SMART
VISION 智城

啟動國際物聯網標準
促進創科健康發展

**LAUNCHING INTERNATIONAL
IOT STANDARDS
PROMOTES A HEALTHY DEVELOPMENT
FOR INNOTECH**

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

LS51 LSGI DEPARTMENT OF LAND SURVEYING AND GEO-INFORMATICS
土地測量及地理資訊學系

2020/21年度 理學碩士學位 / 深造文憑

❶ 測繪及地理資訊學 (測量/地理資訊)

- 專業資格認可 RICS chartered ices H K Inst E.S.
- 多年來培育測量及地理資訊科技專才

❷ 城市信息學及智慧城市 NEW!

- 全港首個城市信息學及智慧城市碩士課程
- 全球重點發展智慧城市相關範疇，如物聯網、大數據分析、人工智能等

(((• 不同政府部門、公共事業及私營機構均有熱切的人才需求，畢業生亦可於本港或海外知名大學升讀博士課程。

申請方法

網上申請： https://www38.polyu.edu.hk/eAdm/index.jsf (Study@PolyU)

截止日期： 2020年4月30日

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課程資料： 測繪　地理資訊

歡迎跨專業人士申請

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物聯網（internet of things，簡稱IoT）在智慧城市發展中潛力極大，其應用層面亦非常廣闊，遠至城市管理、近至智能家居，以至都市人生活的大小事務上，物聯網都能為人們帶來便利，因此近年在世界各地迅速發展，有望未來普及至各個行業，更為社會帶來龐大的經濟效益。物聯網的應用配合大數據，可以說是一種「先加後減」的概念：首先透過感應器收集城市數據，再利用人工智能（AI）就著特定需要，將數據轉化為有意義的資訊及解決方案，從而提高城市管理的成效。

智慧城市聯盟副會長、物聯網科技委員會主席曾劍鋒博士工程師正致力為電機電子工程師學會（IEEE）就訂立國際物聯網的標準進行深入研究。他認為物聯網配合未來的5G技術，加速萬物互聯，在生活上能發揮更巨大的效益。但在目前的發展階段，物聯網仍有許多需要各方協作改良之處，才能消除大眾對其安全性、私隱保障等疑慮，讓科技的革新得以促進人們的生活。要突破限制，需要從本地物聯網技術相關法規、監管機構指引，以及教育等三方面入手。具體

Internet of things (IoT) has great potential in the development of smart city. It can bring convenience to people with very board application scope, from city management to smart homes, and all kinds of things in urban life. Therefore, it has developed rapidly in various parts of the world in recent years, and is expected to be widely applied to various industries in future, bringing huge economic benefits to society. The application of IoT with big data is to "add first and then subtract": first of all, to collect numerous city data through smart sensors, and then use artificial intelligence (AI) to transform the data into insight and solutions, so as to improve the effectiveness of city management.

Vice President of Smart City Consortium, Chairman of IoT Committee, Ir. Dr. Kim-fung Tsang is currently engaged in an in-depth research on the establishment of the International IoT Standards for the Institute of Electrical and Electronics Engineers (IEEE). He believes that IoT, when used in conjunction with 5G technology in the future, will accelerate the interconnection of all things in life. It will also bring great economic benefits. However, IoT still requires many parties to work together for further improvement at the current stage, in order to address public's concerns on its security and privacy protection, so that technological innovation can be widely adopted for improving people's living qualities. The improvements needed include three measures, namely local IoT technology-related regulations, the guidance of regulatory

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而言，物聯網需要具公信力及可信性的統一規範，以及專責監管的公營部門，使服務供應商在清晰指引和標準，以及完善的監管之下健康發展；並透過教育宣傳，讓公眾建立對物聯網技術應用的信心與期望。

此外，近期政府發布了《2019年施政報告》，聯盟歡迎報告中重申透過創新科技應用優化智慧城市服務，改善市民生活；以及多項有助智慧城市建設、促進經濟發展、深化創科支援的措施。回望過去一年，聯盟積極為香港智慧城市發展拓展機遇，透過大大小小的研討會、展覽會和出版刊物，與政府、業界，以及普羅大眾緊密聯繫。

展望未來，聯盟期待來年公布的《香港智慧城市藍圖2.0》，為香港智慧城市的未來發展提供更多機會和支援。聯盟將繼續與政府緊密合作，發展更以人為本的智慧城市！

institution and relevant education to the general public. To be specific, we need a unified IoT standard with credibility and reliability, as well as a dedicated statutory body for unifying these standards to supervise and guide its application in technical services. Promotion and education are also much needed to build up the confidence and acceptance of IoT by the public.

The government recently issued the *2019 Policy Address*. SCC welcomes the solutions mentioned in the report aiming to optimize the services of smart city through the application of innovative technologies and improve the lives of citizens; and a number of measures to help smart city construction, promote economic development, and deepen innovation and technology support. Looking back over the past year, SCC has actively expanded opportunities for the development of smart city in Hong Kong. Through various seminars, exhibitions and publications, it has been in close contact with the government, the industry and the general public.

