiliary facilities were designed and constructed in a traditional industrial-oriented manner in the early 1970s, the whole area has been undergoing some significant transformations and re-constructions over the years, alongside the evolution of Hong Kong into a financial hub. Nevertheless, KE's development has not yet attained an effective level, due to the constraints of mixed land use and ownership. We still see many low-rise, old-style industrial buildings, complex alleys packed with pedestrians and frequent traffic congestion, especially in Kwun Tong. This is obviously not optimizing land resources, and not what we would expect from a livable city. The lack of green spaces, primary transport modes being MTR and roads and other urban nuisances in KE replicate many such problems elsewhere in Hong Kong. **KE can therefore serve as a platform to demonstrate the feasibility of implementing various smart city initiatives, and showcase how such initiatives can be incorporated in the process of its transformation**.

4. We support the Government's vision to transform KE into another core business district ("CBD2") to support Hong Kong's economic development. The "Energizing Kowloon East" pilot scheme has already brought in some achievements of creating open spaces at the waterfront area, and presented a forward-looking aspiration to develop KE into a vibrant and green commercial hub with efficient pedestrian connectivity and traffic convenience. To achieve this, **the Government should allow greater flexibility of adopting innovative solutions breaking away from bureaucratic rigidity, and encourage a variety of innovative urban designs while not jeopardizing statutory**

controls. The "Innovation-oriented Platform" proposed by the Government will play a useful function to facilitate co-creation of KE into CBD2 by cross-sector collaboration, knowledge-driven exploration and community engagement.

5. The Innovation-oriented Platform not only serves the function of gathering information and knowledge from stakeholders, but is also a place to build up consensus. While the business sector, like other members in the community, participate in the platform as initiators to drive innovative concepts, **the Government should play a proactive role in consolidating valuable input, addressing hurdles and resolving conflicts among stakeholders**, so as to drive the overall policy framework to materialize the common vision.

6. The success of smart city initiatives depends very much on the availability of easily accessible open source data since they all involve huge amounts of data collection, storage and analytics. **The Government should provide enough encouragement and incentives, and formulate the required legislative framework to facilitate the sharing of data necessary for smart city initiatives by stakeholders.** There needs to be a clear understanding of and distinction between privacy of data (which identifies and associates information with an individual or single commercial entity) and use of anonymously aggregated data which can be of great value (and on which all smart city initiatives depend) without jeopardizing the data privacy aspects.

A Smart Government to Take the Lead

7. **In order to achieve the intended results in an effective and efficient manner, there is a need for the establishment of a high-level designated authority to champion the smart city agenda, ensure integrated policy planning and drive implementation of initiatives**. As different government bureaus and departments will be involved in implementing smart city initiatives, this may represent, to some extent, challenges for the Government to develop, coordinate and implement policies and for private enterprises to easily develop new ideas and implement new initiatives. For example, the installation of new telecommunications infrastructure requires liaison with and permits from several different government agencies, including the Lands Department, Highways Department and Environmental Protection Department. As each of these departments may have its own requirements, policy objectives and operational considerations, the entire process would be quite time consuming. Having one overarching authority to override the bureaucracy would significantly improve the speed with which new policies could be developed and implemented and vital infrastructure could be installed.

8. Specifically in the pilot trial of KE, **we would like to emphasize the importance of integrated policy planning and "inter-operability" among bureaus and departments** to speed up the development process**. While the Energizing Kowloon East Office is trying its best to work on the trial, without a higher authority to coordinate inter-departmental efforts to pursue the policy objectives under one policy umbrella, each government agency having its free hand to conduct and implement its own smart city study and initiatives would not achieve desirable results.

9. On a broad sense, while the Government should leverage on the principle of smart governance to offer public services via smarter means, **it should also develop a roadmap with specific timeframes and strategies for achieving the vision of developing a smart city through the KE pilot experiment, so as to build up a facilitative regulatory**

ecosystem to encourage greater private sector's involvements in fulfilling the aspiration for transforming Hong Kong into a smart city. From the private sector's perspective, investment decisions are made only when there are favourable opportunities and policy certainty; incentives are effective drivers to encourage active involvements of businesses.

