SMART VISION 智城

ISSUE. 09
JUN—2019
HKD$65
ISSN 2523-0735

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JUN / 2019

Editor-in-Chief 總編輯

Ir. Dr. K F TSANG
曾劍鋒博士工程師

Production 製作

Techture Limited
科暐有限公司

Acknowledgement 鳴謝

*(Alphabetize by Last Name)
按姓氏字母順序排列

Ir. Dr. K F TSANG
曾劍鋒博士工程師

Mr. Alan WAN
溫偉麟先生

Ms. Rosana WONG
黃慧敏女士

Mr. Vandia YANG
楊智添先生

Mr. Gary YEUNG, MH
楊文銳先生，榮譽勳章

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鄧淑明博士，太平紳士

Messages to Public
給公眾的話

在「創業難，守業也不容易」的年代，營運一個組織絕不是易事。因此我非常感激三位榮譽會長過去的努力，為智慧城市聯盟（「聯盟」）打好根基，令香港「智慧城市」走得更前！我亦很感激各位理事與會員的支持，今年5月推選我為新一任會長，讓我有機會帶領聯盟，作出更多貢獻。

為智慧城市出謀獻策

過去，聯盟已在政策層面提供多項專業意見，當中包括向政府遞交就智慧城市發展的建議，並定期與不同政府部門會面，商討最新的進展。智慧城市的概念在香港由以往鮮為人知，發展至今無人不知，聯盟的工作實已卓有成效。現在，智慧城市已由概念進展到實行的階段，相信不久將來，香港將有一番新景象。

全民參與推動智慧城市3.0

同時，聯盟一直與多個學界、商界、行業專家，以及不同非牟利團體和組織積極溝通和合作。例如在學術方面，我們建立了「智慧城市學院」，並與大學合作舉辦以科技為題的課程，為培訓人才而努力。聯盟也不忘把智慧城市向普羅大眾推廣，我們正策劃的首屆「智慧城市遊樂園@中環夏誌」，就是透過公眾體驗和多元化的數碼展示區，讓市民親身感受更愉快、更健康、更聰明的智慧生活模式。這些活動有助促進社會各界攜手建設和創造我們的未來，而市民、私人機構、學界和政府協力合作，正是促成「智慧城市3.0」的要素。

Running an organization is not easy especially when it is hard to start a business and maintain it. Therefore, I would like to express my gratitude for the contribution made by the three Honorary Presidents who have laid a solid foundation for Smart City Consortium (SCC) and have nurtured Hong Kong as a smart city. I am also grateful for all the support from the council members and members who elected me as the new President in May so that I can have the chance to lead and contribute to SCC.

Putting Forward Suggestions for Smart City

SCC has provided multiple professional advice to policy formulation, which includes submitting a proposal for the development of smart city to the Government and holding meetings with different Government departments regularly to discuss the latest progress of the development. The concept of smart city that few people in Hong Kong were aware in the past has grown into a hot topic that everyone is talking about. This is the achievement of SCC. Now, smart city has finally come to the implementation stage, I am really excited about a new face of Hong Kong in the near future.

Encouraging Citizens to Join and Promote Smart City 3.0

In the last few years, SCC has been actively building an effective communication network with the academic and business sector, industry specialists, non-profit groups and organizations. On the academic front, we have built the Smart City Academy in collaboration with local universities to develop courses on technology related topics, to help train more talent.

In addition, SCC strives to increase public awareness of smart city. We are going to hold the first ever Smartizen Park @ SummerFest 2019, a community activity which showcases a happier, healthier and smarter lifestyle through a host of interesting and interactive activities. As such, citizens can have a first-hand experience of what benefits a smart city would bring. This helps to encourage all people in the society to work together and jointly create the future. Collaboration among people, private sector, academia and government is indeed the essence of Smart City 3.0.

Mr. Gary Yeung, MH
楊文銳先生，榮譽勳章

President
會長

智慧城市便民為重

智慧城市重新演繹所有生活或工作的流程，例如停車場自動繳費、餐廳遙距取籌、手機下單、手機付款等等。而推動創科發展自過去的科技主導，發展至今天的政府主導，以科技應用便利市民的生活。正如支付寶、微信支付等大陸的行動支付，已經改變了全民生活模式，令大眾從中受益，而行動支付之所以能迅速發展，政府實是功不可沒。

電子身份是智慧城市的基石

除了嶄新的支付系統，聯盟致力推行的數碼個人身份（eID）是智慧城市發展的另一基礎。在新一代互聯網下，eID讓網絡身份與現實生活接軌，得到網上身份認證。香港政府將於2020年為香港市民提供eID服務，日後市民可於各政府機構進行網上或手機流動程式交易，如申請公屋、換領駕駛執照及繳交稅項等，同時亦可應用於不同的金融科技商業平台。eID將來更有望跨越邊界，適用於其他國家和地區。事實上，不少歐洲國家已開始思考如何跨國應用各自的eID，進一步擴大此一科技應用。

城市急速進步，總有一天需面對天然資源耗盡的問題。在發展智慧城市時，我們應以發展環保及新能源為前提，加強環境可持續發展，優化市民的生活質素之餘，亦讓地球朝向既安全又宜居的方向發展。

往後，我將秉承三位榮譽會長的精神，與大家攜手推動香港全面實行智慧城市，繼續邁向「Smarter City, Smarter Hong Kong」！

Smart City Development Improves the Quality of Life

Auto-toll for car parks, remote tablebooking chit from restaurants, mobile ordering and mobile payment, etc., smart city has smartened up many aspects of daily lives and activities. Promoting the development of innovation and technology was initially led by the technology sector, now it is mainly led by the government to enhance the quality of life. Mobile payment in mainland China such as Alipay and WeChat Pay has been changing people's lifestyle and the public has definitely benefited from it. The rapid growth of mobile payment there is exactly a good example in which the government has played a crucial role in facilitating the development.

Electronic Identity is Foundation for Smart City

In addition to the innovative payment system, SCC has been striving to implement electronic identity (eID), which is one of the foundations in developing smart city. Through the internet, eID confirms identity of a person by checking against data stored in the physical world for online identity verifications. The Hong Kong Government will provide eID service to the public in 2020. Citizens can conduct transactions at Government organizations through online or mobile applications. This includes applying for subsidized public rental housing, renewing driving license, paying tax, etc. It can also be used on different financial technology platforms. In future, it is expected that eID will cross the border and will be applicable to other countries and regions. In fact, many European countries have already started to examine how to apply their own eID beyond their sovereignty, making wider use of this application.

While cities are progressing rapidly, one day we will experience resource exhaustion. When developing smart city, we should also conserve and preserve the environment and at the same time exploring new energy sources, in order to sustain a safe and livable planet.

From now on, I will continue on the path laid by our three Honorary Presidents, to promote a comprehensive implementation of smart city in Hong Kong together and keep marching towards "Smarter City, Smarter Hong Kong"!

Huawei Banned by Google
華為遭Google封殺

近年來中美貿易戰不斷升溫，早前美國政府將華為列入黑名單，禁止美國公司與華為合作，「華為禁令」在科技界激起了巨浪。根據《路透社》於5月19日的獨家報導，谷歌（Google）已全面取消與華為的軟硬件專利轉移與授權合作。及後，美國商務部發出臨時許可證，有限度豁免美國企業向華為出售產品及供應軟件90天，讓各方在過渡期內完成相關系統更新。

是次封殺比外國媒體形容如發射核彈的攻擊，為華為帶來巨大的衝擊。華為會一夕間失去國際市場嗎？華為手機又有何出路？

In the recent escalating US-China trade war, US businesses were barred from trading with Huawei, due to the blacklisting and trade ban imposed by the US government that generated significant ripple effects throughout the IT industry. According to an exclusive report released by Reuters on 19 May, Google had completely cut off its partnership with Huawei in the transfer and licensing of hardware and software patents. Later, the US Commerce Department granted US enterprises a 90-day extension on selling or transferring technologies to the Chinese telecom conglomerate, buying time for both sides to finish their system updates.

The crackdown, depicted by foreign media as "nuclear option" of the US, posed devastating threats to the Chinese telecom enterprise. Will Huawei lose its stronghold in the global smartphone market overnight? Will there be other ways out?

Huawei may face difficulties in opening up the overseas market in the near future, but its mainland market was technically immune from the trade ban. Google decided to quit the Chinese market, as the Chinese authorities had taken a firm stand on the IT laws which the multinational company must follow. Today, we preserve independence of the internet ecosystem in China. Google could exert no leverage on Huawei's mobile devices and smartphone users in China even by terminating its services. Generally speaking, the sales volume of Huawei's mobile devices in mainland China, which occupies 60% of its total sales volume, reinforces its stronghold in the telecom industry.

短期對華為開拓海外市場有一定影響，然而對於華為的國內市場，影響微乎其微。正因當年中國堅守原則，要求Google遵守中國法律，結果Google選擇退出中國，今天中國國內互聯網的基本生態才得以保存。就算如今Google停止提供服務，對華為及國內手機用戶也沒有太大影響。綜合來看，由於華為手機的銷量有六成來自國內，所以華為的生存不是問題。

Hon. Elizabeth Quat, BBS, JP, Founder & Honorary President, SCC
聯盟創辦人及榮譽會長葛珮帆議員

Truly, gaining an upper hand over Samsung in the smartphone market this year is almost impossible. Huawei is also at risk of ceding its second position to Apple. Nevertheless, the mainland market provides the tech giant with a firm base to hold the 4th position in the global smartphone sales volume.

In the meantime, Huawei already mastered Android's core development features, while its self-developed operating system is compatible with Android's ecosystem. Since Google Play service is not available in mainland China, the mobile app ecosystem will likely remain dominant at upper application layer. However, the huge buying power in mainland China, together with Russia and other markets, can create favorable conditions to develop an alternative mobile operating system. Huawei has already weaned its IT business (e.g. data storage and low-end ARM server) off its reliance on US component suppliers, except for the Intel servers. Other commercial technologies such as wireless and optical communications are basically self-developed. Hence, the US sanction would pose little threat to Huawei's survival.

對！不過，今年華為在手機市場佔有率上超過三星已是不可能，還會把第二位置還給蘋果，但基本光靠內地市場，還是有機會維持在全球第四的手機出貨量。

同時，華為已具有安卓（Android）底層深度開發能力，自行研發的作業系統會兼容Android生態，由於中國內地並無 Google Play 服務，上層應用生態應無影響。考慮內地有上億台採購量支撐，加上俄羅斯等市場，或會另外培養出第二個主流Android系統。華為IT業務除了Intel伺服器之外，存儲、低端ARM伺服器已去除美國零件供應。其他最賺錢的無線、光通訊，基本是自行研發的。相信美國制裁不影響華為公司生存。

Mr. Vandia Yang, Chairmen of SDN & Cloud SIG of SCC
聯盟軟體定義網絡及雲端工作小組主席楊智添先生

Ir. Dr. KF Tsang, Vice President of SCC
聯盟副會長曾劍鋒博士工程師

Huawei has achieved positive outcomes in other retail markets, such as India, Europe and Africa. Despite the intensive blockade in the Indian market, the robust profit growth in Africa could offset the loss. Given the ongoing in-house trial of its own OS system (purportedly "Hongmeng OS") and other backup features mentioned by Vandia, Huawei's mobile devices cannot be easily squeezed out of the market.

華為之前在印度、其他國家尤其非洲與歐洲的銷售非常不錯。現在印度遭打壓，但非洲仍然強勁。華為手機的作業系統（據報名稱為「鴻蒙」）已在華為內部試驗，加上其他Vandia提到的備用，所以仍可生存。

In spite of the constraints that curtail its retail business or technological development in the developed countries, Huawei and other Chinese smartphone manufacturers hold significant market share in Southeast Asia and the developing countries. It may take lots of time to expand their business in the developing countries and build a brand-new commercial ecosystem. Huawei would probably produce low-cost, low-end cellphones to open up the lower-tier markets as its second lifeline.

