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智慧城市聯盟
Smart City Consortium

Challenges and Opportunities of FinTech
Revolutionizing Hong Kong Financial Sector

金融科技的挑戰和機遇
革新香港金融產業

Content
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SMARTER CITY SMARTER HONG KONG

In the year of 2018, Smart City Consortium (SCC) organized and participated in numerous events and symposiums, making every effort to foster the development of FinTech in Hong Kong. One of the highlights is our Smart Banking Way Forward Luncheon where we had rounds of in-depth conversation with Mr. Norman Chan, Chief Executive of the Hong Kong Monetary Authority.

SCC has been emphasizing the importance of FinTech as a key infrastructure of Smart City for Hong Kong. No matter for business activities or citizens' daily activities, financial services are simply indispensable. The nature of technology is to bring convenience, to make our lives easier. The Faster Payment System launched by the Government is exactly one of the examples. It not only provides the public with a more convenient and user-friendly payment method but also creates a more advantageous business environment in Hong Kong. In the long run, we hope the Government would offer more technology supports such as P2P finance, blockchain and smart contract to make our FinTech infrastructure even better.

Local citizens would definitely credit the Government's efforts to develop FinTech in Hong Kong. As part of the "Nylonkong", an honour of being an international financial centre, Hong Kong needs to keep up the momentum with drive and determination so as to stay competitive. However, at the dilemma between being innovative and adequately regulated, how to strike a balance between them will surely be crucial in our journey ahead. From SCC perspective, in order to minimize the impact to citizens and users, the financial regulatory sandbox is undoubtedly an excellent tool for investigating the potential loopholes in the new technologies as well as our existing regulatory framework in a controllable manner. This will set a strong foundation for our smart city to move forward.

The new year is a time for reviewing the past and prospecting the future. Last year, we took a huge leap in the Smart City development in Hong Kong. In future, SCC will continue our effort, collaborating with different sectors to foster the development of FinTech in Hong Kong under the leadership of the Government. Let's co-create the vision of "Smarter City, Smarter Hong Kong"!

Mr. Eric YEUNG
楊全盛先生
President
會長

2018年，智慧城市聯盟（聯盟）籌辦並參與了多場活動及研究會，為推動香港金融科技發展盡一分力。其中最重要的莫過於七月份獲金融管理局總裁陳德霖先生蒞臨出席的「智慧金融研討會暨午宴」，席間我們更就各種金融科技議題進行深入探討。

聯盟一直強調金融科技是智慧城市的核心基礎建設，不論是商業活動抑或市民日常消費，金融服務都扮演着重要角色。科技，就是要予人以方便，政府早前推出的快速支付系統「轉數快」，正正就為大眾提供更方便的支付方式，更為業界創造了更理想的營商環境。長遠而言，我們希望政府可以推出更多科技配套，如P2P金融、區塊鏈、智能合約等，令香港的金融科技基建更臻完善。

政府全力推動金融科技，絕對是市民及業界所樂見的。香港作為與紐約、倫敦齊名的全球三大證券中心，需要有足夠動力及決心與時並進，才能不斷提升競爭力，以維持國際金融市場的地位。然而，創新與監管往往站於對立面上，如何在發展金融科技的同時平衡兩者將成其中關鍵，聯盟建議政府充份利用金融科技沙盒，在可控制的環境及範圍試行新興科技，以減少對市民影響為前提下，測試科技自身及監管制度的漏洞，這才可以令香港走得更前！

2019將至，又是我們回顧過去、展望將來的好時機。過去一年是智慧城市發展飛躍的一年，未來我們希望能與各界繼續攜手合作，在香港政府帶領下推動本地金融科技發展，全力打造「Smarter City，Smarter Hong Kong」！

Comments from Smart City Consortium on the Pragmatic 2018 Policy Address

智慧城市聯盟對務實的

2018年施政報告的意見

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The Chief Executive's 2018 Policy Address was announced this October. The I&T development continued to attract strong backing from the government with Chief Executive Mrs. Carrie Lam pledging an extra funding of $500 million to more than 70 measures as proposed in the *Smart City Blueprint for Hong Kong released in 2017*. The goal was to adopt new technologies across government agencies including the eID development, erection of smart lamppost, enhancement of the Government Public Cloud Services and establishment of a big data analytics platform. Smart City Consortium (SCC) is very delighted by these funding and undertaking.

To further strengthen our position as an international innovation hub, SCC sincerely hopes that the government would consider the following suggestions on the I&T development and the smart city initiatives:

First of all, the Smart Government Innovation Lab (the Lab) to be set up by the Office of the Government Chief Information Officer (OGCIO) is a practical response to address the industry's appeals, facilitating the formulation of innovative policies for better public services, such as municipal services, crowd management and cargo clearance, as well as creating more business opportunities for small and medium enterprises (SMEs) and start-ups.
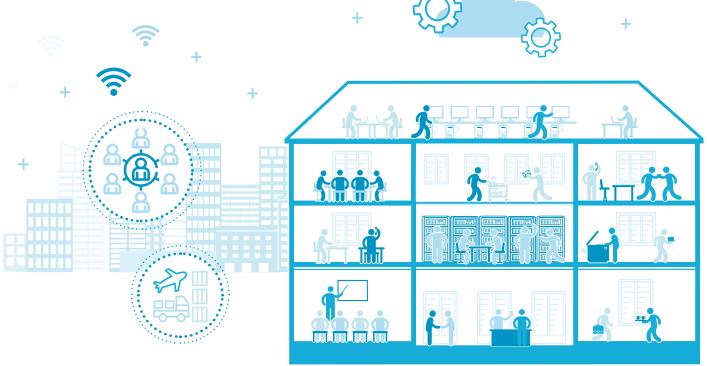
For years, SCC and members of the IT industry have supported the idea of a government-led innovation laboratory, where research units from different institutions are free to present their solutions for candid exchange of views and know-how. Furthermore, the Lab can provide an effective platform to raise new product performance in QA and application process, and deliver cutting-edge technologies to the public. We, along with partners around the world, can provide channels to promote and export our new products to every corner of the world, speeding up our local innovation activities.

2018年施政報告已於今年10月公布，創新及科技發展繼續得到政府的大力支持。去年公布的《香港智慧城市藍圖》提出70多項措施，行政長官林鄭月娥女士於今年報告中提到將會增撥五億元，以進一步推動各部門採用新科技，包括發展數碼個人身份、智慧燈柱、提升政府公共雲端服務和建立新的大數據分析平台等基礎建設項目，智慧城市聯盟（聯盟）對此等建議深表歡迎。

不過，在創科及推動智慧城市發展方面，聯盟對政府期望甚殷，因此希望以下幾個方面可以更加努力，以加強香港作為國際創科中心的地位。

首先，由政府資訊科技總監辦公室設立的「智慧政府創新實驗室」（實驗室），實在是回應了業界訴求的一個舉措。這項新措施不單能促進制訂創新措施以改善公共服務，如市政服務、人群管理、貨物清關等，並為本地初創及中小企業創造更多商機。

多年來，聯盟及業界均支持由政府主導一個實驗室，使各科研單位能夠把各自的技術放到公開的應用實驗室內，方便交流，促使新科技的技術測試及應用效果有機會可進一步改善及加快提升。一方面，這令香港受惠於最新科技，另一方面，可透過世界各地的合作夥伴，向外地展示及推廣我們的技術，擴大本地創科的發展空間。

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Furthermore, as the Hong Kong Science Park has set up a Data Studio which has much open data from private and public sector for start-ups to keep testing and fine-tuning until the solutions are ready for the market, collaboration between the Lab and the Data Studio can certainly maximize their output with each other's strengths.

Mrs. Lam also announced the plan to instruct all government bureaus and departments to release their first annual open data plan by the end of this year. We are glad that our voice has finally been heard. Opening up the big data for everyone's use is a critical step for any smart city initiative to bring about long-term changes in our living standard and the business environment.

We trust that more business opportunities will emerge if data from the public services is available to start-ups as well. One of the key infrastructures is an establishment of a common spatial data infrastructure (CSDI). Despite having endorsed the idea, the government still has no concrete plan. We highly recommend a timely implementation of a plan for the purpose.

To better prepare for the competition in the digital era, talent is no less important than hardware. Unfortunately, a long-term policy for talent acquisition is currently absent in Hong Kong. We only have short-term pilot schemes amid the fierce regional competition for talents. Competitiveness hinges on a strong talent pool. Lacking long-term strategies cannot produce any results and can even lower the effectiveness of our short-term effort. We expect our government to take further steps on this critical issue.

We also need to step up the pace in training our civil servants. It would be better if we focus on the on-job training programs today instead of waiting eight years for the civil service college to start acting. In the fast-paced and ever-changing technological landscape, our public servants need an

早前科學園內設立了數據工作室暨網上平台（Data Studio），提供公私營機構數據，讓初創在推出應用方案及產品前作測試和改良。這正好和實驗室合作，後者可以提供政府數據，讓雙方互補不足，相得益彰。

行政長官又提出計劃於年底前，要求所有政府部門公布首個年度開放數據計劃，這亦是回應了聯盟多年來的訴求。任何智慧城市的設計，開放大數據絕對是舉足輕重的一步，對於市民的生活，以及營商環境將會帶來長足改善。

政府如能將數據與初創企業分享，定必可創造更多商機。可是，雖然政府支持設立「空間數據共享平台」（CSDI），但到目前為止仍未有實施的時間表，聯盟懇切期望政府儘早落實此基礎建設。

要在數碼時代提升競爭力，人才儲備同樣重要。現時周邊國家的人才競爭激烈，但是香港卻缺乏長遠政策去吸納人才，有的只是短期的試驗計劃。須知道一個地方的競爭力繫於人才匯聚，欠缺了長遠的計劃實非良策，希望政府能夠加快步伐，從速改善。

至於公務員培訓方面，聯盟也認為不能放慢腳步，如要等待八年後才成立的公務員學院，倒不如今天先做好在職培訓計劃。科技日新月異，政府公務員團隊要做好「促成者」和「推廣者」的角色，必須具備創新思維和提高數碼素質，才能推動社會創新。

innovative mindset as well as improved digital competency to fulfill the duties of "facilitator" and "promoter" to spur innovation in our society.

Having said that, SCC is pleased to see that the smart city development model has been incorporated in the 2018 Policy Address. The drive towards a smart city is critical to our future daily life and economic growth. SCC, as a group of professionals from different corporations and organizations, is in a good position to utilize our network in the IT sector to collect views from the stakeholders on the Hong Kong's future development. We are happy to help streamline deployment of new applications so that innovative technologies can be more easily adapted to people's needs.