Looking ahead, SCC looks forward to the *Hong Kong Smart City Blueprint 2.0* announcement in the coming year, which will provide more opportunities and support for the future development of smart city in Hong Kong. SCC will continue to actively work with the government to develop a more people-oriented smart city!

Comments from Smart City Consortium on the
2019 Policy Address

智慧城市聯盟對
2019年度施政報告的意見

《2019年施政報告》已於今年10月公布，智慧城市聯盟歡迎報告中提及積極透過創新科技應用優化智慧城市服務，改善市民生活；更推行多項深化創科支援的措施，有助智慧城市的建設，促進經濟發展，藉此提升香港的競爭力。

過去兩年，政府大力發展創新及科技事業。根據投資推廣署和政府統計處最新的年度調查，自2017至今，初創企業增加42.8%，達3,184間，主要遍布電腦資訊及科技行業，如金融科技、電子商貿與供應鏈管理及物流科技等。

交通與市民每天生活息息相關，聯盟相信《施政報告》提出聯同運輸署開發「交通數據分析系統」，以分析各類實時數據，迅速在事故處理和資訊發放方面作出應變等，能讓市民大眾出行和生活更有預算，令人切身感受到智慧城市發展的裨益。而運輸和物流直接影響經濟活動，《施政報告》提出預留10億元成立智慧交通基金，及研究推行先導資助計劃，鼓勵物流業通過應用科技提高生產力，均會令廣大市民受惠。

The *2019 Policy Address* was announced in October this year. Smart City Consortium welcomes the report's commitment to actively optimize smart city services through innovative technology applications to improve the quality of lives. It also promotes a number of measures to deepen the support to science and technology which will benefit the construction of smart city, so as to promote economic development and thereby enhance Hong Kong's competitiveness.

In the past two years, the government has vigorously encouraged innovation and technology. According to the latest annual survey by Invest Hong Kong and the Census and Statistics Department, the number of local startups has increased by 42.8% to 3,184 since 2017, which are mainly in the computer information and technology industries such as FinTech, e-commerce, supply chain management and logistics technology, etc.

Traffic is closely related to the daily life of citizens. The Policy Address proposes to jointly develop a new Traffic Data Analytics System with the Transport Department to analyze various real-time data and quickly respond to incident handling and information dissemination. SCC believes this measure can help the public cope with future situations with accurate and updated information.

Considering the direct impact of transport and logistics on economic activities, the Policy Address proposes to set aside $1 billion for the establishment of the Smart Traffic Fund, and explore the introduction of a pilot subsidy scheme to encourage the logistics industry to enhance its productivity through the application of technology. These are all good news well-received by the public.

建設智慧城市需足夠的創科能力支撐，聯盟歡迎《施政報告》中多項支援本地科研的措施，如將「科技人才入境計劃」擴闊至5G通訊、物聯網、數碼娛樂、綠色科技等範疇，並覆蓋至全港有進行指定科技研發活動的公司；以及擴大「公營機構試用計劃」資助範圍，讓全港所有進行研發活動的科技公司受惠，都有利科研發展。

《施政報告》中提及的優化智慧城市服務措施，包括引進機械人科技改善公共服務、自動化處理各類政府表格及市民查詢、以科技改善涉及申請及批核的政府服務，加上計劃建立「智方便」（前稱「數碼個人身分」）平台，提供一站式個人化數碼政府服務。這一系列舉措不單可提升城市管理，亦便利市民。

在智慧醫療上亦有不少大躍進，如推行智慧醫院措施，包括研究以流動及物聯網技術設置具實時數據基礎的智慧病房、加強統籌醫院服務及病人分流的病人服務協調中心，用機械人提供物流支援；提升其數據實驗室，並且於2019年年底前推出大數據分析平台，支援與醫護有關的研究項目，有利醫學研究之用。此一系列的新措施均是聯盟所樂見的。

政府公布的首份《香港智慧城市藍圖》已經是兩年前的事，聯盟期待於明年公布的《香港智慧城市藍圖2.0》，檢討政府各項措施的最新進展，以及展示未來規劃方向；聯盟將透過我們的網絡，收集業界就智慧城市未來發展的見解，匯集成意見書向政府提交，繼續扮演業界和政府溝通橋樑的角色，並積極支持政府發展以人為本的智慧城市！

Building a smart city requires considerable supports from the IT industry. SCC welcomes the various measures in the Policy Address to deepen the support of R&D activities in Hong Kong, such as the expansion of the Technology Talent Admission Scheme to 5G communications, IoT, digital entertainment and green technology, etc., covering all technology companies which conduct R&D in the designated technological area. Together with the expansion of the Public Sector Trial Scheme which provides funding support for all technology companies to commercialize R&D results, these measures will facilitate and promote the R&D activities in Hong Kong.

The optimization of smart city service measures mentioned in the *Policy Address*, including the introduction of robotics to improve public services, the automatic processing of various government forms and public enquiries, the upgrading of government services involving applications and approvals, as well as the establishment of an "iAM Smart" (formerly known as Electronic Identity; eID) platform which provides one-stop personalized digital government services are in progress. These series of initiatives not only enhance urban management, but also benefit the citizens.