雖然華為在已發展國家的銷售或發展會受到一定程度的掣肘，但華為跟其他中國手機製造商本來在東南亞和發展中國家就有不錯的市場佔有率，反而需要用長時間到發展中國家拓展新的市場，尋找新商機並重新建立一套商業生態系統。所以，相信華為有機會為了生存而開始發展低階手機市場，製造以硬件及規格成本較低的手機，刺激銷情。

Mr. Ronald Pong, Chairman of IT Governance Committee of SCC
聯盟資訊科技管理委員會主席
龐博文先生

Hon. Elizabeth Quat, BBS, JP, Founder & Honorary President, SCC
聯盟創辦人及榮譽會長葛珮帆議員

US sanction on Huawei is a double-edge sword that could wreak havoc on US enterprises having ties with the Chinese tech company as well as global 5G deployment. Short-term impacts are inevitable, but Huawei will be able to bounce back with its advanced R&D capabilities. US chip suppliers would eventually risk a huge cost from losing a major client.

美國封殺華為之舉是損人害己的七傷拳，與華為有合作的美國企業以至全球5G發展，都深受打擊。華為短期內難免會經歷陣痛，但華為的研發力量在全球首屈一指，相信能夠克服難關，而美國晶片商則永遠失去大客戶，實屬不智。

智慧城市聯盟
Smart City Consortium

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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。

Smartizen Park@SummerFest:
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智慧城市遊樂園@中環夏誌
真實體驗智能生活

智慧城市建設的真正意義在於服務市民，讓大家使用智慧服務，享受智慧生活，成為「智慧市民」。現今，智慧城市不再是紙上談兵，而是能讓市民親身體驗。適逢智慧城市聯盟（聯盟）成立三週年，聯盟很高興與Central Venue Management（CVM）合辦首屆「智慧城市遊樂園@中環夏誌」（「遊樂園」），於今年夏季在中環海濱活動空間正式展開大型體驗活動。

「遊樂園」主要分為三大活動園區，包括「體驗區」、「玩樂區」及「學習區」，讓公眾領略智能科技所能帶來的更愉快、更健康、更聰明的生活模式。當中最大型的「體驗區」獲不少公司及組織積極支持，包括香港信息安全學院、深圳大漠大智控技術有限公司、TOZ及西門子有限公司等等，為公眾帶來最新的智能展示和親子STEM工作坊。

The true significance of developing smart city lies in serving the public and allowing them to use smart services, enjoy smart living and become "smart people". Now, smart city is no longer empty talk, but can be experienced by the public. On its third anniversary, Smart City Consortium (SCC) is proud to co-organize with Central Venue Management (CVM) for the first ever Smartizen Park@SummerFest 2019 ("The Smartizen Park"), a large experience event which kicked off in this summer at the Central Harbourfront Event Space.

The Smartizen Park is divided into three major zones, namely the EXPERIENCE zone, PLAY zone and LEARN zone, giving the public a taste of happier, healthier and smarter lifestyles that smart technology would bring. The EXPERIENCE zone, the largest one of the zones, is actively supported by several companies and organizations, including Hong Kong Information Security Academy, Shenzhen Damoda Intelligent Control Technology Co., Ltd., TOZ, and Siemens Ltd., bringing the latest intelligent displays and parent-child STEM workshops to the public.

香港信息安全學院　盼培育多方面安全專家

談及香港智慧城市的發展優勢，聯盟資訊科技管理委員會主席兼香港信息安全學院院長龐博文先生表示，香港擁有優良網絡覆蓋率，甚高的科技滲透率以及人均擁有手機比例等，是我們發展智慧生活的優勢。但只有科技優勢不足以推動全城響應智慧城市，市民活用科技才是重中之重。他又指，不少市民害怕踏出第一步接觸新科技的原因，大多是擔心網絡安全問題，如近年推出的流動支付系統一旦出現事故，市民便會紛紛放棄使用該應用程式。

因此，市民的安全意識教育成為現今發展智慧城市的重要議題，而香港信息安全學院成立的目的正是為了教育香港市民如何安全放心地使用網絡，提高網絡危機意識，以及重點培訓信息安全專家，阻截黑客攻擊。

在培訓信息安全專家方面，龐博文指出學院正與各大專院校合作，推出信息安全的實際應用課程，加入本地化元素，教授如何配合香港的法例與法規進行信息安全防護。學院更為教授和學生免費提供電子靶場（cyber range）作訓練之用，模擬整個智慧城市信息的攻防演練，並能夠同時容納多達3,000人在系統中操作。

龐博文說：「學院不是牟利機構，成立的目的是希望提高香港整體的信息安全水平，盡企業社會責任，回饋社會。」

而且，不同行業如銀行、鐵路、醫院等受特定法律條例約束，面對的安全風險亦各有不同，幾乎沒有一個安全專家能完全掌握及運用信息安全技術於所有行業，加上香港普遍缺乏專門針對特定行業的信息安全專家，所以他更加希望培訓更多人才。

Hong Kong Information Security Academy Hopes to Nurture Multi-faceted Security Experts

Speaking on the advantages of Hong Kong in smart city development, Mr. Ronald Pong, Chairman of SCC IT Governance Committee and Dean of Hong Kong Information Security Academy, said that Hong Kong has excellent network coverage, high technology penetration rate and high proportion of mobile phones per capita all of which pave the way to develop smart living. But purely technological advantages are not enough to encourage people to support the smart city development. The acceptance of technology by the people is the most important. He also pointed out that most of the reasons why many people are reluctant to take the first step to access to new technologies are their concern for the cyber security. For example, when there was an incident related to a recently introduced mobile payment service, the public chose to shy away from the application.

Therefore, the education of the public on security awareness has become an important issue in the recent smart city development, and the purpose of establishing the Hong Kong Information Security Academy is to educate local people on how to use the internet safely and securely, to raise awareness of network crisis, and to focus on training information security experts to stop hacking.

Regarding the training of information security experts, Ronald pointed out that the Academy is working with the tertiary institutions to offer courses on application of information security, incorporate local elements and teach how to comply with Hong Kong laws and regulations in information security protection. The Academy also provides professors and students with a range of free training on cybersecurity, which simulates attack and defense drills for the entire smart city operation, and is able to accommodate up to 3,000 people in the system for operation at the same time.

"The Academy is not a profit-making organization, but rather an organization that hopes to raise the city's overall knowledge of information security, to fulfil corporate social responsibility and to give back to society," Ronald said.

Moreover, as each industry, such as banks, railways and hospitals, is subject to its specific laws and regulations and faces the relevant security risks, there is almost no one single security expert who can fully master and meet security technology requirements to all industries. General speaking, Hong Kong faces a shortage of information security experts specifically designed for specific industries. Thus, Ronald is eager to train more talents.

龐博文說：「很慶幸今年能在遊樂園中作出展示，讓市民能夠親身應用嶄新科技，亦令智慧城市的概念跟實際生活拉上關係。」除此之外，學院計劃在遊樂園舉辦多場工作坊，讓市民學習手機資訊防護及管理、Wifi安全等等，還有全港性信息安全攻防戰比賽，邀請大專生及中學生參與一連串刺激比拼，贏取豐富的獎金獎品。

未來，學院將透過定期舉辦工作坊和比賽，積極培訓人才，更期望有機會參與全球最大型「黑客大會」DEF CON、台灣「駭客年會」HITCON等，讓香港的信息安全專家在世界各地的擂台上與全球好手切磋，提升質素。

大漠大呈現精彩無人機編隊表演

無人機可塑性高，不再只局限於航拍及作娛樂玩具，還發展出無人機編隊表演！結合人工智能和大數據在無人機編程系統上的實際應用，改變了傳統行業發展。因為無人機表演比煙花表演成本更低、更省時、更環保，故此近年成為了另類營銷方式。

大漠大數碼藝術總監李曉婷小姐說：「社會上對無人機表演的需求越來越大，我們已在珠海長隆海洋王國進行為期一年的駐場表演，甚至遠至海外，在印度盛大的大壺節上，舉行該國首次集體無人機表演。」

安全與精準是成功的無人機表演的首要因素。大漠大在業內率先推出和實踐《無人機編隊安全飛行規範》，大大增加對無人機表演的信心。另外，藝術設計也是成功的重要指標，大漠大曾為無人機改造成孔明燈、燈籠等造型，配合不同視覺效果例如3D立體圖案、火花等，令觀眾嘆為觀止。

要數李曉婷最深刻的無人機表演，不得不提在2019 中央電視台「春節聯歡晚會」（央視春晚）的演出，大漠大是央視當晚唯一指定合作夥伴，千架無人機為慶典帶來璀璨的燈光匯演、撒花、舞台球型等編隊，場面震撼。

「未來，我們將致力發展無人機編程教育工作，發掘更多無人機的應用場景，例如物流送貨和農業科技等方面，期待無人機能展示出不同面貌及發展潛力，進一步改變行業發展。」她說。

He said, "I am very pleased to be able to present displays in the Smartizen Park this year, which helps the public to apply new technologies and connect the smart city concept to real life." In addition, the Academy also plans to hold several workshops to enable the public to learn more on mobile phone information protection and management, Wifi security and so on, as well as arrange territory-wide information security attack-defense competitions to invite college and secondary school students to participate in a series of exciting competitions with prizes.

The Academy will regularly hold workshops and competitions, actively train talents, and look forward to the opportunity to participate in the world's largest hacking conference DEF CON and Taiwan's annual hacking conference HITCON, etc., so that Hong Kong's information security experts can attain world class standard.

Damoda Presents Wonderful Drone Formation Shows

The possibilities of drones are wide that drones are no longer limited to aerial photography and entertainment, but can also be designed to perform drone formation shows! Artificial intelligence and big data are applied practically in the drone formation system, transforming the development of traditional show industries as drone shows are cheaper, more time-saving and more environmentally friendly than firework displays. As a result, drone shows have become a new marketing method.

"There is a growing demand for drone shows in the community. We have been doing a year round performance in the Chimelong Ocean Kingdom in Zhuhai, and overseas, such as India's Kumbh Mela at which we held the country's first collective drone show," said Ms. Jenny Li, Digital Art CEO of Damoda.

Safety and precision are the primary factors of success in a drone show. Damoda is the first to introduce and practise the Codes of Flight Safety of Drone Formation in the industry, which greatly increased the confidence on drone shows safety. In addition, art design is another key factor of success. Damoda had presented drone formation in patterns of sky lanterns, lanterns and other shapes, with different visual effects such as 3D stereo patterns and sparks, which amazed the audience.

而在今次的遊樂園中，大漠大期待為香港帶來首次800架無人機一同表演的創舉，在星光閃耀下，拼湊出不同文字，製造科幻的視覺效果。無人機操作工作坊亦為遊樂園焦點之一，家長與小朋友可齊齊試玩，體驗無人機飛行的樂趣。

TOZ信息安全風險評估及保險「一條龍」服務

根據2018年微軟的調查報告，香港企業因網絡安全威脅的潛在經濟損失，估計可達2,500億港元。事實上，近年網絡攻擊越趨頻繁，不少企業受到黑客攻擊，導致經濟損失及客戶個人資料外泄。於今年4月初剛成立的TOZ看準時機，把危機轉化為契機，創立全港首間一站式信息安全事故風險評估及保險公司，為香港企業提供垂直式的投保服務。

TOZ聯合創辦人温偉麟先生強調，在信息流量高的社會下，客戶資料如身份證號碼和銀行帳戶號碼特別容易外泄，有價值的商業機構資料更易成為目標。然而，市面上的信息安全服務與保險產品一般是分開的，絕

To name one drone show that impressed Jenny the most, the performance of 2019 CCTV's Spring Festival Gala (aka Chunwan) must be the one. Damoda is the sole designated partner of CCTV that evening. For the event, thousands of drones brought formation of bright light shows, flower scattering and stage balls with stunning effects.

"In future, we will strive to develop training on drone formation technique and explore more drone applications, such as in logistics and delivery, and agricultural technology. We look forward to the showcase of different features and development potential of drones, hence further transforming the development of the industry," she said.

In the Smartizen Park , Damoda looks forward to bringing Hong Kong's first show with 800 drones performing together in which the drones will piece different words in the starlight, creating sci-fi visual effects. The drone operation workshop is also one of the Smartizen Park's highlights, in which parents and children can try, experience and enjoy drone flight.

TOZ's "One-stop" Service of Information Security Risk Assessment and Insurance

According to a 2018 Microsoft survey report, the potential economic losses of Hong Kong enterprises caused by cybersecurity threats could worth up to HK$250 billion. In recent years, cybercrimes have become more frequent, many enterprises have been hacked, resulting in economic loss and leakage of customers' personal data. TOZ, which was established in April this year, turned the crisis into an opportunity to create Hong Kong's first one-stop information security incident risk assessment and insurance company to provide vertical insurance services to local enterprises.