On the whole, SCC strongly supports the pragmatic approaches of the 2018 Policy Address in deploying new technologies and opening up big data to tailor smart city strategies for the local society. We undertake to work closely with the government to improve our living conditions so as to build Hong Kong as a world class smart city.

對於市民的生活、社會的經濟發展,以建設智慧城市作大前提實在非常重要。令人欣喜的是,在整份施政報告中,發展智慧城市的思維貫穿其間。作為匯聚來自不同行業和公私營機構專業人士的組織,聯盟正好透過業界的網絡,協助收集意見,為香港的未來發展出一分力。同時,我們也樂於促進切合香港需要的創新科技落地,令市民受惠。

整體而言,本年度的施政報告積極利用適切的政策,如創新科技及開放大數據,促使香港邁向智慧城市,取態務實,因此聯盟非常支持。我們承諾會繼續與政府攜手提升市民的生活質素,為共同推動香港成為世界級智慧城市而努力。

23rd-2nd
Sep-Oct, 2018

InnoTech Expo 2018
創科博覽2018

On 23rd September, Mr. Eric Yeung, President of SCC, was invited to attend the expert forum of InnoTech Expo 2018. The forum he chaired was called Autonomous Vehicles Heading for a New Era during which he discussed the development of smart driving and future mobility with the panelists.

智慧城市聯盟會長楊全盛於9月23日出席「創科博覽2018」的專家論壇,並擔任「無人車駛向新時代座談會」的主持,帶領探討智能駕駛以及交通發展的未來。

9th
Oct, 2018

Industry 4.0 Leadership Summit Hong Kong 2018
「2018工業4.0香港領袖峰會」

The Industry 4.0 Leadership Summit Hong Kong 2018 was successfully held on 9th October. SCC was one of the organisers. The Summit gathered government officials, innovators, and academics from various fields to discuss pressing issues encountered in Industry 4.0.

Dr. Winnie Tang, Founder & Honorary President of SCC together with two Vice Presidents Ms. Rosana Wong and Mr. Gary Yeung lent their support by attending. Ms. Wong was also the Session Chair for Transport 4.0 and facilitated the panel discussion.

「2018工業4.0香港領袖峰會」已於10月9日完滿舉行,智慧城市聯盟為今年的主辦機構之一。峰會為來自各領域的政府官員、創新者和學者提供了平台,一同探討工業4.0的進程和挑戰。

智慧城市聯盟創辦人及榮譽會長鄧淑明博士、副會長楊文銳先生和黃慧敏小姐出席及支持是次活動。黃慧敏小姐更在第三環節——「交通4.0」中擔任座談會主持,促進與會人士交流。

24th–25th Oct, 2018

The 22nd Beijing-Hong Kong Economic Cooperation Symposium cum MoU Signing on
Cross-border Financial Innovation Collaborations
「第二十二屆北京·香港經濟合作研討洽談會」
暨簽署「京港金融創新互聯互通框架協議」

The 22nd Beijing-Hong Kong Economic Cooperation Symposium was held from 24th to 25th October, marking a milestone of collaborations between the two cities. Dr. Winnie Tang, Founder & Honorary President of SCC and Vice President Mr. Gary Yeung attended the opening ceremony.

Meanwhile, SCC signed a MoU with Hong Kong PKI Forum, Beijing Software and Information Service Industry Association, China Payment & Clearing Network Company Limited to jointly promote the Beijing-Hong Kong cooperation in opening financial account with clients' real name and e-commerce contract mechanism, and also cross-border financial collaborations between Beijing and Hong Kong.

「第二十二屆北京·香港經濟合作研討洽談會」已於10月24至25日完滿舉行，標誌著京港合作邁進新里程。智慧城市聯盟創辦人及榮譽會長鄧淑明博士和副會長楊文銳先生，代表聯盟出席京港洽談會開幕式。

同時，聯盟於洽談會期間夥同香港公匙基建論壇，與北京軟件和信息服務業協會和中金支付有限公司簽署「京港金融創新互聯互通框架協議」，共同推進兩地實名制金融開戶及電子商務合同機制合作，推動京港兩地跨境金融互聯互通發展。

24th–25th Oct, 2018

The 22nd Beijing-Hong Kong Economic Cooperation Symposium cum MoU Signing on
Facilitating Non Face-to-face E-Contract
「第二十二屆北京·香港經濟合作研討洽談會」
暨簽署「推進京港非面對面電子合同合作備忘錄」

During the High-Tech Industry Cooperation Special Event at Beijing-Hong Kong Economic Cooperation Symposium on 25th October, SCC signed a MoU on Facilitating Non Face-to-face E-Contract with Hong Kong Software Industry Association, The Chinese Manufacturers' Association of Hong Kong, Asia PKI Consortium and three other Beijing parties, aiming to jointly promote the legal protection for cross-border e-commerce and further cooperation along "Belt and Road" countries and regions.

在10月25日，「第二十二屆京港經濟合作研討洽談會－高精尖產業合作專題活動」期間，智慧城市聯盟夥同香港軟件行業協會、香港中華廠商聯合會和香港公匙基建論壇，與北京合作方簽署「推進京港非面對面電子合同合作備忘錄」，為跨境電子商貿提供必要的法律保障，並把合作推廣至「一帶一路」沿線國家及地區。

29th-2nd
Oct-Nov, 2018

Hong Kong Fintech Week 2018
香港金融科技周2018

The world's first cross-border financial technology (FinTech) event Hong Kong Fintech Week 2018 was held from 29th October to 2nd November in Hong Kong and Shenzhen. Dr. Winnie Tang, Founder & Honorary President of SCC, represented the organization to give a keynote speech about Smart City and FinTech in the Greater Bay Area Conference. She also joined a forum with Mr. Andy Chung, Chairman of Green Committee of SCC, and other guests to discuss and explore how FinTech can spur innovation in Smart City.

全球首屆跨境金融科技盛會「香港金融科技周2018」於10月29日至11月2日在香港和深圳舉行。智慧城市聯盟創辦人及榮譽會長鄧淑明博士在大灣區的智慧城市和金融科技的主要會議中，代表聯盟發表主題演講。她更與聯盟綠色委員會主席鍾偉樑先生參與討論環節，與其他嘉賓一同探討智慧城市和金融科技發展的關係。

1st
Nov, 2018

Think Global, Think Hong Kong

Dr. Winnie Tang, Founder & Honorary President of SCC, was invited as a moderator in a discussion panel titled "Innovation For a Smart City" at Think Global, Think Hong Kong, a mega promotion event organized by the Hong Kong Trade Development Council on 1st November in Tokyo, Japan. Panelists shared their insights on the application of emerging technologies to innovate a modern society.

11月1日，智慧城市聯盟創辦人及榮譽會長鄧淑明博士出席由香港貿發局主辦的大型交流活動「Think Global, Think Hong Kong」，並代表聯盟為一個以「智慧城市的創新」為題的論壇擔任主持。論壇圍繞新興科技如人工智能、區塊鏈及大數據，如何為社會帶來改變。

20th Nov, 2018

ASEAN Smart Cities Network and The Challenges of Urbanization

Dr. Winnie Tang, Founder & Honorary President of SCC, attended the ASEAN Smart Cities Network and The Challenges of Urbanization forum on 20th November. She participated in the second panel discussion under the theme of Connecting Smart Cities to Urbanization Challenges: Mainland China and Hong Kong. Dr. Tang outlined the application of the smart city vision to mitigate urbanization challenges in the mainland and Hong Kong.

智慧城市聯盟創辦人及榮譽會長鄧淑明博士於11月20日代表聯盟出席ASEAN Smart Cities Network and The Challenges of Urbanization 研討會。她參與了研討會的第二個討論環節，主題為「聯繫智慧城市與城市化挑戰：中國和香港」，席上她與粵港兩地專家一同探討智慧城市的概念如何解決內地和香港的城市化挑戰。

23rd Nov, 2018

RICS-SCC PropTech Conference 2018

The RICS-SCC PropTech Conference 2018 was jointly organised by RICS and SCC. The event was successfully held on 23rd November. Many local and international industry leaders joined and discussed about the way forward on property technology (PropTech). Dr. Winnie Tang, Founder and Honorary President of SCC, gave a speech titled Smart City: An Ecosystem for Tech Transformation in the opening session.

SCC members also participated in the second session of the panel discussion. Mr. Leo Chiu, Vice Chairman of Investment Committee of Global Smart City Consortium, serving as the moderator, discussed with Dr. Kenneth Tang, Founding Board Member and Chairman of the Spatial Data Infrastructure Committee of SCC and other panelists on technological reform.

In the third session, Mr. Emil Chan, Fintech Committee Chairman of SCC, was invited to be the guest speaker to share his insights on the topic of Unleashing Hong Kong's Potential by Blockchain Technology.

由智慧城市聯盟和皇家特許測量師學會合辦的RICS–SCC PropTech Conference 2018已於11月23日完滿舉行。是次研討會雲集本地及國際的行業專家，一同討論房地產科技的發展方向。聯盟創辦人及榮譽會長鄧淑明博士以「智慧城市：技術轉型生態系統」為題，在開幕式上發表演講。

此外，在研討會第二個環節，全球智慧城市聯盟顧問趙敬賢先生主持研討會，與聯盟空間數據基礎設施委員會主席鄧兆星博士，以及一眾與會者討論科技如何促進變革。

在第三個環節上，聯盟金融科技委員會主席陳家豪先生應邀以「通過區塊鏈技術釋放香港的潛力」為題，發表演講。

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Smart Vision, quarterly published by the Smart City Consortium, has been circulated to Government departments, Cyberport, Hong Kong Science and Technology Park, Tusparks, Hong Kong Productivity Council and tertiary institutions' campus since the first issue. Therefore, it has a wide audience in the IT field. If you are interested in placing advertisement in Smart Vision, please contact the Smart City Consortium Secretariat at (Tel) 3480–4230 or (E–mail) info@smartcity.org.hk.

智慧城市聯盟的《智城》每季出版一次，以IT社群為對象，派發地方包括政府相關部門、數碼港、香港科學園、啟迪科技園、生產力促進局以及各大專院校校園。查詢刊登廣告事宜，請致電3480–4230或電郵至info@smartcity.org.hk與智慧城市聯盟秘書處聯絡。

Think Global, Think Hong Kong
Cross-border Cooperation for Unimpeded Innovation
跨地域合作 創科無界限

Organized by the Hong Kong Trade Development Council, the mega promotion event "Think Global, Think Hong Kong" was successfully concluded on 1st November, 2018 in Tokyo, Japan. On behalf of Smart City Consortium (SCC), Dr. Winnie Tang, our Founder and Honorary President was invited to be the moderator of a discussion panel in the event.