There are also many great leaps forward in smart healthcare, such as the implementation of smart hospital measures, including the smart wards with real-time databases based on mobile and IoT technologies, patient service coordination centers to strengthen the coordination of hospital services and patient diversion, and robotics providing logistics support; upgrading its data labs and launching a big data analytics platform by the end of 2019 to support research projects related to healthcare for medical research purposes. This series of new measures is what SCC is happy to see.

The *Hong Kong Smart City Blueprint 1.0* was announced by the government two years ago. SCC looks forward to the announcement of the *Hong Kong Smart City Blueprint 2.0* next year, for reviewing the latest developments in government measures and launching future planning directions. SCC will, as usual, act as a bridge between the industry and the government by collecting the industry's comments and submitting them to the government after consolidation. SCC will continue with active cooperation with the government, in order to develop a people-oriented smart city!

Launching **International IoT Standards** Promotes a **Healthy Development for Innotech**

啟動**國際物聯網標準** 促進**創科健康發展**

全球多國正致力發展智慧城市，其中感應器（sensor）及物聯網（IoT）是不可或缺的技術。物聯網發展漸趨成熟，隨着5G推出，預料數以億計感應器將廣泛應用於汽車、樓房、能源、數據中心等市場。與此同時，為提高業界水平及應用相關技術的安全性，政府近年致力推動香港創科發展，並希望這些成果能在國際上發揮一定影響力。

物聯網雖然發展迅速，不過如何量化智能裝置與物聯網方案的效能及安全性，國際間目前尚未有統一標準。今期《智城》邀請到智慧城市聯盟副主席、物聯網英雄榜2016得獎人、「IEEE P2668物聯網成熟度指數」主席曾劍鋒博士工程師接受訪問，講解香港物聯網最新發展現況，更分享今年於香港正式啟動的國際物聯網標準——IEEE P2668「物聯網成熟度指數」（IoT Maturity Index，簡稱IDex）。

Many countries around the world are striving to develop smart cities, for which sensors and internet of things (IoT) are fundamental. The development of the IoT is gradually maturing. With the launch of 5G, it is expected that hundreds of millions of sensors will be widely used in markets such as vehicles, buildings, energy and data centers. At the same time, in order to uplift the industry performance and the safety of technological applications, the government has committed to promote the development of Hong Kong's innovative technology in recent years, with the hope that Hong Kong can attain an international significance.

With the wide applications of IoT, however, there is currently no unified standard for quantifying its effectiveness and security of smart devices and solutions. *Smart Vision* has invited Vice President of Smart City Consortium (SCC), Winner of IoT Heroes Awards 2016, President of IEEE P2668 IoT Maturity Index, Dr. Kim-Fung Tsang (KF), to explain the latest IoT developments in Hong Kong, and to share his view about the international IoT standard - IEEE P2668 IoT Maturity Index ("IDex") which was officially launched earlier this year.

大力發展物聯網支援長者

現時物聯網技術滲透各行各業，最常應用於智能家居，而穿戴式裝置如智能手錶、智能眼鏡，與智能泊車和智能廢物處理一樣，是智慧城市發展的主要推動力。曾劍鋒指出香港在發展物聯網技術的同時，需考慮人口結構現況和未來需要，作出相應的對策，以物聯網科技有助解決日益嚴峻的人口老化等人口結構問題。

按政府統計處數據，二十幾年後，每三人之中便有一人是65歲以上的長者。針對香港社會現況，曾劍鋒建議未雨綢繆，加大力度發展物聯網。如射頻識別手帶可追蹤長者實時位置，幫助患腦退化症長者的家人尋回失蹤者；手帶亦可內置感應器，定時量度長者生命徵象如心跳和血壓等，再傳送至雲端系統；若身體出現異常情況，可即時連接如平安鐘等緊急系統作出求救，確保獨居長者的安全。可是，新興科技帶來更便利及美好未來的同時，也帶來安全的隱憂。

曾劍鋒指出：「這些支援長者的科技應用固然好，但始終涉及個人私隱及訊息安全，需要由政府訂立相關網絡安全法規，保障私隱，並確保資料在安全情況下流通及使用。」

他建議可參考歐盟《通用資料保護規則》（General Data Protection Regulation，簡稱 GDPR），其中嚴格規範網

IoT Development Supporting the Elderly

At present, the IoT technology penetrates various industries and is most commonly used in smart home. Wearable devices such as smart watches and smart glasses are also the main driving force in line with smart parking and smart waste management in the development of smart city. KF pointed out that while developing the IoT technology in Hong Kong, it is necessary to consider the current population structure and future needs, making proactive measures, so that IoT technology can help solve the ageing and other population demands.

According to the Census and Statistics Department, one in three people will be an elderly age 65 or above within 20 years. In view of the current situation in Hong Kong, KF suggested a better use of the IoT to tackle the issues. For example, the RFID wristband can track the elders' real-time location to help locating missing elders with dementia. The wristband can also have a built-in sensor to measure periodically the vital data such as heartbeat and blood pressure, and then sending them to the cloud system for monitoring; when unusual situation is detected, it can immediately call for help through an emergency system. It will greatly help the elderly who live alone. Emerging technologies can not only bring a more convenient and fabulous future vision, but also create security concerns at the same time.