Mr. Alan Wan, co-founder of TOZ, stressed that in a community with high information flow, customer data such as identity card numbers and bank account numbers are particularly vulnerable to leakage, not to mention valuable business organization data. However, the information security services and the insurance services on the market are generally separate products, and the majority of insurance institutions in Hong Kong has failed to tailor appropriate information security insurance schemes to enterprises, resulting in inadequate coverage. Alan said that he hopes to give consumers a long-term guarantee of confidence and protect them from information security incidents through detailed assessment, emergency services and routine inspection services by TOZ's team of information security experts.

大部分的香港保險機構都未能為企業就信息安全來度身訂造合適的保險計劃，導致出現承保範圍不足的情況。温偉麟表示，透過TOZ信息安全專家團隊的詳細評估、事故應急服務、例行檢查服務等，長遠希望保障消費者，免受信息安全事故的困擾，令大家重拾對企業的信心。

在智慧城市中，信息安全專家扮演守護者的角色，確保網絡及資訊得以安全流通。TOZ此新型商業模式配合智慧城市發展，防範於未然，為未來城市的網絡安全鋪路。TOZ在今次的遊樂園中不會有任何實體展示，而是在幕後支援園內所有網絡系統，尤其確保無人機的信息安全，保護飛行表演過程免受黑客攻擊。

温偉麟說：「智慧城市有趣的地方是能夠展示當中聯動的細節，每種科技都互相影響，不同技術都互相配合。」

西門子創新解決方案　支持香港基建32年

自1987年起，西門子一直是可靠的技術合作夥伴，專注於發展電子化、自動化及數碼化領域，並為香港基建提供創新解決方案。在不少大型基建均可見西門子的科技，例如香港國際貨櫃碼頭現代化和自動化的起重機、龍鼓灘發電廠的H級燃氣渦輪發動機，以及沙中線的信號控制系統等等。

西門子香港及澳門行政總裁鍾漢明先生指出，要充分發展智慧城市，一個長遠而可持續的規劃至為重要。香港政府提出的《智慧城市發展藍圖》已為各方規劃明確方向，各

In the smart city, information security experts act as guardians to ensure the safe operation of networks and flow of information. TOZ as a new business model coordinates with the smart city development and offers preventive services, paving the way for the future urban network security. In the coming Smartizen Park, TOZ does not have a separate displays, but will provide behind-the-scene support to all network systems for the event, especially to ensure the information security of drones and protect the drone show from hacking.

"The interesting thing about smart cities is being able to show the details of the linkages, the interaction of each technology, and the coordination of different technologies," said Alan.

Siemens' Innovative Solutions Support Hong Kong's Infrastructure for 32 Years

Since 1987, Siemens has been committed to being a trusted technology partner, focusing on the areas of electrification, automation and digitalization, and providing integrated innovative solutions for infrastructures in Hong Kong. Adopted by many major infrastructures, Siemens' technology is visible across industries in Hong Kong such as the crane solutions for the modernization and automation at Hong Kong International Terminal, the H-class gas turbines at the Black Point Power Station, and the signaling, main control and fixed communication systems of the Shatin Central Link.

Mr. Eric Chong, President and CEO of Siemens Limited, pointed out the importance of having a long-term and sustainable plan in order to fully develop Hong Kong as a smart city. The Hong Kong Smart City Blueprint proposed by the Government has set a clear direction for all stakeholders who can share theirs insights and know-how to create collaborative values for the city. To further accelerate Hong Kong's smart city development, Siemens

行各業可就此提出見解和分享技術與知識，實踐智慧城市共同協作的價值。為配合香港發展智慧城市，西門子尤其在「智慧環境」及「智慧生活」方面提出多項方案，希望優化市民生活，提升城市可持續發展的程度。例如智能電錶，市民可實時了解家居用電量的分佈，從而改變生活習慣，減少耗電量。

西門子亦於科學園設立「智慧城市數碼中心」，為企業提供開發智慧城市方案平台的同時，亦致力培訓人才，並成立MindSphere學院，與職業訓練局（VTC）合作推出物聯網的培訓課程。

問及西門子在遊樂園中的展覽，鍾漢明表示在開放架構的物聯網雲端作業系統MindSphere的支持下，將演示西門子如何使用物聯網開發智慧城市，亦會展示創新的智慧城市計劃，如互聯城市解決方案，以不同基建角度，讓市民了解城市建設如何能夠連繫起來。而路旁智能監測盒子（ECB）和多用途燈柱是當中的亮點，它們展示如何透過收集城市數據例如溫度、濕度、氣壓、污染物等等來進行分析及預測，並應用於公共安全和城市規劃，最終的目標是建立一個智能基礎設施網絡。

has been developing a series of proof-of-concepts particularly in the areas of Smart Environment and Smart Living in hopes of enhancing the city's livability and sustainability. Take Smart Metering as an example. Households can review their energy consumption patterns thereby changing their living habits to save electricity.

Siemens has also set up the Smart City Digital Hub at Hong Kong Science Park, aiming to provide enterprises with a platform to cocreate smart city solutions as well as nurture talents through its MindSphere Academy which has also been collaborating with the Vocational Training Council (VTC) for advanced Internet of Things (IoT) trainings.

When asked about its display in the Smartizen Park, Eric said that, by leveraging the power of Siemens MindSphere, a cloud-based, open IoT operating system, Siemens will demonstrate how to build a smart city with IoT and introduce the smart city initiatives such as Connected City Solutions (CCS), connecting infrastructure in a holistic approach. The highlights of its display include the Embedded City Box (ECB) and the multi-purpose lamp post to collect urban data such as temperature, humidity, air pressure and pollutants. Insights generated from data analysis and prediction can be used for public safety and urban planning, with an ultimate goal in building a smart infrastructure network.

DMD Digital Art

無人機編隊表演
行業開拓者

EMPOWERING BUSINESS ASSURANCE

TOZ
CYBER INSURANCE

WE PROVIDE BUSINESS ASSURANCE FOR:

Licensed Financial Institutions

Bank, Exchanges, Brokers, Agencies

Online Businesses

Payment Gateway, Online Databases, Real Time Transactions

Critical Infrastructures

Mass Transit System, Hospital, Power Plant

WE MITIGATE THE RISK OF:

- **Business Interruption**
- **Cyber Extortion**
- **Compliance Liability**
- **Reputation Liability**

2019

21 FEBRUARY

Women in Finance Asia Annual Outlook 2019

Dr. Winnie Tang, Founder and Honorary President of SCC, attended Women in Finance Asia (WiFA) Annual Outlook 2019 on 21st February. During her keynote speech session, she shared her vision and expectations of constructing a Smart City, and exchanged ideas with participants.

智慧城市聯盟創辦人及榮譽會長鄧淑明博士於2月21日代表聯盟出席Women in Finance Asia (WiFA) 2019年度前瞻大會，並擔任專題演講講者。就著建構智慧城市的願景和期望，她與會眾分享和交流心得。

2019

06 MARCH

Fintech Awards 2018
「2018金融科技大獎」

The Fintech Awards 2018 award presentation ceremony was successfully held on 6th March, 2019. This event was hosted by etnet with SCC as the strategic partner. Hitherto, award winners brought significant impact to the community and contributed substantially towards revolutionary and innovative financial technologies and services in Hong Kong and Greater Bay Area. Mr. Gary Yeung, MH, the then Permanent Vice President of SCC, served as a Judge in the Assessment Panel. Gary received an appreciation souvenir on behalf of SCC.

由經濟通主辦的「2018金融科技大獎」完滿結束，智慧城市聯盟為是次活動策略夥伴。是次頒獎典禮於2019年3月6日舉行，得獎者都於香港及大灣區金融科技服務上有著顯著的創新成就，成為本地創新金融榜樣。聯盟時任副會長楊文銳擔任評審並接受大會送贈的紀念品。

2019

14 MARCH

Meeting with the Drainage Services Department (DSD) 與渠務署會面

On 14th March, the Drainage Services Department (DSD) of the HKSAR Government invited core members of SCC to attend a meeting to share insight on the smart city initiatives particularly from the drainage services perspective. In the two-hour meeting, Ir Wong Sui-kan, Assistant Director/Projects & Development of DSD, and officials from the department introduced the latest development of DSD in BIM, GIS and other smart city/drainage initiatives. Follow-up meetings will be arranged to further exchange views on concrete details.

香港特區政府渠務署助理署長/設計拓展黃緒勤工程師及該署多名官員，於3月14日邀請智慧城市聯盟核心成員會面，介紹該署在BIM、GIS及多項智慧城市發展方向的最新進展。在該兩小時的會面中，雙方對有關計劃作交流，及同意日後就有關具體細節作進一步討論。

The Asian Productivity Organization's Workshop on Developing Standards for Smart Cities

Dr. Winnie Tang, Founder and Honorary President of SCC, attended the Asian Productivity Organization (APO) Workshop on Developing Standards for Smart Cities. The 5-day workshop was held in Seoul, South Korea from 25th to 29th March. During the event, Dr. Tang delivered 3 presentations and interacted with government representatives and scholars from 19 countries and regions. In the meeting, members discussed the establishment of standards, legislations and strategies to enhance the productivity of the economic growth of its 20 member states in the smart city development.

智慧城市聯盟創辦人及榮譽會長鄧淑明博士代表聯盟前往南韓首爾，參與於3月25至29日、為期五天的Workshop on Developing Standards for Smart Cities研習坊，活動由亞洲生產力組織（APO）主辦。她於是次活動共發表3次演講，並與來自19個國家和地區的政府官員及學者交流，探索如何發展智慧城市，尤其在訂立標準、法規及策略上作準備，務求能夠協助促進20個成員國的經濟發展。

2019

25 - 29 MARCH

2019

13 - 16

APRIL

International ICT Expo 2019
國際資訊科技博覽

Funded by the Innovation and Technology Commission, SCC set up a Smart City Pavilion in the International ICT Expo 2019 during 13th to 16th April. On the opening day, SCC held a seminar titled Next-Gen Information Security & IoT Application. SCC representatives Ir. Dr. KF Tsang, Vice President; Mr. Ronald Pong, Chairman of IT Governance Committee; Mr. Daniel Chun, Chairman of Research & Blueprint Committee; together with Ms. Kisuyi Chan, Chief Operating Officer of Tong Tin Dei Group Limited, and Mr. Kishore Moturi, Co-Founder and VP of Marketing & Sales of Tantiv4 Inc. shared with audience the latest IoT applications and development.

智慧城市聯盟獲創新科技署資助，於4月13至16日在國際資訊科技博覽2019設立展區，並於開幕當天舉辦「新時代的信息安全和物聯網的應用」論壇。聯盟代表包括副會長曾劍鋒博士工程師、資訊科技管理委員會主席龐博文先生、研究及藍圖委員會主席秦仲宇先生，以及通天地智能產品（TTD品牌）營運總監陳靖文女士、威的科技與Tantiv4聯合創辦人兼市務及銷售副總裁Kishore Moturi先生，各人於論壇上分享物聯網的最新應用及發展。

The Internet Economy Summit 2019
互聯網經濟峰會2019

The Internet Economy Summit 2019 (IES 2019) was hosted by the Government and Cyberport from 15th to 16th April with the theme of "Digital Economy • Redefines Our Future" this year. Mr. Gary Yeung, MH, the then Permanent Vice-president of SCC, shared his insights on the new opportunities of open data in the chambers forum session.

由政府和數碼港主辦的「互聯網經濟峰會2019」，今年以「數字經濟 • 締造未來」為主題，已於4月15至16日完滿舉行。聯盟時任副會長楊文銳先生代表聯盟，於商會論壇環節與其他嘉賓分享開放數據帶來的新機遇。

2019

15 - 16

APRIL

2019

26-28 APRIL

"2050 Conference - Tech Brings Youth Together"
「2050」年青人因科技而團聚大會

Dr. Winnie Tang, Founder and Honorary President of SCC and Mr. Gary Yeung, MH, the then Permanent Vice-president of SCC, gave speeches in a three-day New Generation Forum, namely 2050 Conference - Tech Brings Youth Together. The conference was held in Hangzhou during 26th to 28th April.