"Think Global, Think Hong Kong", hosted by the Hong Kong Trade Development Council, is a large-scale event, aiming at attracting more overseas companies and institutions to use Hong Kong as an international service platform to enter the China and global market. Since its first meeting in 2011, the event has achieved overwhelming response and supports from the United States, Canada, Japan, the United Kingdom, Germany, France and Italy. This year, returning to Japan, the symposium once again gathered thousands of business representatives and renowned speakers to create a tremendous business opportunity for cross-border trade and commerce enterprises as well as local entrepreneurs.

由香港貿易發展局主辦的大型交流活動「Think Global, Think Hong Kong」，已於2018年11月1日在東京完滿舉行，智慧城市聯盟（聯盟）創辦人及榮譽會長鄧淑明博士獲邀代表聯盟出席並擔任論壇主持。

「Think Global, Think Hong Kong」是由香港貿易發展局主辦的大型推廣交流活動，旨在透過各類商業配對服務及針對不同行業的專家論壇，宣傳香港作為國際服務平台的角色，以及如何幫助不同海外公司及機構進軍中國以至國際市場。自2011年首次舉辦至今，「Think Global, Think Hong Kong」先後於美、加、日、英、德、法、意等國家舉行，今年回到日本，雲集了數千名商貿代表及知名講者，為跨境商貿合作以至本地初創發展締造商機。

Complementary superiority of Hong Kong and Japan

In the Opening Session, Chief Executive Mrs. Carrie Lam stressed that both Hong Kong and Japan were currently being challenged by the transforming landscape of global trade and economy, climate changes and ageing population. Resolving these required determination, innovation and cooperation. Yet, the deep and long-lasting partnership between Hong Kong and Japan covering numerous disciplines, such as finance, trade, tourism and professional services, provided the foundation for jointly tackling the challenges of economic and societal development ahead through amplifying their complementary superiority.

Speaking of the proven superiority of Hong Kong and its future development in innovation and technology (inno-tech), the Chief Executive highlighted our unique role under One Country, Two Systems and our globally recognized legal system, tax scheme and free business environment. Leveraging China's Belt and Road Initiatives and the Great Bay Area development plan, Hong Kong would have more chances to utilize our world class science and research resources and the first-tier tertiary education. By active participation involvement in inno-tech with our open environment as the basis, Mrs. Lam believed that we could offer a better and all-rounded platform for both our local R&D talents and overseas entrepreners.

Innovation for a Smart City

After rounds of presentation by internationally renowned speakers, "Think Global, Think Hong Kong" also organized a series of discussion panels to bring insights of the future development and challenges to the participants through the sharing of experience by various scholars and industry representatives. Together with several experts in artificial intelligence, blockchain and big data, Dr. Winnie Tang, Founder and Honorary of SCC, was invited to join a discussion panel titled "Innovation For a Smart City" as the moderator to explore how emerging technologies open a new chapter of the world.

As an international event, "Think Global, Think Hong Kong" is not just an occasion to promote Hong Kong, but also a platform for our local start-ups to reach their overseas veterans. With the Belt and Road Initiatives and Great Bay Area being realized, it is believed that a fast track will be available to the made-in-Hong-Kong entrepreneurs and professionals to present the outcomes of their efforts at the international arena.

In future, SCC will continue to join hands with different sectors to create a better environment for nurturing our young and bright start-ups in smart city development!

港日互補 發揮優勢

行政長官林鄭月娥女士於開幕致辭時，指出港、日兩地同受環球金融及貿易市場轉變、氣候危機和人口老化問題影響，如何以決心、創意及跨地合作解決難題相當關鍵。她續指港、日多年來建立了深厚的合作關係，涵蓋金融、貿易、旅遊以至專業服務，相信未來可加強互補關係，共同解決經濟及社會發展前路上的挑戰。

談及香港的既有優勢及未來創科發展，行政長官認為香港作為內地的對外門戶，擁有「一國兩制」之下的獨特優勢，以及廣受認可的法制、稅制和自由的營商環境，配合國家全力推動的一帶一路及大灣區發展規劃，令香港世界級的科研資源和一流的專上教育，大有發揮空間。她相信隨著更多鼓勵創科發展的政策措施，加上開放的商業環境，香港可為本地和海外的初創及科研人員提供更完善的發展平台。
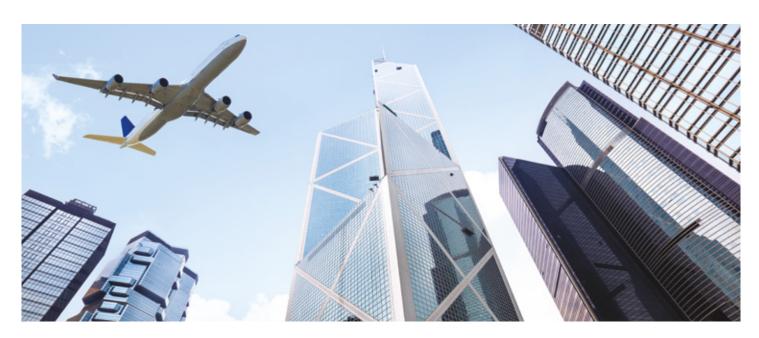
創科創新 智慧城市

除了有國際知名的嘉賓演講外，「Think Global, Think Hong Kong」亦安排了一連串專家論壇，讓與會者透過和各範疇學者及業界代表的互動，啟發思維，也讓彼此更了解行業現況，以及未來的發展與挑戰。其中聯盟創辦人及榮譽會長鄧淑明博士就以主持身份，出席以「智慧城市的創新」為題的論壇，與三位各自在人工智能、區塊鏈及大數據領域的專家，討論新興科技如何為社會帶來改變。

「Think Global, Think Hong Kong」作為一項國際交流活動，既是對外宣傳香港的平台，也讓本地初創走出香港，接觸海外同業。未來，隨着大灣區及一帶一路發展落實，相信香港的初創企業乃至專業人才會有更大發揮空間，將本地成果拓展出去。聯盟亦會繼續與各界緊密合作，為智慧城市的發展和初創的培育營造更佳的土壤！

Challenges and Opportunities of FinTech Revolutionizing Hong Kong Financial Sector
金融科技的挑戰和機遇
革新香港金融產業

Financial technology (FinTech) has been a hot topic in recent years. Blockchain, virtual currencies, mobile payment and virtual banking are presented to the public as state-of-the-arts products. In fact, FinTech is not a new concept. It is the technology that can improve efficiency of financial services. Examples are computerized banking services launched years ago. The concept has recently seen its widespread presence across industries as a result of the rapid development of smartphone, mobile network, AI and big data technologies.

FinTech commonly found in the market can be divided into two categories: technologies mainly used by financial institutions and those by IT / internet companies. The former aims to improve operation efficiency by using technological applications, such as big data analytics for credit scoring and AI applications for better investment performance. The threshold requirements to enter the financial service sector are typically high due to high capital investment and complicated financial regulations. By developing FinTech solutions, companies can skirt the financial regulations, matching the capital lender and borrower more directly, and gain a position in the financial service sector. Alibaba, which was originally an e-commerce corporate, is one of the successful stories.

金融科技在近年引起廣泛討論，由區塊鏈、虛擬貨幣、流動支付到虛擬銀行，都像新世代產品出現在社會大眾面前。廣義上，金融科技就是提升金融服務效率的科技，它並非甚麼新概念，遠至多年前銀行服務電腦化就是其中一例。這存在已久的概念，受惠於包括智能電話、流動網絡、人工智能及大數據等科技的迅速發展，近年變得普及。

常見的金融科技主要有兩種。第一種主要由金融企業主導，透過科技應用改善營運效率，例如以人工智能改善投資選項及以大數據評估客戶信貸評級；而第二種則是由科技／互聯網公司主導。傳統上，投入金融業界的門檻往往相當高，因為涉及資本相當龐大，但科技／互聯網公司透過發展金融科技，可繞過資本投入的步驟，進而成為金融業一員，本業為電子商貿的阿里巴巴就是代表之一。

Mobile Payment And Smartphone

The term "FinTech" often reminds people of Alipay, WeChat Pay, Apple Pay and Android Pay, etc. Laymen may confuse "digital payment" with "mobile payment", as these e-wallets have penetrated our everyday life.

Digital payments, by definition, refers to payments settled by digital or virtual currencies. Clients can "virtualize" the money withdrawn from their banking account and deposit them into a third-party payment platform. PayPal and Octopus card fall within this definition.

Traditional digital payment modes, including Octopus card and credit card, require payees to physically access a card reader. Businesses that have not joined the service of credit providers such as the Octopus card company and financial institution issuing the credit cards with a hefty service fee cannot receive payment via these channels. The service fee may not be a great concern for large enterprises. But for small businesses such as wet market stalls, the costs of application and transaction would eat a significant proportion of profit as their businesses have thin margin and low volume of transactions which therefore restricts the use of digital payment services.

Smartphone-based mobile payment solutions are the hope for breakthrough in payment technologies.

Mr. Emil Chan, Chairman of the FinTech Committee of Smart City Consortium, stated that the ultimate goal of mobile payment is to enable payments between payer and payee whenever and wherever they are.

"Let me cite an example of the third-party payment apps with QR code capabilities. Payment can be made in a wide range of scenarios, as long as both parties have a smartphone installed with the apps. Even hawkers can use the apps. As such, both customers and businesses can enjoy the great convenience of such payment method," explained Mr. Chan.

The Evolving Octopus Card In The New Era

Octopus card was a brand-new product on its debut in Hong Kong some twenty years ago. Since then, various types of mobile payment methods have emerged in the market. Some suggest transforming Octopus card into a mobile payment method to keep abreast with the latest trends. But there are issues in doing so. Mr. Chan summarized them into three points: usage scenario, security and extensiveness.

"The limitation of Octopus card in usage scenario is the first and biggest weakness. Octopus cards have to be swiped across compatible readers to register a payment. In other words, stores without such devices cannot use it. Secondly, unlike other registered payment options that use biometric two-factor authentication, physically in procession of the Octopus card is the only requirement to pay. Anyone can steal the card from others and use the money stored inside the card account without ID verification. Thirdly, Hong Kong is a welcoming city for tourist. We should cater for the needs of travelers from around the world. Visitors might not like to use the card as it is not handy and can only be used in Hong Kong."