Utilize Technologies to Support Smart City Framework

10. Technology is indispensable to the development of a smart city, in terms of enhancing city resilience, property and asset management, efficiency of infrastructure, transportation network and energy usage, and connectivity. In particular, information, communications and technology ("ICT"), i.e. wifi infrastructure, Internet of Things ("IoT"), centralised digital systems and the use of big data, will enable a better linkage among multiple initiatives. A smart electricity grid is a good example that demonstrates the essential role of ICT in ensuring a reliable energy supply for the smooth running of a smart city. We believe that **the Government should be more attentive to the adoption of ICT in KE development**, and the development framework will heavily rely on wireless and cross-platform technologies. These include extending the wi-fi hotspots for wider public coverage, strengthening the seamless reception of wireless signals, collecting static and real-time data through IoT system devices, and facilitating data exchange among government departments, the public and private sectors.

11. To fully utilize mass information, a common and user-friendly platform is needed to share data contributed by the Government, industry players and other stakeholders. We appreciate that the Government has established a one-stop portal (www.data.gov.hk) to host and facilitate the sharing of data. However, these data are usually presented in formats which are not straightforward for third parties to use. It could be further improved by offering data through the dedicated portal with open application programming interfaces ("APIs") to enable the public and business startups to access back-end data for developing applications more easily.

12. We need a livable city agenda covering energy efficiency, waste management, improved air and water quality, recreational facilities, open space, sustainability, a public transport/walkability regime and, of course, green buildings, smart living and healthy ageing. To demonstrate the environmental and social benefits of a smart city, **the Government should speed up various pilot and on-going smart initiatives in KE to construct a livable and people-oriented community**. Some examples are:

   - To develop greener, cheaper and cleaner high-rise construction with the aid of intelligent engineering and innovative technologies;
   - To construct smart buildings with smart energy management systems;
   - To make wider use of smart metering and control solutions to help all citizens improve their energy efficiency;
   - To install renewable energy facilities where feasible, and demand response systems;
   - To increase the popularity of electrical vehicles by installing more public and private charging facilities;
   - To develop smart traffic light systems to improve traffic flow;
   - To open data for apps development and data analytics to inform users of traffic flow, traffic congestion, availability of parking facilities and queuing time, to help

users locate vehicles after parking, and to remind users for payments and fees for public services;

- To facilitate better community care in our ageing society with remote monitoring and notifications to families and friends for seniors who live independently in the community;
- To encourage cost-effective coverage of e-health facilities and nursing care services; and
- To implement a number of e-learning and supporting systems in selected schools.

13. The Government will conduct several "Proof of Concept ("PoC") Trials" in KE to demonstrate the feasibility of wider application of new technologies, i.e. Walkable Kowloon East Mobile App, Smart Crowd Management System, Energy Efficiency Data System, Kerbside Loading/Unloading Bay Monitoring System and other smart city solutions. Owing to time constraints and limited resources, **the Government should identify and prioritize those technological solutions that could bring in quick wins to demonstrate social and economic benefits and which possess scale-up potentials for Hong Kong**. Risk assessment should also be conducted on the applications, for example, to evaluate the increased trucking activities after installing Kerbside Loading/Unloading Bay Monitoring System. As to those proposals which may involve heavy investment and/or irreversible consequences, such as major infrastructure projects, the Government should consult stakeholders involved and conduct a thorough cost-benefit analysis before proceeding to implement them.

Conclusion

14. If Hong Kong is to remain attractive as a place to live and work, it should be doing its utmost to harness technology as a means to fulfil such aspirations. We understand that this study is in its initial stage to develop a vision and framework, and thus the above discussion focuses more on strategic and other macro aspects of the consultation. The business sector is looking forward to working further with the Government to lay down a solid foundation with specific strategies and concrete actions to enhance our living and working environment in the Stage 2 consultation.

HKGCC Secretariat
January 2017