智慧城市聯盟創辦人及榮譽會長鄧淑明博士及聯盟時任副會長楊文銳先生於4月26日至28日，前往杭州參與為期三日的「2050」年青人因科技而團聚大會，並於「新生論壇」中發表演講。

The Cloud Expo Asia Hong Kong 2019
香港亞太雲端科技博覽

The Cloud Expo Asia Hong Kong 2019 was held from 22nd to 23rd May at HKCEC. SCC representatives including Ir. Dr. KF Tsang, Vice President; Mr. Emil Chan, Chairman of the FinTech Committee and Mr. Paul Fung, Vice Chairman of the FinTech Committee, presented in IoT Connectivity and Platform stage in the Smart IoT Hong Kong Conference. They shared visions and concepts on IoT standards, virtual banking and Cloud-Business respectively, and also exchanged views and ideas with experts in the industry.

香港亞太雲端科技博覽於5月22至23日假香港會議展覽中心舉行。智慧城市聯盟代表在香港智慧物聯網研討會中擔任講者，包括副會長曾劍鋒博士工程師、金融科技委員會主席陳家豪先生及該委員會副主席馮德聰先生。他們分別與會眾分享物聯網技術、虛擬銀行以及商業雲端平台等概念，並與在場業內人士交流心得。

2019

22-23 MAY

International ICT Expo Next-Gen Information Security & IoT Application

國際資訊科技博覽 新時代的信息安全和物聯網的應用

由香港貿易發展局主辦的國際資訊科技博覽2019，已於4月13至16日在香港會議展覽中心舉行。智慧城市聯盟今年繼續獲創新科技署資助，於現場設立智慧城市展區，並在開幕當天舉辦「新時代的信息安全和物聯網的應用」研討會，獲近百位業界人士參與。

The International ICT Expo 2019 was held in Hong Kong Convention and Exhibition Centre from 13 to 16 April by the Hong Kong Trade Development Council. The Smart City Consortium (SCC) continued to obtain funding from the Innovation and Technology Commission this year and had set up a display area of Smart City in the venue. A seminar titled Next-Gen Information Security & IoT Application was held on the opening day as well with almost a hundred members of the industry participating.

展示精彩智能體驗

智慧城市展區中展出不同企業夥伴的創新應用，包括來自香港信息安全學院、威的科技有限公司及通天地智能產品孵化基地。

香港信息安全學院展出電子靶場（Cyber Range），一種專為培訓信息安全專家而設的虛擬訓練系統。功能類似射擊靶場，主要用於信息安全操作的攻防訓練。此訓練系統有助為政府及商界從實際攻防實戰演練過程中，開發與測試智慧城市的網絡基礎設施以及創新科技系統。

威的科技有限公司則展出以物聯網及雲端技術，配合智能手機應用程式的萬能遙控器。只要一「掣」在手，便可控制家中所有電器。還有各類智能家居相關產品，例如電源和用量設備、溫度控制器等等，為來賓帶來未來智慧生活的真實體驗。

而致力協助初創的通天地智能產品孵化基地亦有參與這次展覽。通天地為智慧城市展區帶來了塗畫電子書法枱及電格智能共享充電寶。塗畫科技利用以水代墨技術，透過安裝三維力傳感器和紅外電磁雙觸控技術，讓客人體驗在輕觸屏幕上書寫電子書法，不論中外來賓都對此躍躍欲試，這亦是通天地重點孵化的項目之一。

Showing a Splendid Intelligence Experience

Smart City display area showed innovative applications from different corporate partnership including the Hong Kong Information Security Academy, Remotec Technology Limited and TTD Smart Products Accelerator.

Cyber Range from the Hong Kong Information Security Academy is a virtual training system designed especially for training information security specialists. Its functions are similar to firing range and are used mainly for attack and defense training of information security operation. From actual attack and defense drill, the training system helps the government and the business sector to develop and test Smart City's internet infrastructure along with innovation and technology system.

Remotec Technology Limited showcased the universal remote control that applies the technology of internet of things (IoT) and Cloud, and matches with the smart phone application. Users can control all electric appliances at home with simply just a click. Other kinds of home automation related products such as power supply, usage device, temperature control, etc. brought actual experience of future smart living to the guests.

TTD Smart Products Accelerator which dedicates to supporting startups also took part in the exhibition. The TTD Chinese Calligraphy table and Smart Sharing Power Bank in the display area were brought by the company. The scrawling technology replaces ink with water, through installing structure sensor and infrared electromagnetic multi-touch technology, users can write in electronic calligraphy on the touchscreen. This is one of the key projects of TTD which drew people's attention.

A group photo was taken after the seminar.
一眾嘉賓在專題研討會後一起合照。

專題研討會　探討信息安全與物聯網應用

在歡迎辭中，聯盟副會長曾劍鋒博士工程師代表聯盟感謝協辦機構貿易發展局的支持，以及各企業夥伴的熱烈參與，並指出繼紐約、三藩市及東京後，大灣區成為世界四大經濟灣區之一，商機無限，尤其在全面使用物聯網的年代，如何發展物聯網應用並使其商業化，是箇中一大關鍵。

聯盟資訊科技管理委員會主席龐博文先生在分享中，講解信息安全監控中心的構建及管理方法。他指出在資訊科技發達的年代，人人皆使用互聯網，因此網絡安全十分重要。龐博文續指安全運營中心雖看似安全可靠，但仍存在漏洞，更不能忽略威脅情報的重要性。提及智慧城市中的防禦系統，他表示針對不同行業種類，如醫療系統、交通系統、銀行等，各自需要特定的安全運營中心進行多層防禦，才能有效地抵禦黑客或事故發生。

SCC Vice President Ir. Dr. KF Tsang delivered the opening remarks.
智慧城市聯盟副會長曾劍鋒博士工程師致歡迎辭。

Mr. Ronald Pong, Chairman of the IT Governance Committee of SCC, outlined issues of information security.
聯盟資訊科技管理委員會主席龐博文先生講述信息安全議題。

Seminar Exploring Information Security and IoT Application

In the opening remarks, Ir. Dr. KF Tsang, Vice President of SCC, expressed his gratitude on behalf of the Consortium for the support from the co-organizer, the Hong Kong Trade Development Council. Ir. Dr. Tsang also thanked each corporate partner for their active participation. There will be lots of business opportunities as the Greater Bay Area (GBA) is one of the world's top four economy bay area after New York, San Francisco and Tokyo. How to develop and commercialize the IoT application is the main focus especially in the time when development potential created by IoT is huge.

Mr. Ronald Pong, Chairman of the IT Governance Committee under SCC, expounded the structure of information security operation centers and management approaches in his sharing. He stated that as IT is well developed in this age and everyone uses the internet, cyber security becomes utterly important. He also pointed out that although the security operation centers seemed reliable, people should not neglect the inherent threat to all programs as loopholes were almost inevitable. Speaking on the defense system for smart city, Mr. Ronald Pong said different industries such as the medical system, transportation system and banks require specific security operation centers for defense in multi-layer in order to resist hackers effectively and prevent incidents from happening.

Mr. Kishore Moturi, Co-Founder and VP of Marketing & Sales of RemotecTantiv4 Inc shared the operation of IoT software platform.
威的科技與Tantiv4聯合創辦人兼市務及銷售副總裁Kishore Moturi先生分享物聯網軟件平台的運作模式。

Mr. Daniel Chun, Chairman of the Research & Blueprint Committee of SCC, highlighted the latest smart home application.
聯盟研究及藍圖委員會主席秦仲宇先生分享智能家居的最新應用。

通天地智能產品（TTD品牌）營運總監陳靖文女士於分享中表示，打造國際科技創新中心是大灣區建設的重中之重，大灣區擁有不少科研優勢，創科環境更越趨國際化，成為中國創新科技的樞紐。她亦鼓勵香港青年到深圳創業，發展智慧物聯網產品線，共建雙贏，從而促進粵港澳大灣區的繁榮發展。而通天地智能產品孵化基地作為深港青年創新創業的學習和培訓基地，為初創提供資金及技術支援，期望發掘和培育更多初創團隊。

聯盟研究及藍圖委員會主席秦仲宇先生聯同威的科技與Tantiv4聯合創辦人兼市務及銷售副總裁Kishore Moturi先生，於論壇上與大家分享物聯網的最新應用及發展。秦仲宇講解智能家居所運用的物聯網科技，包括紅外線感應器、聲控功能等等；而Moturi則與眾人分享物聯網軟件平台的運作模式。

是次展覽及專題研討會得以順利舉行，實有賴各合作夥伴的全力支持。聯盟未來將繼續促進官、商、民之間的合作，推動香港智慧城市的全面發展！

Ms. Kisuyi Chan, Chief Operating Officer of Tong Tin Dei Group Limited (TTD), expressed in her sharing that building an international innovation and technology hub is the key of the GBA. The GBA with scientific research advantages and the environment of innovation and technology tends to globalize, it will become the hub of innovation and technology for China. She encouraged Hong Kong young people to start business in Shenzhen and develop smart IoT product line for a win-win situation while boosting the growth of the GBA. TTD as the learning and training base of innovation and startups for Hong Kong and Shenzhen youngsters, provides funding and technical support to seek and train more startups teams.

Mr. Daniel Chun, SCC's Chairman of the Research & Blueprint Committee, shared the latest application and development of IoT in the forum with Mr. Kishore Moturi, Co-Founder and VP of Marketing & Sales of Tantiv4 Inc. Mr. Chun shared with the audience the IoT technology applied in home automation such as infrared sensor and voice control function, and Mr. Moturi talked about the operation of IoT software platform.

With the efforts of every business partner, we successfully held this exhibition and symposium. SCC will continue to accelerate the cooperation between the government, the industries and citizens for promoting a comprehensive development of Hong Kong Smart City.

Ms. Kisuyi Chan, Chief Operating Officer of Tong Tin Dei Group Limited (TTD), talked about kickstarting the IoT Smart Production Lines in GBA.
通天地智能產品（TTD品牌）營運總監陳靖文女士在演講中談及在大灣區發展物聯網智能生產線。

香港能否做到一網通辦

原刊於2019年5月27日《東方日報》評論版

葛珮帆議員
Hon. Elizabeth QUAT, BBS, JP

立法會議員(新界東)
Legislative Council Member (New Territories East)

智慧城市聯盟創辦人及榮譽會長
Founder & Honorary President, Smart City Consortium

When Can We Have an All-In-One E-Services Platform?

Originally posted on Oriental Daily News on 27th May, 2019

上海政府於去年推出「一網通辦」政務服務，一改以往市民要到不同部門尋求協助的煩惱，將1,274項政務服務事項放到一個網站，市民只要完成登錄，就可以使用全程一體化的在線政府服務，包括統一公共支付、統一物流快遞等，大大便利市民的生活。

全國首創的上海「一網通辦」政務服務，透過上海市大數據中心，對全市的公共數據按照應用需求進行集中統一管理，打破部門本位的辦事方法，做到政務數據百分之百共享。運用大數據加上人工智能技術，網頁可以主動向市民提供個人化的服務。

具體的例子如市民往返中港兩地，現時香港人需要自己確認是否持有有效的回鄉證，如果沒有，就要自己到中旅社辦理證件。但在「一網通辦」的服務下，網頁得悉上海市民要到香港旅遊，會主動顯示訊息提醒港澳通行證是否即將到期，市民可以直接在線預約辦理證件。系統會根據電子身份，為市民自動填充個人基本資料，完成資料輸入後，只需5分鐘就會顯示預審結果，通過預審的市民可以選擇出入境辦理點、日期及時間，輕鬆一站式完成證件辦理。

香港政府在2017年公布《香港智慧城市藍圖》，指出以開放數據、智慧城市基礎設施以及科技應用打造智慧政府，當中提及於2020年採用單一數碼個人身份登入，並且應用人工智能、聊天機器人和大數據分析，以提升電子服務使用者的體驗。

智慧城市已成為各個地方的發展目標，香港必須急起直追。筆者一直要求香港政府部門的數據應互聯互通，以單一平台為市民提供一站式服務，希望政府能邀請上海市大數據中心的團隊到香港分享實踐經驗。相信香港推行了數碼個人身份後，智慧政府服務可以加速發展。

Shanghai citizens can save time and effort in visiting various government agencies for assistance and services. The One-Stop Government Services Platform (一網通辦) launched last year incorporated 1,274 public services from different government bureau onto a single online portal. After successful login, user can access standardized online public services, such as the unified toll payment system and logistics support services, providing a more convenient way of living.