流動支付與智能電話

談及金融科技，許多人第一時間想起支付寶、微信支付、Apply Pay及Android Pay等。儘管這些電子錢包與我們日常生活的關係密切，但大眾卻難免混淆「電子支付」（digital payment）及「流動支付」（mobile payment）兩個概念。

電子支付，顧名思義就是以電子、非實體貨幣形式進行支付，客戶可將金錢從銀行戶口存入第三方支付工具，並將金錢虛擬化，Paypal以及八達通都在此列。然而，傳統的電子支付技術，不論是八達通抑或信用卡，收費方都需要擁有讀卡器並支付手續費，否則無法使用。這在大型商戶的層面看似問題不大，但對小商戶如街市小販等，會因高應用門檻和手續費而卻步。電子支付的發展遇上樽頸，這情況在小額交易上尤其明顯。

而建基於智能電話的流動支付，就以突破的支付技術帶來契機。

智慧城市聯盟金融科技委員會主席陳家豪指出，流動支付最終的目標，是讓支付及收費方隨時隨地都可付款交易。

他解釋道：「以利用二維碼技術的三方支付程式為例，只要雙方都有安裝了應用程式的智能電話，支付場景就不受限制，即使小販都能夠使用，對消費者及商戶而言都極為方便。」

Mr. Chan added that these three issues had to be addressed once Octopus Hong Kong decided to pick up the pace. Octopus's partnership with Samsung to virtualize the card is the first step towards broader use of its payment service. The Octopus App for Business, launched in last March, managed to turn NFC-enabled smartphones into card reader and paved the way for a more extensive usage scenario. However, issues concerning its security and usable only locally remain to be settled.

Apps Development On The Basis Of Mobile Payments

Mobile payment solutions undoubtedly bring us a more convenient life, but payment method itself can offer far more benefits than currently experienced.

Mobile payments are very common in Mainland China nowadays. Both high value transactions and small value payments can be processed via mobile payment modes. Data generated from these transactions can truly reflect consumer habits. Through big data analysis, enterprises and companies in different fields can obtain precise insight about customers' preference and interest, etc. Impacts on different types of business models can therefore be identified.

A numbers of application development companies have developed apps by using the massive amount of data generated by these payment systems. Examples include Yu'eBao and Baihang Credit Scoring, which provides value-added features and offers nationwide credit rating services on the basis of behavioral data respectively. These FinTech apps are called disruptive technology for their ability to transform existing industries.

Baihang Credit Scoring is a good example. In the past, credit ratings relied on consumer credit data such as repayment history records and loan records. Comparing to just analyzing these partial data, Institutions in China now adopt an innovative approach. By analyzing the behavioral data of their clients, they are able to know the customers more and thus improve the accuracy of credit ratings.

八達通在時代變化下的演進

回顧香港，電子錢包八達通20多年前推出時是劃時代的產物，然而隨着不同流動支付應用程式百花齊放，有人認為八達通要跟上時代步伐，就必須革新改進為流動支付，但到底現時八達通有甚麼不足之處呢？陳家豪歸納出應用場景、安全性及通用性三點。

「第一也是最大的不足就是其應用場景的限制。使用八達通需要配合相對應的讀卡機，如果商戶未有相關配置就無法應用。其二，與其他記名的支付方式可用生物／雙重認證不同，八達通唯一的安全核證就是八達通卡本身，任何人盜去他人的八達通卡，在毋須安全認證下都能使用儲存在內的金錢。再者，香港作為旅遊城市，需要照顧來自世界各地的遊客需要，八達通的使用範圍僅限於香港，對來港的人說不上方便。」

他續指，八達通想要跟上步伐，就要從以上三方面入手。其與Samsung合作將八達通虛擬化，為八達通拓闊應用踏出第一步。而今年三月推出的商用版八達通App，亦開放了以具近場通訊功能的智能電話作為讀卡器，為擴大其應用場景做好準備。然而，安全性及通用性問題仍有待解決。

站在流動支付的肩膀開發應用

流動支付為生活帶來的便利不言而喻，但其貢獻遠不止於此。現時流動支付在內地非常普及，由上萬的金額以至日常小額消費都以流動支付進行，用戶於流動支付的交易數據，幾乎如實地反映其日常生活消費模式，只要再配合大數據分析，不同機構及商戶便可更準確地掌握客戶習慣、興趣等資料，對各種商業模式都大有裨益。

不少應用程式開發公司就利用流動支付系統以及其產生的大量行為數據，開發其他應用程式，具投資功能的餘額寶和以行為數據進行全國統一信貸評級的百行徵信便是一例，這些金融科技應用程式更巔覆了現有產業，被廣稱為破壞性創新（disruptive technology）。

以百行徵信為例，以往信貸評級普遍會參考客戶的還款及欠債紀錄等信貸資料，但相比起分析這些不盡全面的資料，內地機構現在會採用創新的方法，透過分析客戶的行為數據以掌握其消費習慣的全貌，大大提高了信貸評級的準確性。

"A new consumption habit can be identified when this (credit rating) model becomes more and more sophisticated. In future, consumers can even redeem their credit scores in terms of cash when paying, similar to the current credit card reward programs. Also, this model can be further applied across different industries," envisaged Mr. Chan.

These apps, a side product of mobile payments, are developed on the basis of the data generated by the widespread mobile payment solutions. Their relationship reflects the way how mobile payments drives the growth in the whole I&T ecosystem. In the *Smart City Blueprint for Hong Kong*, mobile payment is subsumed into the Smart Living initiative. However, Mr. Chan pointed out that mobile payment technologies are not only delivering us a seamless experience, they can also spur innovation by providing massive amount of behavioral data. Hence, mobile payments should be placed within the Smart Economy framework and be recognized as another crucial infrastructure.

Moreover, the widespread use of mobile payments is undoubtedly the first step to boost the apps development. In supporting this, authorities should take a more liberal approach towards data security and data use instead of merely imposing restrictions.

"Throwing the baby out with the bathwater is never the best solution for better data security. To secure the behavioral data collected from the public and develop big-data-based apps, the government should set up regulatory frameworks, impose stricter safety standards on data storage and application companies, and establish an extensive mobile payment infrastructure," advocated Mr. Chan.

Create An Ecosystem For Mobile Payment Development

To provide an ecosystem favorable to mobile payment development, regulators play an essential role in establishing new policies to enable lowering the transaction costs of banking and third-party payment businesses. The government expected to achieve this goal by launching the Faster Payment System (FPS) last September.

Conventional ways of interbank funds transfer would take more than 24 hours. A transfer of fund initiated on Friday would not be cleared until the following Monday. Transaction fees will be imposed on using instantaneous large-value transfer systems. Small and medium enterprises (SMEs) would shrink back from these payment methods because of their limited cash flow, high volume of small-value transactions and thin profit margin. Meanwhile, FPS provides a near-instant clearing platform for small-value funds transfers to streamline cash flow and to process funds transfer from bank account to third-party payment platform. In other words, the FPS can offer an expedient mobile payment channel while increasing the operation efficiency and reducing transaction costs simultaneously.

In fact, Singapore has already launched the Fast And Secure Transfer (FAST) service since 2014 to allow customers to settle interbank transfers instantly via electronic means. Almost the same time, similar programs were also introduced in the United Kingdom to solve delays in funds transfers. Mr. Chan stated that it was never too late to catch up, since the Hong Kong government will roll out dedicated policies and initiate virtual banking within a year. He believed we could make up for the lost time.

陳家豪指出：「當這個模式發展成熟，將來在內地更可用信貸評分取替正式金錢，人們以其評分購物，創造新一代的消費模式。這情況就好像我們用信用卡積分換取服務等，但這個應用將更廣泛通用於各行各業。」

這些應用與流動支付無關，卻建基於因流動支付普及化而產生的數據，正正體現了流動支付如何帶動整個科技創新的生態。政府於《香港智慧城市藍圖》中提出將流動支付歸於「智慧生活」之下，然而陳家豪認為流動支付並非單純為社會帶來方便，更是大量行為數據的源頭，政府應將其置於「智慧經濟」之下，視之為另一個重要的基礎設施。

他又指出，要促進這些應用發展，廣泛採用流動支付固然是第一步。相關部門亦要對數據安全及應用持更開放的態度，而非單純遏止數據使用。「因噎廢食並非令數據安全發展的良方，政府反之應訂立相關法規，對數據保存及應用機構施加更嚴格的安全標準，並落實整個流動支付的基建，這才能一方面確保市民的行為數據安全，同時發展以大數據為基礎的應用。」

創造發展流動支付的生態系統

一個有利流動支付發展的生態系統，需要作為監管機構的政府提出新政策，以降低銀行及第三方支付工具的資金往來的成本，這就是政府在今年九月推出的快速支付系統「轉數快」（Faster Payment System，FPS）期望解決的問題。

過往，要將資金由一間銀行轉至第二間，所需時間可能超過一日，如果於週五轉帳，更有機會到下週一才完成交易；如果採用大額的清算機制，又會收取額外手續費。這對處理大量小額交易、流動資金有限、利潤微薄的中小企造成不便及隱憂。而FPS則能提供一個近乎即時的小額結算機制，加快資金往來以及由銀行戶口轉帳至第三方支付工具的過程，提升效率的同時亦減低交易成本，對流動支付甚有幫助。

縱觀香港的競爭對手，新加坡早於2014年推出名為Fast And Secure Transfers（FAST）的系統，以電子方式讓客戶於短時間內將資金由一銀行轉至另一間，英國亦於差不多同一時間推出類似政策，以解決資金往來的延滯問題。陳家豪指出，值得安慰的是香港政府將於一年內陸續推出相關政策以及開放虛擬銀行，雖然比競爭對手遲，但相信有足夠能力追上步伐。

Connectivity among third-party payment platforms are equally important. Currently, the various e-payment methods used in Hong Kong have been developed separately. Absence of a standard regulatory framework becomes a barrier to data sharing among different platforms, similar to the situation where several banks are permitted to issue their own banknotes which are not interchangeable.

As such, Mr. Chan suggested adopting the open application programming interface (API) framework for the banking sector to facilitate interconnection among different payment solutions.

Virtual Banking Is Irreversible

The banking sector also plays a significant role in boosting smart economy.

Last September, the Hong Kong Monetary Authority (HKMA) proposed seven initiatives to facilitate Smart Economy development. One of them dealt with the application requirements for virtual bank license.

What value can virtual banking bring to the Smart Economy strategy? Greater understanding on the role of virtual banks would help to answer this question.

Virtual banking is often confused with e-banking. They are fundamentally different from each other despite having similar names. "E-banking is just a means for customer interface, whereas virtual banking is a business model in banking that purely operates in the internet without physical branches," pointed out Mr. Chan.

He added that virtual banking, like retail banking, mainly targets SMEs and individuals, among whom the transaction dollar value was relatively low. Furthermore, virtual banks tend to handle more transaction between accounts, in contrast to those traditional banks that offer lending and finance services.