絡公司對個人資料蒐集的用途與管理。雖然訊息安全問題在香港尚未掀起廣泛關注，但隨著物聯網裝置和應用領域的拓展，一般使用者也會更頻繁地接觸到相關議題，網絡安全定必越趨重要。

訂立IEEE物聯網標準 量化裝置績效

曾劍鋒表示，現時國際間並沒有任何廣受認可的物聯網標準，正處於群龍無首狀態，不少開發商只能隨便參考行家標準，那如何量化物聯網科技的成效？加上相關設備如感應器等，生產商並無任何指示及規定可作根據，令物聯網設備的安全性、兼容性、準確性等成疑。為保障消費者，以及完善物聯網科技的發展生態，訂立國際間具公信力及可信性的統一標準，有著舉足輕重的重要性。

因此，曾劍鋒提出訂立國際物聯網標準——IEEE P2668「物聯網成熟度指數」（IDex）。此項目於2018年獲國際電機電子工程師學會（IEEE）審批，更於2019年8月舉辦的「智慧城市感應器及物聯網標準會議」啟動儀式中，由IEEE宣布正式啟動。IEEE是一個國際性電子技術與電子工程師協會，亦是世界上最大的專業技術組織，擁有來自超過160個國家共42萬名會員，目前IEEE所制定的標準在工業界有著極大影響力。而今次IDex是由香港團隊制定，交由IEEE標準協會確立為國際標準。對於本港成為全球首個訂立國際標準IDex的

"These applications that support the elderly are good, but they always involve personal privacy and information security issue. The government need to establish regulations related to cybersecurity to protect personal privacy and ensure that data is distributed and used in a secure manner," said KF.

He also suggested Hong Kong to refer to the General Data Protection Regulation (GDPR) of the European Union, which mandates the practice and management of personal data collection by online companies. Although the issue of information security has not aroused much concern in Hong Kong at present, general users will one day become more aware of the privacy issues accompanying increased use of IoT in related fields, and network security will become more and more important.

Establishing IEEE International IoT Standard

KF said that currently there is no broadly accepted IoT standards throughout the world. Many IoT developers can only refer to proprietary standards. How to quantify the effectiveness of IoT technology? The manufacturers of IoT devices such as sensors have no code of practice or regulations to follow, making the security, compatibility, and accuracy of IoT devices questionable. In order to protect consumers and improve the technology development ecology of the IoT, it is of great importance to establish an internationally unified standards of credibility.

Therefore, KF proposed the establishment of an international IoT standard - IEEE P2668 Internet of Things Maturity Index (IDex). This project was approved by the International Institute of Electrical and Electronics Engineers (IEEE) in 2018, and was officially launched by the IEEE at the launching ceremony of the Smart City Sensor and IoT Standards Conference held in August 2019. IEEE is an international association with electronic technology and electronic engineers, and the largest technical professional organization in the world. It has a total of 420,000 members from more than 160 countries. At present, the standards formulated by IEEE have great influence in the industry. This time IDex was developed by the Hong Kong team and approved by the IEEE Standards Association to establish it as an international standard, to make Hong Kong the first region in the world to announce the newly-established international standard IDex. KF pointed out that smart sensor standard interface IEEE 1451 has been around the world for 10 years, the new IEEE P2668 is expected to become the best practice in the industry.

KF indicated that IDex has established criteria based on different industry parameters, public spectrum and tests mainly for assessing performance of IoT devices and sensors with a maximum score of 5. It aims to help the industry assess their performance and provide companies with a reference to select safe, reliable and suitable suppliers and effective risk management. The IDex evaluation criteria include: delay, power consumption, overall scheme, probes, use and management processes, etc. which are reviewed by at least 20 different expert groups.

"The standards set by various industries focus on different aspects. For example, in the field of medical equipment, special emphasis on time delays and accuracy is essential; household equipment, however, focuses on power consumption. The requirements of the industrial and the consumer IoT are different." KF explained.

地區，曾劍鋒指出，智慧感應器標準介面IEEE 1451在全球通行已有10年，現配合訊息安全的相關發展，IEEE P2668有望成為業界最佳實踐範例。

IDex通過不同行業參數、公譜及試驗訂立準則，主要為物聯網裝置和感應器的表現評分，5分為最高，以讓業界了解它們的效能表現，供企業參考以選用安全可靠、合適的供應商，並作有效風險管理。IDex由至少20個不同界別的專家組進行評審，而評審標準包括：時延、功耗、整體方案、探測器、使用及管理過程等。

曾劍鋒解釋：「各行各業所訂立的標準都有不同，如醫療設備方面，需特別著重時延與準繩度；家居設備則著重功耗等，換言之，工業物聯網與消費者的要求各有不同。」

IDex目前已成立超過20個專家組，雲集來自本港、澳洲、美國和瑞典等地的專家團隊為不同行業訂立機制及標準，預期樓宇、運輸、製造及通訊業的機制及標準將會率先推出，而制定醫療和健康相關行業的標準則需時較久。