The first municipal e-government services portal consolidates open data from the big data centre in Shanghai in accordance with the network's needs, cutting through the red tape in policies and administration to achieve complete data sharing among government agencies. Customized services powered by big data and AI solutions are also available in the portal.

Nowadays, Hong Kong citizens have to check the expiry date of their Mainland home return permit before crossing the Shenzhen border. Those without a valid permit must submit their application to the China Travel Service (HK) in person. Unlike such, Shanghai residents, prior to their visit to Hong Kong, will receive a message from the One-Stop Government Services Platform reminding them to renew their Exit/Entry Permit for Travelling before due. Application for a new exit/entry permit can be submitted via the online booking platform. The system will automatically fill in their personal information on the online application form based on their eID data, and provide the application result in 5 minutes. Pre-qualified applicants can complete their application after inserting the date, time and place of entry and exit.

The 2017 Smart City Blueprint for Hong Kong maps out a smart government underpinned by open data, smart city infrastructures and technological applications. In particular, the eID common login platform will be in operation by 2020, while enhancing e-services user experience with the application of AI technologies, chatbot and big data analysis.

Smart city projects are moving at full throttle all over the world. There is no reason to fall behind in the global race. I have long been advocating inter-bureau data connectivity as well as an all-inclusive online services platform for our citizens. I am also expecting the specialists from the Shanghai big data centre to visit Hong Kong to share their practices and experience. I believe the widespread use of eID solutions can boost the development of our smart public services.

葛珮帆議員
Hon. Elizabeth QUAT, BBS, JP

立法會議員(新界東)
Legislative Council Member (New Territories East)

智慧城市聯盟創辦人及榮譽會長
Founder & Honorary President, Smart City Consortium

支持大力建設智慧監獄

原刊於2019年3月30日《東方日報》評論版

Prisons Must Be Smarter

Originally posted on Oriental Daily News on 30th March, 2019

懲教署不久前宣布，將在懲教設施中加強科技應用，提升監獄管理的效率及保安水平，積極發展智慧監獄系統。懲教署會先斥資逾400萬元試行四項智慧監獄系統，包括維生指標監察系統、移動及位置監察系統、影像分析及監察系統，和緝毒機械臂系統，並向傳媒展示智慧手帶、閉路電視監控、緝毒機械臂等儀器。

歐洲監獄及感化服務的創新科技顧問Steven Van De Steene，和英國德蒙福特大學社區及刑事司法高級研究員Victoria Knight都指出，建設智慧監獄可以幫助囚犯、家屬、監獄職員和專業團體建立關係，盡量減低監禁帶來的影響和傷害，使得囚犯刑滿後能夠融入社會。

懲教署監獄注入「智慧」元素，科技應用不但在監獄管理上，同時也希望在囚人士一齊「Smart」起來，令他們在獲釋後不與社會脫節。

在更生工作方面，懲教署因應教育潮流，為在囚青少年引進STEM教育，讓他們裝備自己以應對社會急速發展所帶來的挑戰。另一方面，安全羈押十分重要，懲教署近年積極探討引進創新科技，以人面識別系統、人工智能、巡邏機械人等優化懲教署的管理及工作環境。

儘管監獄看似與社會完全分隔，但在高牆之內，懲教人員積極地運用創新科技令監獄發展與社會接軌，幫助在囚人士獲釋後重投社會懷抱，同時提升監獄管理及運作效率，因此建設智慧監獄值得大力支持。

港府善用科技，提升羈管效率及院所保安水平，是一個好開始。懲教工作面對很大困難，懲教人員默默耕耘但經常被抹黑醜化，流失率是所有紀律部隊中最高，筆者全力支持建設智慧監獄，雖然香港起步較慢，但現在的計劃比較全面，相信未來會在世界領先，既能大量改善工作環境，又能提升管理，又可幫助在囚人士學習，希望政府增撥資源盡快落實。

The Correctional Services Department recently pledged its commitment to develop smart prison systems and enhance the use of technologies inside correctional facilities for more efficient facility management and greater security. More than $4 million will be allocated in the first stage to test the Health Signs Monitoring System, Passage Surveillance System, Video Analytic Monitoring System and drug-detection robotic arm system. Other hardware such as smart wristbands, CCTV systems and robotic arm for detecting drugs were displayed at the press event.

Steven Van De Steene, who specialized in innovation and technology development for prisons and probation services, and Victoria Knight, a senior research fellow in Community and Criminal Justice of De Montfort University, highlighted the positive impacts of smart prison solutions. These can strengthen connections among inmates, their family members, warders and professional bodies, alleviating the negative impacts of imprisonment, and facilitate reintegration of rehabilitated offenders into the community.

The new "smart" built-in features offer technical solutions for better prison management. More "advanced" vocational training is also provided to prepare inmates for their employment after their release.

STEM curriculum adopted in mainstream education is introduced to equip and expose young inmates to the rapid social transformation. Safe custody is another main concern. In recent years, the Correctional Services Department has considered innovative solutions such as face recognition system, AI solutions and robotic prison guards as means to improve administration and working conditions.

Rehabilitation institutes are not places of exile. Correctional services officers have harnessed innovative technologies to modernize facilities behind the high walls, facilitate re-integration of released offenders into the society and enhance the administrative and operational efficiency across the prisons.

Our government has laid a strong foundation for higher custodial efficiency and higher level of security by means of innovative technologies. Nevertheless, correctional staff are still facing challenges at work. Firstly, their "silent" efforts are often belittled, if not vilified, in the public. Secondly, the turnover rate of the Correctional Services Department is the highest among local disciplinary forces. Smart prison systems are the best option to improve working conditions and management efficiencies for officers and vocational training for persons in custody. The ongoing comprehensive smart prison program will help us pick up the pace after a slow start. More funding from the government is needed to maintain our world-class rehabilitation institutes.

鄧淑明博士　太平紳士
Dr. Winnie TANG, JP

智慧城市聯盟創辦人及榮譽會長
Founder & Honorary President,
Smart City Consortium

迎接AI未來 編程和STEM應成常規課程

原刊於2019年4月5日《信報》教育講論

Coding and STEM Should Be Included in School Curriculums

Originally posted on China Daily on 19th February, 2019

阿里巴巴的馬雲曾經說，全球最具實力的3個國家，除中美之外，就是以色列。

回歸以來，香港已有兩個特首：董建華和梁振英先後親自到訪取經，其他由官方和民間的訪問團更不計其數，大家都想了解這個戰禍頻仍、人口不足900萬的小國，為什麼能突圍而出。

今天以色列初創風行，出產了被Google以13億美元收購的導航應用程式Waze、被Intel以153億美元收購無人駕駛初創Mobileye；《2018年全球初創生態報告》指出，以色列第二大城市特拉維夫在人均初創數字更首屈一指；在網絡安全、金融科技也成績驕人，其實這是該國磨劍多年的成果。

教育改革刻不容緩

首先以色列有名為「Chutzpah」，即勇於挑戰固有思維、不怕大膽質詢上級的傳統；同時，早於1995年，4位以色列學者已發表論文，研究如何在高中推行電腦教育，由理念、課程綱要、內容也詳細列出，對象不限於有志於電腦行業發展的同學。這篇論文後來廣為歐美等多國學者引用。

Jack Ma of Alibaba once said the three most powerful IT countries were China, the United States and Israel. Since Hong Kong's return to China in 1997, two chief executives — Tung Chee-hwa and Leung Chun-ying — had visited Israel, not to mention numerous government officials and private groups. Almost all of them, including the two Hong Kong leaders, focused on learning about Israeli success in technology development, and how this tiny country, burdened by military clashes and with a population of less than 9 million, has achieved so many technological breakthroughs.

Establishing startups has been a significant trend in Israel. Big ticket acquisitions by the world's largest corporations have given Israeli entrepreneurs the confidence to dream big. For example, Waze, a traffic and navigation application startup was acquired at US$1.3 billion by Google. The acquisition of Mobileye, an autonomous-driving mobile phone startup, by Intel for US$15.3 billion was another big deal. According to 2018 Global Startup Ecosystem Report, Tel Aviv has the most startups per capita in the world.

In fact, these achievements are attributable to the country's hard work spanning over many years. First of all, Israel embraces "Chutzpah", which means "thinking independently and questioning everything". As a culture, Israelis are used to challenging conventional thinking and not being afraid to question their superiors.

今天，大家逐漸認識到學習編寫電腦程式的重要性，不下於學習語言和數學科，但二十多年前以色列早已信奉此道，並由學者專家帶領下研究在全國高中的執行方案，這正為後來科技浪潮帶來的機遇打下良好的基礎。

但教育是個古老行業，要改變談何容易。在人工智能（AI）研究出類拔萃的美國卡內基梅隆大學，它的電子計算機學系3位教授日前在《哈佛商業評論》聯合撰文，呼籲教育改革刻不容緩，以為年輕人預備AI未來。

不同階段不同重點

他們指AI不單是未來廣泛使用的工具，也是人類的工作夥伴，因此年輕人在中小學不同階段應有不同的教育重點來迎接未來挑戰：

一、幼稚園到小學階段：解決問題和協作能力。設計人工智能系統時，其實要把一個大問題分拆成許多小單元，然後把小單元的解決方案整合。因此，應該及早培養合作和解難能力。

二、初中：在常規課程外，應加入如機械人、計算機藝術（computational art）以擴闊學生對電腦的認識和興趣。

三、高中：加強數學課程與電腦科學的連繫，如統計、機會率、邏輯等，對將來以數據主導的工作甚為有用，而傳統課程如微積分，比例可以相對減少。

As early as 1995, four Israeli experts had already published papers on how to implement computer education in high schools. They designed the syllabus and school curriculum. The new plan emphasizes the foundations of algorithmic thinking and computer programing (coding) learning as a way to use computers to carry out an algorithm. The new syllabus targets every young student. This paper was later widely quoted by scholars in Europe and the US.

Today, everyone may be familiar with the importance of studying coding. However, Israel was already convinced of the importance of this more than 20 years ago. They were well-prepared for all the opportunities brought about by the technology wave.

But education systems have a long history of being conservative and resistant to change. At the Carnegie Mellon University in the U.S., which is famous for artificial intelligence research, three professors at the Department of Computer Science recently jointly wrote an article in the Harvard Business Review. They urged the government and education institutes to prepare young people for an AI future.

They foresaw that in the future, AI would be more than just a tool; it would also be our working partner and a ubiquitous part of our lives. Therefore, young people should receive training in STEM (science, technology, engineering, and math) during different stages of primary and secondary schooling to survive in the future job market. Their suggestions are as follows:

From kindergarten to primary education: Focusing on problem solving and collaboration skills. When designing an AI system, it is necessary to breakdown a big problem into many smaller ones, and then integrate the respective solutions. Inquiry-based or project-based learning at an early stage is a good approach.

In middle and high schools: In addition to regular courses, subjects such as robotics and computational art should be added to broaden students' understanding of computer science.

In high schools: Strengthening studies in math and computer science, such as statistics, probability, graph theory and logic, etc. will be useful for future data-driven work. Less emphasis on conventional math, including advanced calculus, was also suggested.

In recent years, the SAR Government has also invested a lot in increasing the digital ability of our young people, but its policy tends to be school-oriented, that is, the efforts are left to the schools themselves.

其實香港政府也為預備年輕人迎接未來投入不少資源，不過傾向「校本」，即由學校自行規劃。去年有本港傳媒探視全港500多所小學，發現逾六成學校在介紹概覽中提及推展STEM教育，有滲入常識科、電腦科課程或課外活動，總之各自各精采。同時，部分學校用完教育局提供的10萬元津貼後，可能會減少這些活動。

政策這樣鬆散，無怪乎早前經濟學人訊息社（EIU）評估教育政策和體系如何協助15至24歲的年輕人準備未來時，香港的評級在35個經濟體中僅排22，遠遠落後於新加坡（第一位）、南韓（第六）、台灣（第七）和日本（第十二）。

最能居安思危的，大抵是家長。雖然STEM未納入正規課程，但從去年書展現場及網上的問卷發現，600多位受訪家長中，約四成在書展購買STEM相關書籍佔「總購書量二至四成」，更有兩成人購買STEM相關書籍達總書量五至七成。

我希望香港也急起直追，把編程和STEM一如數學、中英文科般，為中小學制訂官方要求，以此釐定教科書、課程大綱，同時作為訓練專業教師的基礎，以助下一代做好準備，迎接未來挑戰。

Last year, the local media reviewed information from more than 500 primary schools in Hong Kong. It was found that over 60 percent of the schools claimed to have included STEM education in the teaching of conventional subjects and computer courses in their curriculums. However, some schools might scale down their STEM activities after using up the HK$100,000 subsidy provided by the Education Bureau.