除FPS外，第三方支付工具間的共通性亦同樣重要。現存香港各類的第三方支付工具各自發展，卻沒有統一標準規管，阻礙了各工具間的數據交換，情況就好像政府容許多間銀行各自發鈔，但各種鈔票卻不能互通共用。

陳家豪指出可參考政府早前對銀行業提出的開放應用編程介面（Open API），並將其引伸至第三方支付工具，從而讓各支付工具能互聯互通。

虛擬銀行為大勢所趨

除流動支付外，銀行業對推動智慧經濟亦同樣重要。去年九月，香港金融管理局就提出七招促進智慧經濟發展，其中一項就與虛擬銀行（virtual banking）牌照門檻有關，但究竟虛擬銀行於智慧經濟的意義何在？要探討這個問題，我們先要理解虛擬銀行的角色。

許多人都將「虛擬銀行」與「網上銀行」（e-banking）混為一談，陳家豪笑言兩者的名稱雖看似類同，但本質上卻是風馬牛不相及。「網上銀行不過是一間銀行接觸客戶的方法之一，而虛擬銀行是一個機構的營運模式，特色就是不採用傳統的分行，而全以互聯網模式經營。」陳家豪續指，虛擬銀行會比較近似零售銀行，對象多為中小企及市民，當中牽涉的資本較少，較多處理客戶間資金往來，與經營融資借貸的傳統銀行有明顯分別。

The law stipulates that applicants for virtual bank license must be a financial institution and be subject to strict capital requirements. The clause that excludes non-financial institutions from applying the license was removed in the recent amendment. Still, Mr. Chan thought more work needed to be done.

"Virtual banks in China, for example, are dominant by lowly capitalized companies, because they mainly do fund transfer businesses and are less involved in lending services. If the Hong Kong government insists on the sky-high capital requirement, existing financial institutions will still be the only major players in virtual banking in the near future. That won't reap the great benefit of FinTech innovations," stressed Mr. Chan.

Having said that, he was delighted to see the proposed amendments. In the meantime, he expected the government to meet the demands from both the market and innovation industries by conducting continued amendment to the legislation after the enactment of the policies.

Fine-tune Regulatory Frameworks To Spur Innovation

Regulators should keep pace with the numerous FinTech innovations. Apparently, Mr. Chan is not happy with the existing regulatory approach which focuses at micro level and is too conservative. He suggested a macro-level regulation rehaul to specify what can be done and what not. By providing a clear framework for financial and IT industries, we can stimulate innovations, and catch up with other countries.

What's more, in face of new business models, the FinTech Supervisory Sandbox program should also be extended to non-banking sector, so that IT companies can have a safe and regulated testing environment for innovative solutions. In addition, regulatory reforms and introduction of low-cost and highly efficient regulatory technologies (RegTechs) are crucial to build a nurturing environment for FinTech development.

The government also recognizes how FinTech infrastructures play pivotal roles in spurring economic growth and enhancing our competitiveness. In addition to the FPS launched last September, the government has also lowered the requirements for obtaining a license in virtual banking and introduced series of FinTech infrastructures for progressive implementation of other Smart Banking measures. We hope that the government can step up measures as suggested above in order to reinforce Hong Kong's status as an international financial centre and innovation hub.

根據法律，申領虛擬銀行牌照必須為金融機構，亦對機構的資本有嚴格要求。早前政府就發牌條件的修訂，移除了必須為金融機構的規定，但陳家豪認為仍有不足。「以內地的虛擬銀行為例，由於它們業務以轉帳為主，較少做借貸，因此大多都是輕資產的機構。假若香港政府維持令人卻步的高資本要求，可以預見，未來的虛擬銀行都會以金融機構為主，對金融科技創新幫助不大。」

陳家豪補充指他當然樂見政府修訂發牌條件，但相當期望政府在政策落地後持續修訂法例，以貼近市場及創新需要。

改善監管 鼓勵創新

面對眾多創新的金融科技，政府在監管方面亦要與時並進。陳家豪指政府過去從微觀層面監管各種金融科技，做法相對保守，他認為應轉為以宏觀角度監管，提出一個清晰的框架，讓金融及科技界了解可做與不可做的界線，這樣才能鼓勵創新。

與此同時，針對新興商業模式，政府亦應將金融科技規管沙盒拓展至非銀行界，讓科技公司在安全合規的情況下測試創新金融科技；同時將規管手法革新，並引入能減省成本、提高效率的監管科技（RegTech），這樣才能創造有利金融科技發展的生態環境。

其實，香港政府亦已察覺到金融科技可以促進經濟和提升競爭力，因此繼推出「轉數快」外，政府又調整虛擬銀行發牌政策及引入一系列金融科技建設，以逐步推動其他舉措落地，帶領香港邁向智慧銀行新紀元。我們希望政府能夠繼續努力不懈，並對上述的建議多加考慮，以鞏固香港作為國際金融中心和創新中心的地位。

Start-ups Work Together to Promote InnoTech and Facilitate Hong Kong's Smart City Development

初創攜手推動創科　助香港發展智慧城市

Hong Kong's smart city development is in full swing. The popularity of internet services and smartphones has greatly reduced the threshold for establishing enterprises, boosted the recent development of start-ups, and brought opportunities to many creative, innovative and imaginative enterprises. In the development of innovation and technology (innotech), Hong Kong has a solid technological foundation and scientific research capability, and also has one of the world's top five fastest-growing start-up ecosystems. The government is well committed to promoting the development of local start-ups and supporting entrepreneurs and start-ups through various measures.

From 2014 to 2017, the number of local start-ups doubled to 2,200, 2018 also recorded 18% increase of start-ups operating in major co-work spaces and incubators, according to the latest InvestHK survey. At the same time, venture capital has surged significantly from US$80 million in 2012 to about US$1.1 billion in 2017. Whub, Hong Kong's startup community, estimated that at least USD1.9 billion has been raised in the first eight months of this year. All these show an increasing number of Hong Kong start-ups gaining international recognition.

Smart Vision has invited two start-ups, namely Elevant-Garde (EVG) and Chun Shing, to an interview to share their views on smart cities, the scope for innovation and technology in Hong Kong's smart city development, as well as their expectations of the government's smart city promotion and assistance on start-ups.

香港智慧城市發展如火如荼，互聯網服務及智能手機的普及，大大降低開設企業的門檻，推動了近年初創公司的發展，為不少有創意、敢於創新和富想像力的企業帶來機遇。在發展創新及科技方面，香港擁有穩固的科技基礎以及雄厚的科研實力，亦是全球五大增長最快的初創企業生態系統之一。特區政府亦致力推動本地初創企業發展，透過各項措施支援創業家與初創企業。

2014至2017年間，本地初創企業數目增長一倍至2,200間，而單在2018年，投資推廣署的統計也顯示，在主要的共享空間及孵化器營運的初創已較2017年上升18％。同時，創業投資亦由2012年的8,000萬美元大幅上升至2017年的大約11億美元，根據本地初創研究機構Whub的調查發現，2018年首八個月已錄得19億美元的創業投資。這一切都可見越來越多香港初創企業獲得國際認可。

《智城》今期邀請到Elevant-Garde（EVG）和「環保進城一雋成發展有限公司」兩間初創企業接受訪問，分享他們對智慧城市、創新科技與香港智慧城市發展如何配合的看法，以及對政府推動智慧城市及協助初創企業的冀望。

About Chun Shing

Chun Shing Development (Hong Kong) Limited was established in January 2013, and has expanded the business from solely paper waste recycling to major waste recycling to the landfills which includes waste plastics and plastic bottles since 2015. Chun Shing Development is now starting the food waste recycling business as well. Meanwhile, the company is committed to developing Hong Kong' circular economy by providing waste paper recycling service, scrap metal and commodity destruction and disposal services.

To encourage public participation in recycling, a recycling and collection fleet was established by Chun Shing Development in 2017. The fleet includes 5.5 tons goods vehicles, 9 tons goods vehicles, compression vehicles and container trailers. In September 2018, Chun Shing Development has also entered the first stage of "For a Better Future" by developing a Recycle App for Recycling Community Used Mobiles which provides the public with recycling service information and hopefully this could become a new eco-friendly way to recycle.

About Elevant-Garde

Elevant-Garde was created in 2017 as a joint venture partnership between Mr. German Cheung, founder of VanguardCube Limited and Elephant Holdings Limited, both of which represent the very best of the engineering field and the multimedia system design - Elephant has more than 70 years in configuration, engineering and quality optimization of audio visual system while VanguardCube has more than seven years experience in interior design, automation and control, system integration and project management.

Their joint experience allows them to provide customers with comprehensive and fully-integrated services. Their combined expertise in both software programming and hardware configuration also enables them to devise tailor-made solutions for our clients and to address technical challenges in a holistic manner.

Application of Technological Expertise in Environmental Protection Industry Enhances Industry Value

"I hope that in Hong Kong there will be no more recyclable and usable materials arbitrarily disposed at landfills as well as less waste and disposal at landfills! The problem of landfills in Hong Kong is becoming increasingly acute. We, Chun Shing, wish to optimize the use of materials by recycling waste before disposal," said Mr. Allan Wong, founder of Chun Shing.

Graduating from Computer Engineering of the University of Hong Kong, Allan began his environmental protection career in Guangzhou in 2005 and later founded Chun Shing in 2013, hoping to use his expertise in environmental protection to promote waste recycling and waste management in Hong Kong.

After engaging in the traditional recycling industry, Allan found that neither recyclers nor the general public had been able to effectively get hold of recycling information, so he hopes to use his expertise to contribute to the development of the recycling industry. Thus, he decided to write an application that is free for the public to download, and includes features of recycling pick-up point information, booking of recycling services and a free recycling platform. In addition, the application also has GPS positioning function to enable users to get the arrival time of the recyclers' collection vehicles at estates. This helps increase the degree of public participation in recycling.