曾劍鋒形容IDex是物聯網界的「米芝蓮」，為消費者和企業購買物聯網設備和方案時提供評分參考。他認為，小組在未來兩年將有大量工作，因此或有更多不同範疇專家加入評審。初步評估，現時國際上大部分公司的相關設備和方案都僅能獲5分中的2至3分。

與多間機構公司合作試驗 望促行業良性競爭

現時IDex工作小組正與智慧城市聯盟、政府部門如政府資訊科技總監辦公室和機電工程署等，以及多間公司，包括科學園和數碼港區內的初創企業、中國廣東惠州潼湖生態智慧區、中國移動香港、碧桂園、華為、中興通訊和跨國企業如GS1等，合作研究，並就進行IDex標準測試，曾劍鋒希望

IDex has currently established more than 20 expert groups, with teams of experts from Hong Kong, Australia, the United States and Sweden to establish mechanisms and standards for different industries. It is expected that the mechanisms and standards for the building, transportation, manufacturing and communications industries will be launched first. Standards for medical and healthcare-related industries will need a longer time for preparation.

KF described IDex as the Michelin of the IoT industry which provides a score reference for consumers and businesses to select IT devices and solutions. He expects that the working team will have a lot of work in the next two years, and more experts from different fields may join. According to the preliminary assessment, it is believed that the existing equipment and solutions of most companies worldwide can only be rated as 2 to 3 in a scale of 5.

Cooperation Promotes Healthy Competition

The IDex working group is currently collaborating with the SCC, government departments such as the Office of the Government Chief Information Officer (OGCIO) and Electrical and Mechanical Services Department (EMSD) as well as a number of companies, including startups in the Science Park and Cyberport, and the Tonghu Ecological Smart District in Huizhou of China, ZTE Corporation, China Mobile, Country Garden, Huawei and multinational companies such as GS1 in the research and formulation of standard tests. Currently IDex is still in the experimental stage, KF hopes that it will be officially launched within two years.

The launch of IDex in the future will not only ensure the coordination and unification of the performance criteria of IoT devices, but also provide a point-to-point security reference. It can effectively track the origin of manufacturers, protect consumers and reduce the chance of hacking. In addition, manufacturers can produce to comply with the same standard, which is also conducive to research and development.

IDex可於兩年內正式推出。屆時，不單物聯網裝置績效的協調性與統一性得以確保，更能提供點對點的安全性參考，有效追蹤生產商源頭，保障消費者，並能減低受黑客入侵的風險。此外，製造商可依據同一標準生產，亦有利研發。

「相信IDex國際標準一方面可為業界提供一套客觀的指標以量化物聯網裝置成效，亦有助香港研發相關技術的公司打入國際市場。希望這標準可在全球發揚光大。」曾劍鋒說。

此外，技術研發者能根據IDex評級，比較各種物聯網裝置的績效，選取最切合本身需要的技術。有此標準，揀選物聯網裝置便不論公司規模大小，這既有助吸引市場採用更多由初創企業研發的解決方案，也是初創企業向政府申請資助時的一大保證。曾劍鋒期待此標準能促進行業間的良性競爭，令業界精益求精。而IDex評級亦可每年更新一次，讓企業間有更大動力推出更優秀的物聯網裝置及方案。

未來，智慧城市聯盟將與IDex工作小組有更緊密的合作，積極協助推行IDex在科技業的試驗計劃，期待見證香港成為全球第一個物聯網標準中心，確保物聯網合規性、互通性及網絡的安全性！

"I believe that the IDex international standard can provide the industry with a set of objective indicators to quantify the performance of IoT devices, and also help Hong Kong companies in developing related technologies to access the international market. I hope this standard can be adopted globally." KF said.

In addition, developers can compare the performance of various IoT devices based on IDex ratings and choose the technology that suits them most. With this standard, companies will be rated based on the performance or solution of IoT devices instead of their scale. It can attract users to adopt more solutions developed by startups. It is also a guarantee when it comes to government funding application for startups. Therefore, KF expects this standard to promote healthy competition within the industries. The industry strives to match the index on the standard and strives to reach the upstream. Furthermore, to motivate enterprises to improve their IoT devices and solutions, the IDex rating can be updated once a year.

In the future, SCC will work more closely with the IDex working group to actively assist in the implementation of IDex's pilot program in the technology industry. We look forward to seeing Hong Kong become the world's first IoT standards center to demonstrate IoT compliance, interoperability and network security!

2 0 1 9

12
SEPTEMBER

Belt and Road Global Forum Second Annual Roundtable
一帶一路國際聯盟年度圓桌會議

The Belt and Road Global Forum Second Annual Roundtable was organized by the Hong Kong Trade Development Council at the Hong Kong Convention and Exhibition Centre on 12th September. Mr. Gary Yeung, MH, President of SCC, introduced the work of SCC and the initiative of an upcoming SCC Belt and Road (BnR) Smart City Alliance to about 100 prominent guests from Hong Kong and the Silk Road region. Gary encouraged business acquaintance from BnR smart city sectors to collaborate with Hong Kong partners and use Hong Kong as a business hub.