What's more, the policy is loose with no concrete objectives to be achieved. No wonder the Economist Intelligence Unit in evaluating how education policies and systems can help young people aged 15 to 24 prepare for the future ranked Hong Kong 22 out of 35 economies, far behind Singapore (1st), South Korea (6th), Taiwan (7th) and Japan (12th).

However, parents realize the importance of this and the need to prepare their children for the future. Although STEM has not been included in formal curriculums, a survey conducted at the Hong Kong Book Fair and online last July found that out of 600 parents with children in kindergartens or primary schools, about 40 percent of them purchased STEM-related books at the fair — which accounted for 20 percent to 40 percent of the total books purchased. Another 20 percent of parents bought even more with over 50 percent of their total purchases on STEM-related books.

I hope Hong Kong will also catch up by including coding and STEM as subjects with equal ranking as math and languages, setting academic requirements for primary and secondary schools so that syllabuses and textbooks can be prepared accordingly. This will also serve as a basis for training teachers to help the next generation be well-prepared for the challenges ahead.

黃慧敏女士
Ms. Rosana WONG

有利集團執行董事
Executive Director of Yau Lee Group

智慧城市聯盟副會長及智慧生活委員會主席
Vice President and Chairperson of Smart Living Committee, Smart City Consortium

建設未來城市 我們如何學習、創造和創新？

Building Future Cities How we Learn, Create and Innovate?

在21世紀轉型下如何提高市民生活品質，是大多數政府和社區都面對的一系列日益嚴峻的挑戰。越來越多人在城市生活，據聯合國統計，全世界約有55%的人口居住在城市地區，預計到2050年將增加至68%。預測顯示，到2025年人口因為城市化以及世界人口的總體增長，將為城市增加25億人口，其中接近90%的人口增長在亞洲和非洲。如何邁進更智慧及更可持續的生活？這是城市化為社會和經濟發展創造的重要機遇；與此同時，城市化也要求基礎設施更完善和資源規劃更合理。顯然，香港作為亞洲的心臟，應該鼓勵以「城市動態智慧」來制定以人為本的發展方案，並為市民提供更好更智慧的選擇。

事實上，香港人口超過748萬人，城市化率為100%，每平方公里約有7,000人。香港人也是世界上最長壽的，女性的平均壽命為87.32歲，而男性則為81.24歲。因此，對香港政府和城市規劃者來說，最具挑戰的是如何在土地均衡供應和可持續發展方面提出最佳的方案。可以想像香港的微型單位有多小嗎？就像一個大約135平方呎的車位。香港的微型單位世界聞名，其中一些更是世界紀錄保持者。微型單位，也稱為納米單位和鞋盒屋，設計相當細小，通常少於200平方呎。

Many governments and communities around the world are facing growing challenges to improve the quality of citizens' living standard as they enter the 21st century. According to the United Nations, 55 percent of the world's population lives in urban areas and is expected to increase 68 percent by 2050. Projections show that urbanization, the gradual shift in residence of the human population from rural to urban areas, combined with the overall growth of the world's population could add another 2.5 billion people to urban areas by 2025, with close to 90 percent of this increase taking place in Asia and Africa. With more and more of us living in cities, urbanization is creating a significant opportunity for social and economic development towards smarter and more sustainable living. At the same time, it is also exerting increasing pressure on infrastructure and resources planning. Clearly, Hong Kong, as the heart of Asia, should have mapped out smarter citizen-centric developments by encouraging dynamic intelligence towards better choices for citizens.

Indeed, Hong Kong has a population of over 7.48 million people and 100 percent urbanization with around 7,000 people per km2. Hong Kong's people also enjoy the longest life expectancy in the world. The average lifespan for women is 87.32 years and men on average can expect to live to 81.24 years. Therefore, one of

提高市民生活品質是轉型智慧城市的終極目標。作為智慧城市聯盟副會長及智慧生活委員會主席，我一直致力以動態智慧為社區提供更好的選擇。在香港政府大力推行建築2.0和工業4.0的環境下，我和旗下的綠色綜合企業及創投基金團隊為社區建造一個以人為本的未來城市，並由智能及健康生活的住宅項目開始，展示了發展商及建築商如何設計、建造及保養一個即使在有限空間內亦能宜居的理想住宅，並為大角咀等舊區注入活力。

此住宅項目在設計及興建方面採用了全生命週期管理方法，在微觀空間及宏觀地理綜合水平的整合下，加強了包括空間、景觀、建築、結構、連通性及綠化方面的整體智能規劃，讓住客在一個有限但輕鬆的空間下享受家庭生

the most challenging issues for the Hong Kong Government and urban planners is to look at what is the best for a balanced and sustainable development on land supply. Can people imagine how small Hong Kong's apartments can get? It is like a parking lot with around 135 ft2. Hong Kong's micro-apartments, some of which hold the world record as the smallest living spaces constructed for people, are well-known. Micro-apartments, also known as nano flats and shoebox homes are specifically designed to be small, typically less than 200 ft2 in size.

Improving citizen's quality of life is the ultimate goal of smart city transformation. As Vice President of Smart City Consortium and Chairperson of its Smart Living Committee, I am committed to providing better choices for the community by dynamic intelligence. Embracing the support from the Hong Kong Government's launching of Construction 2.0 and Industry 4.0, I have led the team of my green integrated corporation and venture capitalists to build a citizen-centric future city, beginning with residential building with smart and healthy living elements for the community. This shows how developers and builders can design, build and maintain a livable and desirable home even in limited space and energize old neighborhood like Tai Kok Tsui as well.

This current residential development is designed and to be built with the integration of micro spatial to macro level of geographical synthesis under full lifecycle management approach to enhance the entire smart planning in terms of micro spatial, landscape, architectural, structural, connectivity and greenery. These allow the residents to enjoy family life during leisure time after work and invite their parents and grandparents to gather over the weekends and holidays in a limited but relaxing environment. Under such forward smart planning approach, the project team initiated Virtual Design

活，尤其是下班後的閒暇時光，並可邀請他們的父母及祖父母來渡過一個五代同堂的周末和假期。同時，業界一般需要平均花三個多月才能完成設計及將一般建築圖則呈交予屋宇署審批。但此項目在前瞻性的智能規劃下，團隊使用了模擬設計及施工概念和共研概念（Big Room Concept）來提高合作性，大幅提升效率，令項目只需在37個工作天內，並透過6個會議便完成以上程序，絕對是業界的一項突破。

此住宅項目亦採用了不同的房地產科技及建築科技，例如用作居住環境、交通及可持續用地等城市規劃的地理資訊系統結合建築信息模擬的立體模型、附有香港綠建環評及中國三星的IFC/BIM附加元件的本地化認證建築能源模擬計劃EcoDesignerSTAR，透過此軟件可作不同層面如温度帶、用水量及熱能的模型分析。這不但讓用戶在設計過程中已能評估能源用量，甚至可以在香港及中國不同地區之間進行比較，以提高香港（綠建環評）及中國（三星）綠色認證的標準，從而優化綠色建築及碳減排政策。以此住宅項目為例，項目團隊在設計階段已成功取得香港綠建環評的暫定評估鉑金級別。

此外，項目團隊還率先使用了全息眼鏡（HoloLens），使用者能超越二維屏幕，投入半虛擬、半真實世界，輕鬆存取及理解三維數據，從而大大減少人為錯誤並提高項目效率。同時，項目又大幅運用機械人施工，如外牆滲水測試機械人和室內及天花噴漆機器人，以響應工業4.0的精神。

and Construction and Big Room Concept to improve collaboration through greater team integration and has greatly enhanced the efficiency. While other projects of similar scale would normally take 3 months in average to freeze the design and submit the General Building Plan to the Building Department for approval, our project team only took 6 meetings within 37 working days. This is another breakthrough.

Other exponential property technology (PropTech) and construction technology (ConTech) solutions are also implemented in this development. For instance, GIS-BIM Modelling for urban planning like housing, transportation and long term sustainable land use planning, a localized certified building energy simulation programme EcoDesignerSTAR with Hong Kong BEAMPlus and China Three Stars IFC/BIM add-on modules allow stakeholders to perform environmental analysis with multiple thermal zones, water calculation and model-based solar study evaluating energy performance during the design process. This even enables a comparison between Hong Kong and different part of China to enhance the standard of green certifications (Hong Kong BEAMPlus and China Three Stars) and the implementation of green construction and carbon emission reduction policy. In this residential development, the project team has successfully achieved Hong Kong BEAMPlus and was awarded a Provisional Platinum with the adoption of this add-on.

In addition, the project team also used HoloLens which enables us to go beyond 2D presentation and into a part virtual, part real world for access to immersive visualization of the designed 3D data. This greatly reduces human error and making projects much more efficient. Robotics construction methods, such as Spray Water Robot for Water Tightness Test at External Walls and Spray Painting Robot at Internal Wall and Ceiling, will also be widely adopted to echo the essences of Industry 4.0.

Apart from the above Prop Tech / Con Tech, Modular Integrated Construction is also another rightly adopted practice and widely discussed in our Hong Kong building industry. MiC refers to a construction whereby free-standing integrated modules (completed with finishes, fixtures and fittings) are manufactured in a prefabrication factory and then transported to the site for installation in a building. MiC is an innovative construction solution to save site labour as well as address the aging workforce problem in Hong Kong since among skilled construction workers, over 57 percent is over 50 years old and 23 percent is over 60. MiC can also provide more assured quality, increased productivity and shorter construction cycle.

除以上房地產科技及建築科技外，「組裝合成」建築法亦是另一在香港建築業中廣泛討論的話題。「組裝合成」建築法是指將已在廠房完成飾面、裝置及配件組裝的預製組件，運送至工地裝嵌成建築物。現今香港建築業超過50歲及60歲的資深工人分別超過57％和23％，這項創新的建築方案不但可以節省地盤工人及解決人手老化問題，還可以提高建築質量、生產力及縮短施工週期。

「Concrete MiC 1.0」是屋宇署首個批出的混凝土組裝合成建築法，在將軍澳百勝角消防處紀律部隊宿舍首次採用，成為建築2.0的先導工程項目。相比傳統方法，採用這個嶄新建築法後，預計項目時間大約可縮減4個多月及減省四至五成人手。結合名為BEANiE的新開發區塊鏈精簡整合平台，提供可追蹤的數碼化記錄及完整的施工數據，可確保組裝合成建築組件由工廠運到工地現場的安全性和準確性。

毋庸置疑，香港建築業毫不墨守成規，反而無懼創新。事實上，建築業可以從人工智能，物聯網和大數據中獲益良多，而且效果超出預期，例如更智慧、更低成本及更有效率的建築都顛覆了這個迅速變化的行業。我認為所有城市，包括香港在內，應被視為一個教室、一個實驗室、一所大學，積極吸引對智慧城市發展有利的機會、人才和相關業務。我們如何提升自身能力、如何衡量效益，如何利用潛力絕對是成功的關鍵，因為智慧城市的推進全賴我們如何學習和研究未來。讓我們共同為自己及下一代創造一個更智慧的可持續城市。

Concrete MiC 1.0 is Buildings Department's first approved Concrete MiC System and has been used in the Construction 2.0 pilot project Disciplined Services Quarters for the Fire Services Department at Pak Shing Kok. In this project, with the adoption of MiC, the anticipated programme construction time can be roughly shortened by more than 4 months with labour cost reduced between 40 to 50 percent. Together with the further development of BEANiE, a blockchain enabled lean integrated platform, for monitoring MiC process from factory to site can ensure safe and accurate process control with the tractability of digital record history and integrity of the construction data.