關於雋成

雋成發展有限公司在2013年1月創辦，自2015年起，由集中廢紙回收，雋成擴闊回收版圖到主力回收堆填區的主要物料：廢塑，膠樽回收；現階段雋成正開始廚餘回收業務。同時，亦提供回收廢紙、廢五金和商品銷毀處理的服務，致力打造香港的循環經濟。

為增加回收的主動性，2017年雋成成立了回收及物流車隊：購置5.5噸、9噸貨車、壓縮車及貨櫃拖頭貨車。2018年9月雋成更開始研發「環保進城」的第一階段——「社區回收手機回收程式」，提供回收資訊，藉此也建立一個「新環保」的回收渠道。

關於Elevant-Garde

Elevant-Garde於2017年成立，由大象行有限公司和VanguardCube Limited的創辦人張文聰先生共同創建。

結合大象行在影音工程設計70多年的經驗和行內的領導地位，以及VanguardCube在室內設計、自動化、系統整合和項目管理等的專業知識和九年經驗，新公司在多媒體設計和工程項目方面，更能為客戶提供首屈一指的服務，尤其在軟件編程及硬件配置上結合專才，為客戶提供定制的技術方案，解決客戶的技術挑戰。

環保結合科技 提升業界價值

「希望香港不會再有可循環再造的有用物資任意棄置於堆填區，減少廢物，減少堆填！香港的堆填問題日益嚴重，我們雋成希望達到在處置廢物之前，盡量物盡其用，把廢物循環再造。」雋成的創辦人黃穎灝先生（Allan）說。

本身從事傳統回收行業的Allan，畢業於港大計算機工程學。早於2005年，他已在廣州從事環保行業，定期與內地廢紙廠有貿易交易，因此公司在2013年成立初期，主要在香港回收廢紙供給內地紙廠。

投入回收行業後，他深刻體會到香港的堆填問題日漸嚴峻，問題之一是無論回收商或市民大眾均未能有效掌握回收資訊，所以他希望運用自己的專業知識，推動回收行業的發展，於是他編寫應用程式（app），免費讓市民下載，當中提供回收點資訊、預約回收服務和免費回收平台等功能。另外，程式還設有GPS定位功能，用家能準確得知回收車到屋苑或屋邨的時間，從而增加市民參與回收的程度。

Allan認為環保回收不應局限於硬件，軟件上的配合和分析同樣重要。他研發的雲端廢物管理系統結合大數據、雲端伺服器和物聯網（IoT）等科技元素，配合智能回收桶和垃圾

According to Allan, recycling is no longer limited to the advance of hardware, and software collaboration and analysis are equally important. He developed a cloud-based waste management system that combines innovative technologies, such as big data, cloud servers, and the internet of things (IoT), with the use of smart recycling bins and rubbish bins. Each bin has a label of Radio Frequency IDentification (RFID) and an electronic balance for reading RFID to lock the location of the bins, measure the weight of waste and provide time of waste collection.

When the smart rubbish bin is almost full, the system will send a message to remind waste collection, in order to reduce the time and resources required on cleaning staff in contrast to regular collection, and enable accurately monitoring the process and progress of the frontline. This will not only make it easier to monitor waste and recovery figures and to conduct statistical analysis of waste sources, but also help managers or users to master waste management data to decide on how to proceed with waste reduction. At the same time, by constantly measuring the situation in the bins, the data will be automatically uploaded to the cloud server in real-time, so that the collected data can be further analyzed to achieve real online-and-offline coordination.

Implementation of Environmental Policies Matters

Regarding the development prospects of Hong Kong's smart environmental protection industry, Allan stressed the need for implementing relevant environmental policies, such as the Municipal Solid Waste Charging Scheme on which consultation has been conducted for years, in order to build up, step by step, the different types of smart environmental protection business. The waste charging scheme is expected to be implemented by the end of 2019. He pointed out that it will take time for the public to accept the necessity of paying for waste disposal, but in fact, they should eventually understand and take responsibility for the waste they produce and dispose, so as to improve the living environment and make Hong Kong move towards sustainable development.

"Policies and education should be carried out as a two-pronged approach for waste reduction, so that the community has a common concern for the environment and understands that public resource include not only land, water and money, etc. but also environmental resources which are also equally important," he said.

On smart environmental policies, Hong Kong can refer to the examples and experience of Taipei and South Korea where advanced technologies are used. South Korea, for example, introduced a pilot food waste levy scheme with variable rates in 2010, and set up food waste collection bins with card induction areas in various regions. The fill-level sensor of the rubbish bins can calculate the weight of waste, and then send the data to the government department to count the amount of waste per household each month.

The *Hong Kong Smart City Blueprint* has made recommendations in one of the major areas, namely Smart Environment, which aims to make the lives of people "happier, healthier, smarter and more prosperous". We hope that with the implementation of various environmental protection policies and the collaboration of private enterprises and citizens, together, we can make Hong Kong a "greener, cleaner, more livable and sustainable" smart city in the near future.

桶使用——每個垃圾桶均有射頻識別技術（RFID）的標籤和讀取RFID的電子磅，用作鎖定垃圾桶的擺放位置和量度廢物重量，同時也提供棄置廢物時間。

當智能垃圾桶中的垃圾將滿時，系統會發送信息提醒收集垃圾，以減省清潔人員需要定時定候收集垃圾的時間及資源，準確地監察到前綫工作的流程和進度。這操作不單能輕鬆管理廢物、回收數字和統計分析廢物來源，亦能幫助管理者或用家掌握廢物管理的數據，從而得知如何著手減廢。而且垃圾桶的數據會即時自動上載雲端伺服器，方便分析，實現線上線下的配合。

落實環保政策 助發展智慧環保事業 締造綠色香港

談及香港智慧環保行業的發展前景，Allan強調需要的是真正落實相關政策，例如諮詢多年的《都市固體廢物收費》計劃，才能逐漸建立不同類型的智慧環保事業。廢物收費計劃預計最快2019年底實施，他指出市民未必「一時三刻」能接受需要為棄置垃圾付費，但其實大家都要明白並為自己製造及棄置的垃圾負上責任，為環境出一分力，更可讓香港邁向可持續發展。

他說：「減廢需要政策及教育雙管齊下，讓社會培育關注環保的氛圍，明白公共資源不是只看利益和金錢，環境資源同樣重要。」

其實在智慧環保政策方面，香港可參考台北和韓國的實例及成效。例如韓國早於2010年開始引入先導性的廚餘按量徵費制度，在各地區設置附有電腦感應的刷卡式廚餘收集桶。垃圾桶的重量感應能計算當中的重量，再把數據送至政府部門，統計每個家庭每月的垃圾量。

《香港智慧城市藍圖》其中一個主要範疇——「智慧環境」，正是希望「讓市民的生活更愉快、健康、聰明及富庶」，希望隨著各項環保政策的實施，加上有心的私營企業和市民的努力，共同將香港變成「更綠色、清潔、宜居及具可持續性」的智慧城市。

Customized Cloud System for Smart Property Management Ecology

EVG is run by Mr. CY Wong and Mr. German Cheung. CY, General Manager of Pokfulam Development Company Limited, has a background in urban planning and was originally engaged in traditional property trading while German has been conducting researches in the industry of smart homes for years. By chance, the two people found that they both share the aspiration of developing smart properties, hence setting up EVG.

The company has expanded rapidly since then, having more opportunities of reaching out to different property companies. By serving a wide range of customer segments, the company began to collect a lot of data and gained in-depth understanding of customers' needs, which helped the company to lay a foundation for developing different IoT solutions. CY said with relief, "The rise of the digital era proves that our concept of setting up the company is correct. From the development of smart homes and smart properties, to the development of the entire smart city, we hope to be able to participate in them and develop our career!"

Seeing a wide variety of smart furniture hardware but a lack of a monitoring system that can coordinate different brands and types of household appliances on the market, the co-founders designed a cloud control system which is equivalent to a central platform, using IoT technology for connecting to various household appliance systems such as audio, air conditioning, lighting and so on. The user only needs to install a cloud control system, which is as small as a set-top box, at home and install smart sensors on every appliance for ease of control.

Regarding the application, the user can customize several functions according to their needs and personal preferences. For example, when the user arrives home and opens the door, the system will detect his arrival and automatically start a series of chain action, such as to turn on the lights, switch on the audio or TV, and draw the curtains and so on. At the same time, the system can also support basic IoT settings, such as to boil water accordingly. In order to make in-home living more convenient and comfortable, the system is also equipped with indoor humidity regulation, household appliance voice switch and anti-theft monitoring system, as well as advocating home greening, real-time tracking and reminding the user on electricity consumption of various household appliances.

Customized designs have greatly improved the flexibility of control, meeting customers' needs. "We hope to use the IoT solutions to facilitate the smart property ecology, enhance the effectiveness of property management and improve the living quality of people," CY said.

客製化雲端控制系統　發展智慧物管生態

EVG由黃千宜先生（CY）及張文聰先生（German）聯手經營。城市規劃出身的CY原本從事傳統物業買賣，也是博富臨置業有限公司的總經理，German則從事智慧家居行業多年，二人機緣巧合下，發現彼此對發展智慧物業的理念不謀而合，EVG因而成立。

後來公司迅速擴展，帶來更多機會接觸不同物業公司，藉服務多方面的客戶群開始收集到不少數據並深入了解客戶所需，為他們研發不同的物聯網方案打好根基。CY欣慰地說：「數碼化時代的興起，更證明我們成立公司的理念是正確的。不論是智能家居、智慧物業，以至整個智慧城市的發展，我們都希望能夠參與其中，發展我們的專業！」

眼見市場上智能家具硬件種類繁多，卻缺少一個能對接不同牌子種類家電的監控系統，二人於是設計出一個等同中央平台的雲端控制系統，利用物聯網技術連接全屋家電系統如音響、冷氣、照明等等，用家只要在家中安裝有如機頂盒大小的雲端控制系統，並於每件家電上安裝智能感應器，便可輕鬆調控全屋家電。

在應用程式上，用家可以根據實際需要和個人喜好自訂功能，例如回家開門時，系統感應到動作後會自動開燈、打開音響和電視，並關閉窗簾等一系列的連鎖反應，系統亦能同步支援基本物聯網設定如自動煲水等。為了讓家居生活更便利舒適，系統內更設有室內濕度調節、家電聲控開關和防盜監察系統，同時提倡綠化家居，實時追踪並提醒用戶用電量。

度身訂造的設計，大大提高使用時的靈活性，照顧客戶所需。「我們希望運用物聯網方案，促進智慧物業生態，提升物業管理的成效，改善市民的生活質素。」CY說。

Data Sharing Helps Construct a Comprehensive Smart City

When it comes to Hong Kong's smart city development, both CY and German agreed that the acceptance by the public plays an indispensable role.

Smart cities are people-oriented and should be constructed to meet the needs of the general public. However, the current lack of understanding on the need for the local smart city development, how to participate in it and how to benefit from it are the main obstacles to the smart city development. In this regard, it is important for the Hong Kong government to take a leading role. The government should set up a clearer direction to lead private enterprises and the general public, so as to promote the idea of smart cities. In addition to strengthening education, more easy-to-use applications and technologies can also be developed to encourage the public to experience the convenience brought by the technology.

Moreover, since the market has not yet recognized smart homes and smart buildings, CY said that if there is a clear indicator of enterprises' references, it will, as he believed, encourage more enterprises to develop smart buildings, leading to smart property management. He added that smart buildings and greening are inextricably linked, and the two should collaborate to facilitate the sustainable development of buildings. EVG is now working with the Hong Kong Green Building Council to discuss how to promote smart greening buildings through IoT technology, such as development of household energy saving system and production of environmentally friendly bamboo floor.

Smart cities are made up of different elements, while smart homes and smart buildings are one of the components. The successful applications from infrastructure, transportation, medical care and to other aspects can embody the interactive and comprehensive nature of smart cities.