由香港貿易發展局主辦的一帶一路國際聯盟年度圓桌會議，於9月12日假香港會議展覽中心舉行。智慧城市聯盟會長楊文銳先生代表聯盟在會議上與來自香港和絲綢之路地區約100位重量級嘉賓，介紹聯盟一直以來的工作，以及即將開展的智慧城市（一帶一路）聯盟。他更鼓勵「一帶一路」沿線國家和地區的智慧城市相關企業，與香港合作開展業務。

2 0 1 9

06
OCTOBER

New radio program "Smart People Smart City"
與新城電台合作推出全新節目《創智傳城》

The Metro Broadcast has launched a new radio program "Smart People Smart City" to introduce the latest and forefront applications of innovative technologies to the general public. The program is broadcast every Sunday at 8 pm from Metro Finance (FM104). The radio has invited SCC to jointly organize the program with the theme of "Smart City".

"Smart People Smart City" is co-hosted by Ms. Christine Lam of the Metro Broadcast and Mr. Gary Yeung, MH, President of SCC. The first interview was conducted on 6th October with Mr. Peter Yan, CEO of the Hong Kong Cyberport Management Company Limited, as the guest. The discussion topic was "how innovative technology enhances our daily life".

為了向大眾講解創新科技應用將如何提升生活質素，新城電台逢星期日晚上8時推出全新節目《創智傳城》，並邀請智慧城市聯盟合作訪問嘉賓。第一集節目已於10月6日在新城財經台（FM104）播出，新城電台林淑敏女士擔任主持，與智慧城市聯盟會長楊文銳先生一起訪問香港數碼港管理有限公司行政總裁任景信先生，討論智慧城市發展如何改善市民生活。

2019

29
OCTOBER

2nd Open Data Conference
第二屆開放數據會議

The 2nd Open Data Conference on "Open Data Brings Commercial Benefits -Leveraging Digital Transformation" took place on 29th October at the Hong Kong Productivity Council Building. SCC was one of the supporting organizations. The conference discussed the importance of open data to improve productivity and profitability in economic development driven by innovation technology.

Mr. Gary Yeung, MH, President of SCC attended the conference. Dr. Kenneth Tang, Chairman of Spatial Data Infrastructure (SDI) Committee of SCC and Mr. Emil Chan, Chairman of FinTech Committee of SCC, were the moderators in the panel discussion.

第二屆開放數據會議以「借助數碼轉型──開放數據帶動的經濟效益」為題，於10月29日在香港生產力促進局大樓舉行。會議討論在創科帶動的經濟發展中，開放數據對提高生產力及盈利能力的重要性，智慧城市聯盟是支持機構之一。

智慧城市聯盟會長楊文銳先生作為代表之一出席會議，空間數據基礎委員會主席鄧兆星博士和金融科技委員會主席陳家豪先生則主持部分討論環節。

2019

15
NOVEMBER

Greater Bay Area & Qianhai Innovative Business Seminar
大灣區及前海創新創業研討會

The SCC member gathering this year was organized in Tuspark on 5th November in par with the forum on "Greater Bay Area & Qianhai Innovative Business Seminar". The event was well attended with insightful discussions.

智慧城市聯盟於11月5日在Tuspark舉行會員聚會及「大灣區及前海創新創業研討會」。聯盟成員在席上就創新創業相關議題互相交流，活動最終圓滿結束。

2019

13-17

NOVEMBER

"Hong Kong Smart City Pavilion" in the 21st China Hi-Tech Fair
第二十一屆高交會設置「香港智慧城市展館」

SCC set up a "Hong Kong Smart City Pavilion" in the 21st China Hi-Tech Fair ("Hi-Tech Fair") from 13th to 17th November, with funding support from the HKSAR Government Trade and Industrial Organisation Support Fund (TSF).

This year, the Hi-Tech Fair was held at the Shenzhen Convention and Exhibition Center. Hong Kong Smart City Pavilion exhibited products and services related to IoT, FinTech and information security from 27 Hong Kong enterprises. The Hi-Tech Fair is the largest and most influential technological exhibition in China. It plays a crucial role in promoting economic and technological exchanges between countries and regions.

智慧城市聯盟獲香港特別行政區政府工商機構支援基金（TSF）撥款，於11月13至17日在第二十一屆中國國際高新技術成果交易會（高交會）中設置「香港智慧城市展館」。

今年的高交會於深圳會展中心舉行，香港智慧城市展館展出了27家香港公司有關物聯網、金融科技、訊息安全的產品或服務。高交會是中國規模最大、最具影響力的科技類展覽會，在推動高新技術成果商品化、產業化、國際化，及促進國家和地區間的經濟技術交流與合作，發揮重要的作用。

GreaterBayX Urban Summit

On 14th November, Ir. Dr. Kim-fung Tsang, Vice President of SCC, represented SCC to attend GreaterBayX Urban Summit with the theme as "Urban Innovation Across the Greater Bay Area". Ir. Dr. Tsang was one of the keynote speakers. He exchanged insights on urban technology in the Greater Bay Area.