Needless to say, our Hong Kong construction industry is not risk averse, not conservative nor afraid of innovation. On the contrary, the construction industry has a lot to gain from artificial intelligence, internet of things and big data, affecting us in more ways than you think. For instance, building smarter, cheaper and more efficiently has been disrupting the rapidly changing industry. In my opinion, a city including Hong Kong should be seen serving as a classroom, a laboratory, a university in order to attract opportunities, talents and also business which are essential to smart city development. The way we promote its ability, the way we measure its impact and the way we better harness its potential are the keys to success because smart cities are truly reliant on understanding how we learn and research in the future. So let's co-create a smart and sustainable city for us right now, for our next generations and many generations to come.

新 · 潮
5G網絡革命

原刊於2019年3月20日《頭條日報》專欄

陳曉峰先生　榮譽勳章
Mr. Nick CHAN, MH

第十三屆香港特別行政區全國人大代表
Hong Kong deputy to the 13th National People's Congress

智慧城市聯盟榮譽法律顧問
Honorary Legal Adviser of Smart City Consortium

5G Network Will Bring a New Wave of Innovation

Originally posted on Headline Daily on 20th Mar, 2019

革命性的第五代通訊科技（5G）將顛覆世界，孵化無限可能，並重設商界新秩序，也是建立頂尖「智慧城市」的「極速引擎」！

5G技術的數據傳輸速度理論上可比4G快一百倍，高達每秒100GB，比現時一般家中光纖寬頻快很多倍，將來不用一秒就可下載一套高清電影；其高速率可使每平方公里聯接100萬個通訊設備，並降低通訊延誤性10倍；其網絡擁有的高速率、廣聯接、大容量、低時延及低功耗的特性，與未來跟人工智能、大數據及物聯網緊密結合互動，將開啟了與我們息息相關萬物互聯的新時代。這將會開展人類新的工作、生活及溝通方式，讓你身邊包羅萬有的事物及設備都可能來一個翻天覆地劃時代的大革新！讓攜着（或植入）5G設備的「5G人」能走到世界最前端，可以隨時、隨地、隨機，無拘無束地享受人生、工作，與世界接軌！

中、美、俄、歐盟及韓國等均奮力爭奪5G通訊科技發展的領先地位。在香港，「中移動香港」是首家於去年成功完成「端到端」5G網絡測試的網絡供應商。香港通訊事務管理局於去年開展通訊事務法律的修訂和諮詢，將有合共4,100兆赫的頻譜於今年4月起推出，與其他具競爭性的頻譜也計劃於本年稍後時間以拍賣方式分配。

通訊事務局建議簡化非傳送者牌照申請的程序，並新增權力管轄一些在物聯網下新產生的通訊設備之規格，以及改善在《電訊條例》下的上訴機制。諮詢亦建議法例可簡化電訊營運商進入不同地點安裝及維護5G網絡設備的申請許可程序，令營運商更容易把網絡覆蓋整個城市！

筆者希望政府靈活地釋出更多頻譜供營運商選擇和應用，加快5G技術的普及性和應用性，抓緊大灣區發展的商機，令香港成為世界首屈一指的智能城市！

As a new powerhouse of our smart city movement, 5G technologies will unleash endless business opportunities, and fuel a radical transformation of the global trading market.

5G mobile network is expected to reach a theoretical data transfer speed of up to 100GBps, 100 times faster than 4G network, exceeding the current downloading speed of fibre-to-home broadband connections. In the future, we could download a whole HD movie within a second. Given the high transmission speed of 5G, it could connect 1 million communication devices in every square kilometer and reduce communication latency by 10 times. By integrating with artificial intelligence, big data and Internet of Things (IoT) technologies, the 5G advantages (high transmission speed, widespread coverage, high capacity, low latency and low power) will open the doorway to the Internet-Of-Everything era, where the global community will experience a cross-sectorial technological revolution that starts a new way of living, working style and communication mode. "5G followers", whether equipped or built in with 5G devices, will enjoy unlimited access to a variety of products and services at home or at work, anytime and anywhere.

China, USA, Russia, EU and Korea are striving for 5G leadership. Last year, China Mobile Hong Kong completed the end-to-end 5G network trial, ahead of other Internet service providers in Hong Kong. Following the public consultation on telecommunications law review last year, the Hong Kong Communications Authority will assign the first batch of 4100 MHz of spectrum from this April. Other valuable spectrums are expected to be open for bidding later this year.

The Communications Authority proposed to simplify the application process for non-carrier licenses, a new regulation on specification of advanced IoT products and reforms of the appeal mechanism established under the Telecommunications Ordinance. To further expand the network coverage, the consultation paper also suggests a more streamlined application process for licenses issued to local telecom service providers for establishment and maintenance of 5G network facilities at different locations.

With more spectrums allocated for telecom operators, there will be a higher successful rate for wide adoption and application of 5G technologies in our society. Now is the time to harness the business opportunities under the Greater Bay Area Initiative to shape Hong Kong into a world-class Smart City!

梁泰康先生
Mr. Steven LEUNG

衞安集團助理總經理–業務發展
Assistant General Manager,
Business Development, Guardforce Group

智慧城市衍生方案 有效改善城市衞生

Keeping Our City Clean with Smart City Solutions

香港政府將香港建設為智慧城市的決心不容置疑。由起動九龍東辦事處統籌在九龍東的新建設加入智慧城市元素，將該區打造為發展智慧城市的試點，顯示香港正積極在智慧城市的發展進程推進。

在政府大力推動下，社會不同階層團體亦可一同審視如何引用傳感器及物聯網等科技，將我們的城市升級，從最基本的服務例如廢物處理及公共洗手間衞生等著手，提升衞生服務的效率，關顧社會的健康。

目前，我們的城市每日產生逾15,000噸垃圾，一半以上需要動用垃圾車運載至堆填區，城市的廢物量不單對堆填區造成壓力，收集垃圾的重型車輛每日在馬路穿梭，排放大量廢氣，令空氣污染惡化。

除了宣傳「惜物減廢」從源頭著手，鼓勵市民減少廢物量之外，我們亦應採納智能方案，提升廢物處置的效率，降低對環境的影響。

智能廢物箱

智能工具絕對是一個好幫手，例如，智能廢物箱具備壓縮及感應裝置，與雲端平台連結。壓縮器可將廢物箱內的垃圾壓縮，增加容量，廢物箱的傳感裝置又會監察每個廢物箱的滿載程度，管理機構可在有需要清空時才安排廢物收集，省卻垃圾車在路面行走，減輕排放。

箱內的傳感器亦可感應人手及温度，當有人手接近廢物箱時，壓縮程序會自動停止；當廢物箱內部空間的温度上升顯示可能出現火警時，系統會向管理單位發出警報，以作適當的反應，令設備更安全。

There's no second thought about it – Hong Kong will be a smart city and the government's goal in this regard is clear, as evidenced by the new development in Kowloon East, which is a smart city showcase driven by the important work of Energizing Kowloon East Office (EKEO).

The community as a whole could look up to the smart use of sensors and the internet of things (IoT) to make every aspect of our city more efficient and caring, starting with the basics such as having a clean city with efficient rubbish disposal and hygienic toilets.

Every day, more than 15,000 tones of rubbish is produced in Hong Kong and more than half of the waste is dumped at landfills by rubbish trucks daily. The waste burden not only puts pressure on landfills, our air quality also suffers too with the number of garbage trucks plying our roads.

Encouraging "Use Less, Waste Less" is a good way to reduce waste at source, but using smart solutions to enhance the efficiency of waste disposal will help alleviate the impact of waste management on our environment.

Making rubbish bin management smarter

There are smart tools to help make this happen now. Smart bins equipped with compressor and various types of sensors linked to a cloud platform can help compress rubbish and thus increase the capacity of a bin. With the capability of remote monitoring of a bin's fullness, rubbish collection can be arranged as when necessary to reduce rubbish truck traffic and roadside carbon emissions.

The bins' sensors for detecting objects and heat can also help ensure safety by stopping rubbish compression when a hand is detected, or alert facility management when a bin's interior temperature goes up, indicating the content will soon or already on fire.

智能方案有助管理洗手間衛生

針對令人詬病的公共洗手間衛生問題，政府早前確定撥款5億港元，翻新200個公廁。全城亦應響應，引入科技提升公共洗手間的衛生管理。

保持洗手間清潔有賴人力資源，目前市面上已出現包含傳感器及物聯網的科技應用方案，有助減低人手需求。透過智能裝置，公共設施的管理單位可收集每個洗手間的使用率、消耗品用量及洗手間的異味水平等，並根據這些數據制定更有效率的衛生管理方案，在有需要時才指派人手執行清潔任務。

這種裝置的傳感器功能多元，既可點算使用人數，亦可監測空間內的阿摩尼阿水平或是否需要添加洗手液及衛生紙等消耗品，所有資訊透過網絡傳送至雲端平台，透過平台管理單位便可對情況一目瞭然。而且裝置簡單，保養費用有限，正正反映智慧城市應用方案簡單易用、成本效益高的優勢，有助城市照顧好市民最基本的需要。

其實，一貫以來對人手需求殷切的服務場所，例如商場、主題公園及學校等，都應該審視如何利用科技應用方案加強營運效益，打造更貼心的服務，提升營運業績之餘，亦有助為大眾帶來更優質的生活。

Keeping toilets clean and user-friendly

As the government has earmarked HK$500 million to refurbish 200 of Hong Kong's public toilets, it's also time to look at how to leverage technology to keep toilets in public facilities clean too.

Maintaining toilet hygiene is a labour-intensive task. Now, there is a technological solution to help alleviate that workload. By using sensors and IoT-powered smart hygiene solutions, facility management can gain big data on toilet usage rates, consumable depletion level and stink monitoring. With the information, facility management can implement a clean-on-demand strategy to deploy manpower more efficiently.

Sensors can be used to count the number of users and monitor ammonia level or whether soap and toilet paper need to be refilled. All the information is sent to a cloud dashboard for one-stop monitoring by facility management. Installation of these devices is simple and the maintenance cost is minimal. That's the point of smart city solutions – simple, user-friendly and cost-effective, to support one of our most basic needs.

All suppliers of traditional labour intensive services and high traffic areas such as public facilities, malls, theme parks and schools should explore how they can leverage such technology to derive various benefits and deliver more personalised services. This will ultimately contribute to the bottom line and bring benefits to the community as a whole.

如何運用超大3D數據打造智慧機場?

How to Use Massive 3D Datasets to Build Smart Airport?

資訊時代，最不缺乏的是數據，而最難運用的也是數據。如何發掘超大三維（3D）數據的價值，令其與物聯網（IoT）實時結合，至今仍是業界的難題。

我們正與多個國際機場合作，希望利用激光掃描獲取的點雲數據（point cloud data），為機場管理系統升級。它不單能靜態展示，更可結合IoT技術，實現多平台、3D化、智能化管理。同時，機場日後擴建及維護，打造3D規劃平台，滿足不同數據形式編輯、融合及統一之需求，最終實現機場建立「數碼分身」（Digital Twin），打造智慧機場。

優立「全息沙盤」展示機場3D模型

優立曾為某國際機場制定了一套覆蓋機場及飛機的模型，並在優立「全息沙盤」（Hologram Table）上展示。模型可查看不同時段飛行情況。點擊特定模型時，可顯示如飛機型號、航班、出發地、目的地等資訊。

優立Hologram Table是全球首個多人互動的全息沙盤，其全部模型均基於真實數據掃描，直接轉換成3D景象展示於桌面，更可自由編輯、互動。

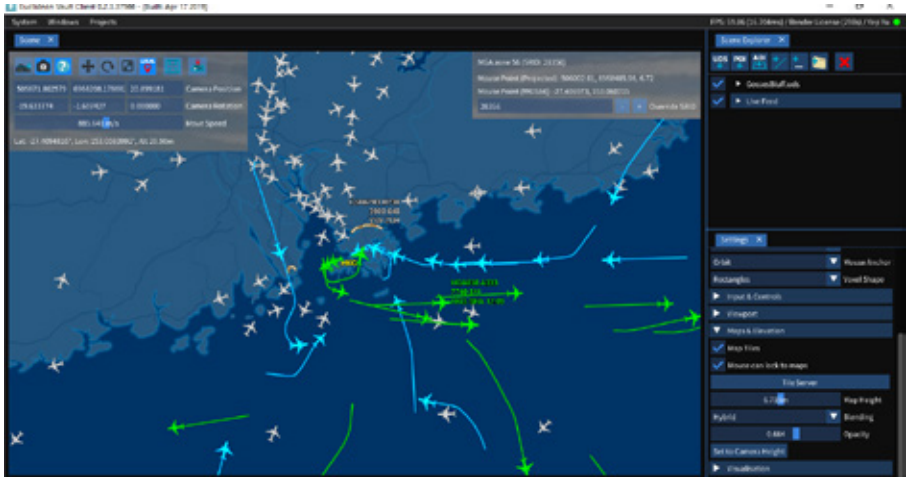
In the information age, "data" is the last thing that can be missed but the most difficult thing to use. How to make full use of massive 3D data collected and connect to internet of things (IoT) is still a big challenge.