"As a part of the smart city, we don't mind disclosing the data collected. If a highly transparent data integration and sharing platform can be set up to access other applications and increase the data interaction on the program, it will surely make the Hong Kong smart city go even further!" German said.

Besides, innotech, and talents and experts are indispensable factors of building Hong Kong into a world-class smart city. As a saying goes, a journey of a thousand miles begins with a single step. CY and German encouraged start-ups to take the first step and try boldly. They also suggested the government to shorten the time for start-ups to apply for funding and reduce the application threshold. As such, we can help young entrepreneurs to develop and promote the Hong Kong's development of innotech and smart city together.

數據共享 齊建全方位智慧城市

談及香港的智慧城市發展，CY和German均認為市民如何把智慧方案應用在生活上是不可缺少的一環。

智慧城市以人為本，應依據市民大眾的需要來建構，但現時公眾未了解到香港發展智慧城市的必要性、如何參與其中以及如何從中受惠，成為智慧城市發展的主要障礙，這反映香港政府作為領頭角色的重要性。政府應設立更明確的方向，引導私營企業以至市民大眾，化智慧城市概念為現實。除了加強教育，還可發展較容易使用的應用程式和科技等，讓市民實際感受科技帶來的便利。

另外，由於市場對智能家居及智慧建築尚未有共識，CY表示若有明確的指引讓企業參考，相信能推動智慧建築和智慧物業管理的發展。他又補充，智慧建築和環保綠化密不可分，兩者應相輔相承，促進樓宇的可持續發展。EVG現正跟香港綠色建築議會合作，一同商討如何透過物聯網技術，推進智慧綠化建築，例如研發家居節能系統、製作環保竹地板等。

智慧城市是由不同元素組成，而智能家居及智慧建築是其中之一。唯有從基礎建設、交通、醫療等多方面着手，我們才能體現智慧城市的互動性及全面性。

German指出：「身為智慧城市的一部分，我們不介意開放所收集的數據。若能設立透明度高的數據共融共享平台，對接其他應用，增加程式上的數據互動，定必令到香港智慧城市走得更前！」

此外，創科和人才是建構一個世界級的智慧城市不可或缺的元素。所謂千里之行，始於足下，CY和German鼓勵初創要踏出第一步，放膽嘗試。另一方面，他們又建議政府可縮短初創企業申請資助的時間並降低申請門檻，以協助它們成長，共同推動香港的創科和智慧城市的發展。

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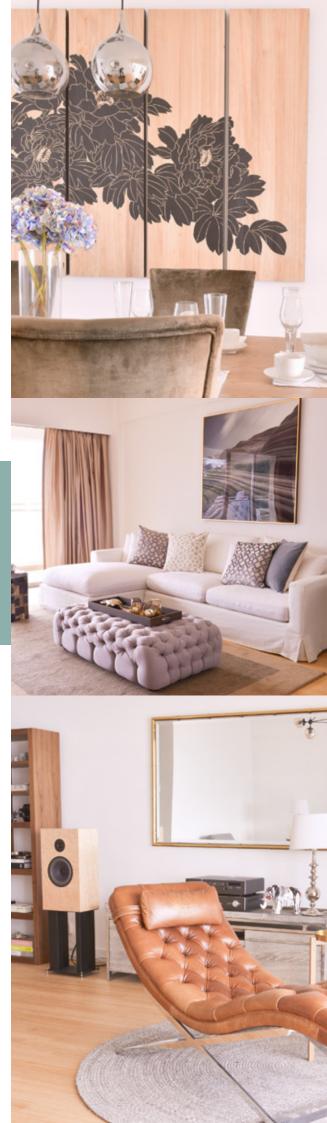
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5G should be Hong Kong's Priority in Smart-City Development

Originally posted on China Daily on 27th Sep, 2018

港抓5G機遇 須緩解兩個「當務之急」

原刊於2018年10月10日《香港經濟日報》評論版

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We are moving closer to the era of the fifth generation of mobile service (5G), with great momentum across the globe.

In the past, mobile phones (2G) were mainly for interpersonal communication, while 3G took off with the introduction of internet-communications-enabled smartphones 10 years ago.

As for 5G, it is a totally different story. It is about communication for people to people, people to machines (or things), things to things (i.e., internet of things or IoT). The goals of the 5G network are to ensure latencies of only one millisecond, a data transfer rate of up to 10 gigabits per second, extremely high network reliability (nearly 99.999 percent), and to enable the use of devices in high-speed motion (500 kilometers per hour).

It can combine big data and artificial intelligence to create interconnection among all things. The applications could be unlimited, from smart-home security, remote patient monitoring, precision agriculture, autonomous vehicles to immersive entertainment of virtual reality and augmented reality. All the internet-connected devices will be able to talk to each other at lightning speeds with reduced latency.

5G在全球已醞釀得如火如荼,例如南韓首爾政府已計劃在2019年頭,在市內測試以5G為基礎的無人駕駛;特首林鄭月娥又可會促使香港追上全球的創新潮流?

過去,手機(2G)主要用於人際交流,而10年前開始,以手機上網、社交網絡流行配合智能手機,令3G起飛。

至於5G,則是人與人、人與機器(或物件)、事物之間(即物聯網)的溝通。

5G網絡講求數據傳送的快捷可靠,它的目標是信息延誤只有千分之一秒(毫秒)、每秒傳輸數據高達10GB、非常可靠的網絡(接近99.999%)、高速移動(支持時速500公里)等。

經濟效益百萬億 創2200萬職位

它的應用潛能無限,把所有物件以互聯網連繫互通後,結合大數據和人工智能,可以提供從智能家居保安、遠程病人監

Research company IHS Markit estimated that the global economic benefits created by 5G would be as much as $12.3 trillion by 2035, more than the combined consumer spending of China, Japan, Germany, the United Kingdom and France in 2016. It would also create employment opportunities estimated as high as 22 millions. At the same time, GSMA, an industry group, forecast total mobile contribution to Asia's GDP would rise to $1.8 trillion in five years. As such, many countries are keen to adopt 5G.

A South Korean automobile manufacturer showcased the technology with a successful test run of its autonomous vehicles from Seoul to Pyeongchang, using 5G technology during the Winter Olympic Games early this year. Russia, the host country of the FIFA World Cup 2018, installed 5G mobile phone coverage in seven of the 11 tournament cities during the mega football event in June, making Moscow the first European city to lead in 5G adoption. China is going to have a trial launch by the end of this year, getting ready for the official rollout in 2020 while a dozen cities in the United States are expected to introduce this advanced technology by the end of this year.

Although huge investments have been made, the benefits of 5G brought to consumers will not be realized in the near future.

GSMA asked senior management of 750 telecom companies "about the most salient impediment to delivering 5G". More than half cited the lack of a clear business case, as reported by The Economist. The industry group expected that 62 percent of Asia's mobile connections will still be running on 4G networks and only 14 percent on 5G by 2025.

This is because the most rewarding applications of 5G in the early days would be video streaming (to download a 3-D movie in only 30 seconds while 4G requires six minutes) and virtual reality/augmented reality. As the application using 5G is new, its service fee is expected to be relatively high. Its popularity cannot be compared with 4G in the initial stage.

察、無人駕駛以至虛擬實境（virtual reality，簡稱VR）和擴增實境（augmented reality，簡稱AR）娛樂等服務。

研究機構IHS Markit估計，到2035年，5G創造的全球經濟效益將高達12.3萬億美元（約96.6萬億港元），超過2016年中國、日本、德國、英國和法國的消費總和，並會創造高達2,200萬個職位。因此，許多國家都在加快鑽研5G技術。

南韓一家汽車廠在今年初的冬季奧運期間，成功以5G試驗了從首爾到平昌190公里的無人駕駛；今年FIFA世界盃東道主俄羅斯則於球賽期間，在其中七個競賽城市安裝了5G發射站，使莫斯科成為歐洲首個推出5G的城市，把希望爭勝的倫敦比下去。

在今年年底前，中國和美國十幾個城市，包括德州的達拉斯和韋科，以及喬治亞州的亞特蘭大也即將試行5G，為2020年正式推出作好準備。

全球競賽 5G應用仍有待開發

5G投資龐大，營運商需要將現有的發射站數量激增近10倍，才可構建高速和覆蓋良好的網絡。這些額外的基建大多以小型發射站安裝在燈柱、公用電話亭等設施。

據報中國正以極速增建發射站，顧問公司德勤近日發布的研究指出，以每一萬人的發射站數量比較，各國差異非常明顯，日本排名最高，為17.4；中國以14.1排第二；德國8.7佔第三名，而美國僅為4.7。

5G投資浩大，不過，短期內卻難以令消費者受惠。內地專家、中國信息通信研究院副院長王志勤認為，我們只會「逐漸邁向5G時代」。然而，要5G像3G和4G一樣受歡迎，王志勤也不肯定需時多久。

同時，根據《經濟學人》報道，電訊行業組織GSMA曾就「提供5G的最大障礙」，訪問了750家電訊公司的高層，超過一半受訪者都表示，5G缺乏明確的盈利模式。該組織因此預計，到2025年亞洲62%的流動通訊仍然是4G，運用5G的僅14%。

這是由於5G的應用仍有待開發，早期最受歡迎的大抵只是視頻串流（僅需30秒即可下載一齣3D電影，而4G則需6分鐘），以及VR和AR。新應用有限的同時，預計初期服務費會較高，令它一時難以普及。

Having said that, 5G is undoubtedly the future for the next 10 to 20 years. As a consumer market, Hong Kong is very small and of little significance. But as a testing ground for new services, our scale and agility may become our advantage. Therefore, we should gear up to grasp this business opportunity.

Apparently, the Hong Kong government is also aware of the global trend. In late July, the Communications Authority announced that 4500 MHz of new spectrum in multiple frequency bands will be made available for the provision of 5G services, part of which will be offered for free to help drive down the cost and the accompanying service fee to end users.

In addition, the government will also install 5G infrastructure for trial on 400 smart lampposts in four urban areas. This is great news. As 5G needs many more transmission sites than 4G, the government's advance planning would facilitate a timely 5G rollout. This will equip us to capture new market opportunities and to facilitate the introduction of more applications of smart city and IoT powered by 5G services, and to give operators a competitive advantage in the global race to 5G adoption.

As the government is putting emphasis on two smart-city elements, namely artificial intelligence and healthcare technologies, 5G service is essential for the successful implementation of those technologies. Therefore, I urge the government to rank 5G installation among the highest priorities of our city development.

In connection, one of the urgent tasks is to resolve the dispute between mobile operators and satellite companies on the right to use a crucial part of the wireless broadband spectrum.