GreaterBayX Urban Summit以「聯通灣區，創新城市」為主題，在11月14日舉行研討會。智慧城市聯盟副會長曾劍鋒博士工程師代表聯盟出席，並在主題討論中擔任講者，與一眾嘉賓就大灣區的城市科技作深入交流。

2019

14

NOVEMBER

Smart Vision
Your Bridge
to Business

智城 一 為你連繫業界

Join us:

Corporate Membership

Individual Membership

Hong Kong Smart City Pavilion

香港智慧城市展馆

物联网、金融科技、讯息安全

21st China Hi-Tech Fair
第二十一届中国国际高新技术成果交易会 (高交会)

13-17 . 11 . 2019

深圳会展中心1号馆
展位号 Booth No.
1C42

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主办机构:
SCC
智慧城市联盟
Smart City Consortium

Collaborating Organisations:
合作机构:
Cyberport 数码港

iTJC
香港資訊科技聯會
HONG KONG INFORMATION TECHNOLOGY JOINT COUNCIL

Hong Kong Software Industry Association
香港軟件行業協會

Funded by:
拨款资助:
TSF 工商機構支援基金
Trade and Industrial Organisation Support Fund

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智慧城市聯盟物聯網委員會主席
Vice President of Smart City Consortium
Chairman of IoT Committee, Smart City Consortium

Unleashing Hong Kong to Become a Savvy Hub on Standards and Compliance for Internet of Things
讓香港成為物聯網世界標準中心

「物聯網」是指透過「互聯網」將智能感應器與設備連接在一起，提升智能處理，做到準確傳達及全面感知。其應用範圍廣泛，包括智能家居、智能醫療、金融科技、智能物流、環境監控，以至農業及漁業等，都是物聯網的關鍵持份者。

為了推動物聯網真正普及化，我正與智慧城市聯盟、碧桂園、中國移動香港、華為，以及香港特區政府有關部門合作，制定全球物聯網通用標準（IEEE P2668 與 IEEE 1451），以確保物聯網互通性及網絡安全性。我非常期待見證香港成為第一個展示全球物聯網標準的合規性、協調性和互通性的地區！

"Internet of things (IoT)" refers to the connection of smart sensors and equipment through the "internet". IoT proliferates comprehensive sensing, intelligent data processing and accurate communication. Applications are numerous, to name a few, smart home, smart healthcare, FinTech, intelligent logistics, environmental monitoring, agriculture and fisheries, etc. being some key stakeholders of IoT.

To enhance IoT performance worldwide, I am working with the Smart City Consortium, Country Garden, China Mobile Hong Kong, Huawei and departments of the HKSAR Government to develop worldwide IoT standards (IEEE P2668 and IEEE1451) to embrace interoperability of IoT systems and network security. Isn't it amazing to see Hong Kong as the first city in the world that demonstrates IoT worldwide standard compliance, harmonization and interoperability!

陳家豪先生
Mr. Emil Chan
智慧城市聯盟金融科技委員會主席
Chairman of the FinTech Committee,
Smart City Consortium

Hong Kong's Opportunities of Fintech Development

香港金融科技發展機遇

金融科技（FinTech）近年急速發展，將在未來數年重塑金融行業，大大改變現今金融服務業的商業模式，為香港帶來挑戰和機遇。香港金融科技發展早著先機，早在 1997 年便已推出了八達通，加上香港既連接內地市場，也與全球各大金融商貿中心有緊密的聯繫，是傳統金融服務擴展的樞紐。

然而，科技發展一日千里，世界各地都積極爭取成為領先的金融科技中心，香港亦正善用自己在傳統金融業方面的有利條件，及發揮身處大灣區的地域優勢，配合發展人工智能、區塊鏈、雲端運算以及大數據等技術，加上相關的人才培訓，都是香港未來金融科技發展的成功關鍵。

The blooming financial technology (FinTech) in recent years will reshape the financial industry in the next few years. It will also greatly change the business model of today's financial service industries, bringing challenges and opportunities to Hong Kong. As a head start for FinTech development, Hong Kong launched Octopus in 1997. Coupled with the close connection to the mainland market and the major financial and business centers across the globe, Hong Kong has long been a hub for the development of traditional financial services.

With the rapid development of science and technology, other countries in the world are actively striving to become a leading FinTech center. Hong Kong is making best use of its advantages in the traditional financial industry and is utilizing the geographical advantages of being in the Greater Bay Area. We must cooperate in the development of AI, blockchain, cloud computing and big data technologies, as well as related talent training, which are the key to the success of Hong Kong's future FinTech development.