We have been working with many international airports which expect to upgrade airport management system based on a bunch of point cloud datasets obtained by laser scanner. More than static display, the system was also expected to integrate with IoT technology for multi-platform, 3D visualized and intelligent management, which ultimately make Digital Twin possible.

Airport 3D Model Shown on Euclideon Hologram Table

We have customized a model for an airport covering both airfields and aircrafts which can be displayed on Euclideon Hologram Table in a 3D way. By clicking specific aircrafts models, information such as flight number, departure and arrival will be displayed chronologically.

Euclideon Hologram Table is the world's first multi-user Hologram Table designed to display fully interactive 3D Hologram models of almost anything you can imagine. All models shown on the table are converted directly from laser scan or polygon data. Users may conduct design and planning and interact on the table.



實時飛行定位系統

在機場靜態模型展示基礎上，透過應用編程介面（API）接入優立Vault系統，連接機場IoT訊息，實時監控飛機運行狀態，可做到緊急應變、飛行規劃、機場管制等日常運營功能，初步實現智能化管理。

機場數碼分身

「數碼分身」源於航空飛行器的維護與保障，透過採集機場建築及設備的3D數據，經優立Vault管理系統處理，將可實現真正意義上的「數碼分身」。

飛行管理方面，首先通過IoT的傳感器與飛機真實狀態完全同步，建立真實飛機模型，實時監控飛行狀態。每次飛行後，更可根據現有及過往記錄，及時評估是否需要維修或可否應對特殊情況等。

機場管理方面，自此可集中數據管理，工作人員可直接運用之前無法使用的超大量數據，並與服務供應商共享，令原有項目的維護及新項目的管理變得更加有效。

對公眾而言，完全智能化的機場體系方便旅客隨時查看各方面的資訊及計劃行程，例如在接機大樓可實時查看親友的飛行狀況，而高度透明、直觀的系統讓旅客倍感安全。

未來擴建規劃

無論機場抑或其他建築、交通鐵路規劃，運用超大點雲數據管理技術，可將2D的BIM設計方案疊加實景3D數據，在全息環境中預覽擴建後的效果，毋須親臨現場已可檢視工地情況等，節省時間和人力。

建設智慧機場或智慧城市，發揮超大數據價值是關鍵。但由於精密的3D數據非常龐大，難以儲存、運行、分析或展示，對硬件配置要求高，造成費用高昂。優立作為全球唯一不依靠高配置硬件，可以實現無限3D數據快速加載、管理及全息技術的先行者，期望與各行業專家交流分享最新的解決方案。

Real-Time Flight Positioning System

Other than static model display, the system will also connect airport IoT Information through Euclideon Vault by mean of application programming interface (API). The Real-time Flight System with functions of flight monitoring, flight planning, emergency response and airport control makes rudiment of an intelligent airport apparent.

Airport Digital Twin

At the very beginning, the concept of Digital Twin was raised based on the maintenance and protection of aviation aircraft. By processing point cloud datasets, a real sense of Digital Twin can come true.

For flight management, firstly an authentic model was built according to real-time IoT sensors data to monitor flight status. After each flight, the aircrafts condition can be assessed in time according to records to measure if maintenance services are needed.

For airport management, centralized data allows staff to instant access large-scale point cloud data that was previously unable to use, enabling data sharing between internal departments and external service providers, making project management much more effective.

For public services, the intelligent airport system allows passengers to view all aspects of information and plan their trips any time. A highly transparent and intuitive system also bring passengers' sense of security. For example, people can check the real-time flight status of their friends in arrival hall.

Future Expansion Plan

3D data management technology enables a preview of constructing airport expansion or city planning, railway expansion, building design in a real-world environment by connecting 2D BIM design to 3D point cloud data. This will also save time and manpower for onsite measurements.

Exploring the value of large-scale data is the key to build a smart airport or smart city. However, since large datasets processing usually requires high power equipment, it will incur additional high costs. As the only company in the world with unlimited high-speed 3D data processing technology loading TB data just in a second and the pioneer of holographic technology without relying on high-configuration hardware, Euclideon is looking forward to sharing the latest solutions with experts from all over the world.

香港電訊實行「智慧出行」新一代的停車收費錶系統

HKT to Deploy a Smart Mobility Initiative The New Generation of Parking Meter System for Hong Kong

隨著時代進步，科技日新月異，推動更多創新意念，締造香港邁向智慧城市。企業進行數碼轉型已是大勢所趨，助企業打開更多機遇。有研究報告更指出，超過八成企業認為如果不進行數碼轉型，就會欠缺競爭力及被市場淘汰。技術發展越來越快，數碼轉型已是無可避免的必然趨勢。

香港政府在2017年尾公布《香港智慧城市藍圖》，推出一系列措施引入更多創科應用，致力將香港構建成世界級的智慧城市。新一代停車收費錶系統為《香港智慧城市籃圖》下「智慧出行」的其中一個主要項目。

Today's exciting new developments in technology are encouraging more innovative initiatives to make our city smarter. Enterprises are also committed to investing in their digital transformation to stay competitive and open up new business opportunities. In fact, some research reports suggest that as many as 80% of enterprises today believe that if they do not carry out digital transformation, they will lose their edge and end up being eliminated by the market. Digital transformation is an inevitable trend, and it too is developing at an ever-increasing pace.

In late 2017, the Hong Kong Government initiated a new Hong Kong Smart City Blueprint, and it has since adopted a series of increasingly innovative applications in its efforts to turn Hong Kong into a world-class smart city. The new generation parking meter system is one of the Smart Mobility initiatives set out in the Smart City Blueprint for Hong Kong.

提升泊車體驗

過去數年，香港電訊已參與了智慧城市發展項目，為政府場地設計及提供Wi-Fi 設施；亦成功為不同企業實踐數碼轉型，包括為商場開發全港首個智能泊車服務。

最近香港電訊夥拍泊車方案供應商Flowbird，獲運輸署批出兩份合共總值超過港幣6.8億元的合約，為署方設計、部署及管理新一代的停車收費錶系統。合約旨在為香港駕駛者提供一個智能路面泊車系統，及提升城市管理的效率。

創新思維

新停車收費錶系統將會配備一個專為駕駛者而設的流動應用程式，並設有車輛感應器以偵測停車位是否已被使用。駕駛者可透過該程式，取得泊車位的實時資訊。同時，駕駛者亦可以多種付費方式繳付泊車費，及透過該程式遙距續購泊車時間，提升泊車體驗。新系統將會完全整合及連結，方便管理。此外，該系統亦會收集泊車數據，協助運輸署進行泊車的分析，取得的結果有助增強城市泊車管理及規劃。

Improved parking experience

Over the past few years, HKT has participated in numerous smart city development projects, including to design and provide Wi-Fi facilities for many government venues. We have also enabled the digital transformation of a wide variety of different companies, such as developing the first Smart Parking service in Hong Kong.

Recently, HKT and Flowbird, a solution provider in parking and ticketing systems, were awarded two key contracts by the Transport Department to design, deploy and manage a new generation, 'smart' parking meter system for Hong Kong. The idea is to provide a smart on-street parking system for motorists in Hong Kong and enhance the overall effectiveness of city parking management.

Innovative thinking

In this new parking meter system, a mobile app will be designed for the motorists. There will be vehicle sensors to detect the occupancy of parking spaces and motorists can use the mobile app to obtain real-time information on parking vacancy. They can also pay parking fees with multiple payment means and top-up payment remotely through the mobile application, taking parking convenience to the next level. The new system will be integrated and connected for maximum ease of management. The system also helps collect parking data for the Transport Department to conduct parking analysis. The insight obtained can enhance city parking management and planning.

The scope of the contracts includes the provision of a total parking-meter solution including the design, development and installation of the new generation of parking meters, as well as the management, operation and maintenance of the system. The new parking meters will replace the existing parking meters in Hong Kong Island, Kowloon and the New Territories in phases and is set for completion by early 2022.

Mr. Tom Chan, Managing Director, Commercial Group, HKT, Ms. Kwok Wai-ying, Candy, Assistant Commissioner, Management & Paratransit, Transport Department, and Mr. Bertrand Barthelemy, Chief Executive Officer of Flowbird, at the signing ceremony.

香港電訊商業客戶業務董事總經理陳紀新先生、運輸署助理署長（管理及輔助客運）郭惠英女士，以及Flowbird行政總裁Bertrand Barthelemy出席簽署儀式。

合約內容涵蓋提供整套停車收費錶方案，包括設計、開發及安裝新一代的停車收費錶，以及管理、營運及維修該系統。新的停車收費錶將分期取代香港島、九龍及新界區的收費錶，並於2022年初全面完成。

香港電訊商業客戶業務董事總經理陳紀新先生表示：「我們很榮幸成為運輸署的智慧城市夥伴。我們會連同Flowbird為香港設計一個智能電子停車收費錶方案，有效推動智慧城市管理及為香港市民帶來一個全新的路面泊車體驗。」

邁向一個更智慧的城市

陳先生續稱：「香港電訊一直致力協助香港發展成為一個更智慧的城市，及協助企業進行數碼轉型。我們於過去5年在資訊及通訊科技及數碼方案投入大量資源。我們將繼續利用最新技術開發創新產品，如5G、物聯網、人工智能、大數據、雲端以及最新網絡安全解決方案，以促進香港的發展。」

開發整個生態系統以促進變革

「香港電訊擁有固網、流動網絡、無線網絡、優質的雲端平台，具備經驗豐富的專業團隊，再加上與不同科技範疇的技術夥伴合作，形成一個穩固的生態系統，令我們擁有助企業加速數碼轉型的能力及獨特地位。」

Mr. Tom Chan, Managing Director, Commercial Group, HKT, said, "We are honored to be a smart city partner of the Transport Department. Together with Flowbird, we will design an intelligent electronic parking meter solution for Hong Kong, enabling effective smart city management and bringing a new on-street parking experience for Hong Kong people."

Towards a smarter city

Mr. Chan added, "At HKT, we are very committed to helping accelerate Hong Kong in becoming a smarter city and empowering digital transformation for enterprises. We have been investing in advanced ICT and digital solutions over the last five years; and we will continue to develop innovations using the latest technologies such as 5G, internet of things (IoT), artificial intelligence (AI), big data, the cloud and new cybersecurity solutions to empower the development of Hong Kong."

Developing entire eco-systems for change

"HKT has a unique position in fixed, mobile and wireless networks as well as high quality cloud platforms. We also have a strong team of experts and elite partners, that enable us to form entire ecosystems which offer solid advantages for enterprises hoping to expand into new markets and new businesses."

About Us 關於

Smart City Consortium (SCC)
智慧城市聯盟

The Smart City Consortium (SCC) comprises a group of professionals from different corporations and organizations with the aim to provide opinions and suggestions to the Government for formulating related policies and standards in the development of Hong Kong as a world-class smart city. We encourage worldwide collaboration with different stakeholders to create the right ecosystem, which fosters innovation and sustainable economic growth for Hong Kong.

智慧城市聯盟（SCC）匯聚一群來自不同公司和機構的專業人士，為香港發展成為一個世界級的智慧城市，在政策和標準層面提供專業意見和建議。我們鼓勵與全世界不同的持份者合作以創造合適的生態系統，促進香港創新及經濟的可持續增長。

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SMARTER CITY
SMARTER HONG KONG

Smart City Consortium
Room 302, Tuspark, 118 Wai Yip Street,
Kwun Tong, Kowloon, Hong Kong
智慧城市聯盟
香港九龍觀塘偉業街118號
香港啟迪科技園3樓302室

Email: info@smartcity.org.hk
Tel: (852) 3480 4230
Fax: (852) 3020 8812
www.smartcity.org.hk