Equally important is opening the aggregated data of mobile service collected by operators. Currently, this treasure trove is restricted to the operators for their provision of the services. Mobile data, seen as "new petroleum", can be a critical part of the ecosystem of our future economy. Singapore, Japan and the US have all allowed the use of aggregated mobile data be available to the public. We should not fall behind in this aspect.

The public and private sectors should work together to develop Hong Kong into a smart city, and at the same time help transform the city into an inno-tech hub.

港作試驗場 規模小靈活是優勢

話雖如此，5G無疑是未來10至20年的大趨勢。香港作為消費市場確實微不足道，但作為新服務的試驗場，我們的小規模和靈活性卻是優勢。因此，香港應該作好準備把握商機。

其實，政府也意識到這個全球趨勢。七月下旬，通訊事務管理局宣布將為5G服務提供4,500 MHz新頻譜，部分頻譜更可免費提供，以助營運商降低成本和用戶服務費。

此外，政府還會在四個區份的400枝智能燈柱上，安裝5G設施。政府能預早規劃，有助本地及早推出5G服務，這也有利更多以5G推動的智慧城市和物聯網應用的試驗。

調解寬頻爭議 開放電訊數據

當務之急有二，其一是解決電訊商和衛星公司之間使用無綫寬帶頻譜關鍵部分的權利爭議，政府應盡早介入調解。

其二是全速開放電訊服務的數據。數據被視為「新石油」，是發展新經濟的原料，但目前電訊商牌照依然沿用不准把客戶資料作電訊以外用途的規定，即使是匿名的或已整合的數據。新加坡、日本、美國早已為這些規條鬆綁，我們也應該盡早檢討。

此外，目前政府着墨人工智能和醫療科技這兩個智慧城市範疇，要成功實踐，5G至為重要。因此，我希望政府將5G的推出列為城市發展的最優先項目。

要把握5G機遇，需要突破舊有框架，這樣香港才有望發展成為智慧城市之餘，同時轉化為一個國際創科中心。

Hong Kong's People Generate Large Amount of Smart Information: Let's Make Use of It

Originally posted on South China Morning Post on 8th Dec, 2018

港人善於智能通訊 可用作數據共享

原刊於2018年12月8日《南華早報》

Mr. Daniel CHUN
秦仲宇先生
Chairman, Research & Blueprint Committee
研究及藍圖委員會主席

In this modern connected world, where we often hear the need for Hong Kong to stay competitive and build a more resilient and harmonious society, our city managers should consider how to harness the resource afforded by our citizens' willingness to share.

By that, I mean the sharing of information, for example the traffic condition; the occurrence of fires and flash floods and anything useful for people looking for smarter mobility, smarter living or just simply wanting to find a smarter way to get home or to work.

The amount of pictures and videos taken from social media and reused by mainstream media during the recent Typhoon Mangkhut is a living evidence that such shared data is timely, accurate and could be life-saving.

在這個現代化的互聯世界，我們經常聽到香港需要保持競爭力，建立一個更具彈性和諧的社會，要做到這樣，政府應考慮如何善用市民的群體力量。

在這裡，我指的是共享資訊，例如交通狀況、火災和洪水暴發等重要資訊、可以豐富「智慧出行」及「智慧生活」的資料，甚或協助市民計劃更佳上班或回家路線的資訊。

在超強颱風山竹肆虐期間，社交媒體上有為數不少的圖片和影片，其後更被主流媒體重用，活生生地證明了這些共享資訊不單快而準，還能協助拯救生命和維護公眾安全。

在災難等重大事件發生時，社交媒體通常是傳播信息的主要渠道，而且效率奇高。與此同時，共享經濟的目標之一是為那些資源較少的人提供資源，尤其在資源緊絀時，有效的信息傳播，能令原本資訊貧乏的一群人也得享豐富的信息。

目前香港政府轄下的創新及科技局的「效率促進辦公室」一直提供類似服務，名為1823。該服務收集市民提供的資料，1823網站更允許上載影片；此外，運輸署新推出的「香港出行易」及「交通快訊」應用程式亦為共享交通信息邁出一大步。

從公共服務的角度來看，興建那條連接兩個城市、延綿數十公里的大橋，跟投放資源開發應用程式、建設ICT基建和改善管治模式同等重要，對此我相信沒有人會有異議。

不過，我想強調的是，政府能否再進一步檢討和籌劃如何善用由市民提供的數據，擴大其他從閉路電視、網絡感應

Social media has proved to be a main way of disseminating information in times of critical events such as disasters, and is very efficient. At the same time one of the objectives of the sharing economy is to bring things to those with less access to resources. Sharing from the haves to the have-nots is therefore instrumental in increasing efficiency when the city's resources are limited.

The government's Efficiency Office has been operating a service called 1823 which takes input from ordinary people on just about anything. The 1823 website also allows uploading of videos. Now the new HKeMobility and eTrafficNews apps from the Transport Department are also a big step forward in sharing traffic information.

From a public service standpoint, no one will dispute that investment in developing apps, building information technology infrastructure and having the right governance model are as important as building a miles-long bridge from one city to another.

But one issue I would like to highlight is whether our city managers should start thinking about ways to use data supplied by ordinary people to augment other information collected from CCTV, networked sensors and even smart lamp posts to build a truly open data strategy.

The current data.gov.hk website is an open portal of data from bureaus and departments but does not include the information contributed by ordinary people through 1823 or social media.

The building of bridges to extend a road network leads to new possibilities, new values and new rewards. One person alerting others about an incident through social media and instant messaging leads to many possible solutions. Similarly, if ordinary people's eyes and ears could be incorporated into the sensory network of the city, it would eliminate the need for a lot of investment in infrastructure – which in itself costs a lot for city managers to provide.

The accuracy and usefulness of such information could easily be validated and enhanced by designing machine learning algorithms and by big data analytics.

Indonesia offers examples of how such a system incorporating data from the public could work. Twitter has been used in the capital Jakarta for reporting flash floods, while through the country's intelligent platform Qlue, local authorities have been able to engage with business enterprises, entrepreneurs and application developers to come up with useful ideas and solutions to address urban issues ranging from bin collection to reporting the location of potholes.

With the modernization of Hong Kong's mobile network and the promise of new 5G networks, coupled with advances in smartphone technology such as geolocation and video capture capabilities, as well as the new electronic identification scheme recently proposed by the government, it would be prudent to take this opportunity to build a holistic open data governance framework that values the sharing economy and reuses data from the public to achieve smart city objectives.

器和智慧燈柱收集的數據，以協助推行一個真正的開放數據策略呢？

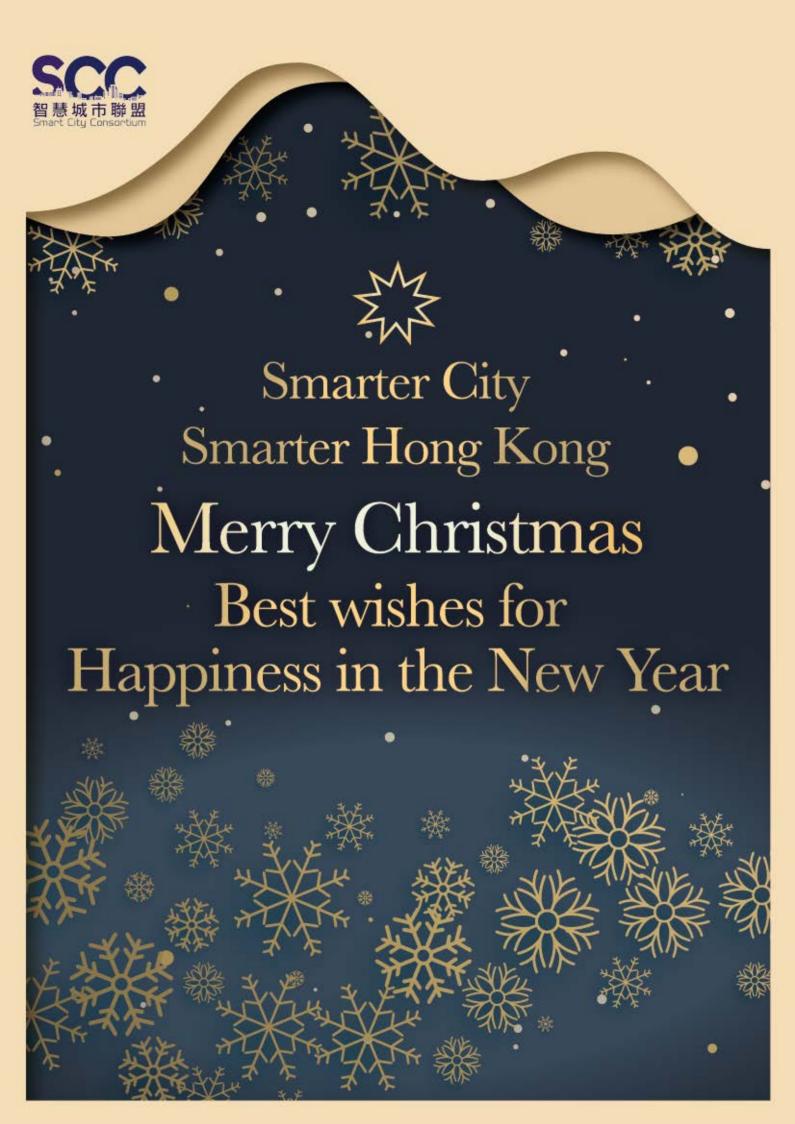現時，「資料一線通」data.gov.hk開放數據平台載有政府決策局及部門的數據，但卻欠缺那些由市民提供、透過1823或其他社交網絡收集的眾包數據。

興建訊息網絡將會帶來更多新機會、新價值和新效益。如果有人透過社交網絡和即時通訊系統，提醒其他人發生了某件事，由此可引發大家想到許多不同的解決方案。假如市民的耳目也被當作城市感測網絡的一部分，我們不單可以省下一大筆用作興建基建設施的費用，還可間接減省政府的行政開支。

同時，透過設計機器學習演算法和大數據分析，便能輕易驗證及增強此類信息的準確性和實用性。

印尼便是一個成功的例子。首都雅加達利用了Twitter和「Qlue」智能資訊平台報導洪水暴發的情況。再者，地方市政府能夠與工商企業、企業家和程式開發員一起商討，提出有效對策和解決方案應對垃圾收集、路面坑洞報告等城市問題。

隨着香港流動網絡現代化、即將推出的5G網絡、乃至智能手機的進步如地理位置定位及影片採集功能、以及香港政府最近提出的電子身份證計劃，我們應該審慎地把握建設一個重視共享經濟的機會，重用大眾數據，完善開放數據管治架構，以實現智慧城市發展的目標。

SCC

智慧城市聯盟
Smart City Consortium

Smarter City
Smarter Hong Kong
Merry Christmas
Best wishes for
Happiness in the New Year