龐博文先生
Mr. Ronald Pong
智慧城市聯盟資訊科技管理委員會主席
Chairman of IT Governance Committee,
Smart City Consortium

Realize Full Potential of Information Security

發揮訊息安全的潛力

資訊科技網絡發展一日千里，訊息安全已成為智慧城市不可或缺的重要基礎。有賴各行各業對於訊息安全的需求與日俱增，加上本地相關產品的多樣化，以及政府和業界的支援，香港訊息安全行業近年有飛躍的發展，產業規模正以倍數增長。

訊息安全影響著每一個人的日常生活，它能保障我們在商業應用及一般應用電腦網絡時，避免因網絡攻擊或入侵等危機引致資料損失或癱瘓等情況，這對電子化普及的香港非常重要。政府可以加強本地人才培訓，提供由基礎知識到技術應用的培訓課程，為香港業界建立一個本地的訊息安全人才網絡；並加強市民大眾對網絡安全的意識，支援行業建立統一標準，以切合本地網絡安全的需要。

With the impressive growth of the internet, information security has become an indispensable and important foundation in smart cities. As demand for information security in all businesses is increasing, together with the proliferation of local related products and the support of the government and the industry, the information security industry in Hong Kong has also been blooming in recent years. The industry has grown exponentially.

Information security protects us from data loss or paralysis caused by cyber attacks or intrusions in commercial applications and the general application of computer networks. Information security is very important to Hong Kong as it affects everyone's daily life with IT products being widely used. Therefore, the Government should build up a local information security talent network for the industry by strengthening local talent training with courses from basic knowledge to technology applications. It also enhances the public's awareness of cybersecurity and supports the industry to establish unified standards to meet the needs of local network security.

The 21st China Hi-Tech Fair: Hong Kong Smart City Pavilion Showcases Three Major Local Niche Technologies

第二十一屆高交會香港智慧城市展館展示本地三大企業優秀科技項目

In addition to actively moving towards smart cities, more and more regions are hoping to export equipment and services related to smart cities to mainland China and international markets. In order to promote the technological and industrial development of these industries in Hong Kong and Mainland cities, and enhance the brand image of Hong Kong smart city products and services, Smart City Consortium (SCC) has been funded by the HKSAR Government Trade and Industrial Organization Support Fund for setting up a "Hong Kong Smart City Pavilion" (HK Pavilion) in three key technology exhibitions in the Mainland, and organize Hong Kong companies to participate. The first HK Pavilion was set up at the 21st China Hi-Tech Fair (Hi-Tech Fair) to promote three major technology applications in Hong Kong: the internet of things (IoT), financial technology (FinTech) and information security.

目前，愈來愈多地區除了積極邁向智慧城市，更望能將與智慧城市有關的設備和服務輸往內地，以至出口到國際市場。為推動內地與香港相關行業的技術和產業發展，並提升香港智慧城市產品和服務的品牌形象，智慧城市聯盟（「聯盟」）獲香港特別行政區政府工商機構支援基金（TSF）撥款，於內地三個重點科技展覽會設置「香港智慧城市展館」，致力組織香港企業參展。第一個香港智慧城市展館於第二十一屆中國國際高新技術成果交易會（「高交會」）內設置，以推廣香港三大科技應用：物聯網、金融科技和訊息安全相關的產品和服務。

專才薈萃高交會 各界科技企業相互交流

高交會是中國規模最大、最具影響力的科技類展覽會，重點展示不同領域的先進技術和產品，在推動高新技術成果商品化、產業化、國際化，及促進國家和地區間的經濟技術交流與合作中，發揮重要的作用。2019年高交會已於11月13至17日假深圳會展中心舉行。香港智慧城市展館設於一號主場館1C42，佔地近二百五十平方米。香港智慧城市展館由聯盟主辦，合作機構包括香港數碼港、香港軟件行業協會和香港資訊科技聯會。

香港智慧城市展館於11月13日在展館內舉行了開幕典禮，聯盟會長楊文銳先生及深圳市電子商務協會執行會長郝建強先生為開幕禮致歡迎辭，並聯同其他嘉賓包括香港特別行政區政府駐深圳聯絡處主任鄧月容先生和香港資訊科技聯會副會長陳煒國先生，及聯盟多個委員會主席，為展館開幕進行剪綵儀式。創新及科技局副局長鍾偉強博士亦在開幕當日蒞臨參觀香港智慧城市展館。

楊文銳先生致歡迎辭時，指出國家具備強大的科技和製造實力，其高新技術發展成就驕人；而香港特區在多方面也具有相當的優勢，一向是個充滿創造力和創業精神的地方。香港企業在一些訊息科技領域也相當積極，很多香港資訊科技設備和服務供應商早已立足香港，放眼海外。香港與內地資訊科技業界除了在粵港澳大灣區進行業務和技術合作外，內地企業也可以夥拍香港公司拓展國際市場。

Technologist and Specialist Gathered and Connected

The Hi-Tech Fair is China's largest and most influential technology exhibition, showcasing advanced technologies and products in different fields, promoting the commercialization, industrialization and internationalization of high-tech achievements. It plays an important role in promoting economic and technological exchanges between countries and regions. In 2019, the Hi-Tech Fair was held on 13-17 November at the Shenzhen Convention and Exhibition Center. The HK Pavilion was located at 1C42 in Arena No.1, covering an area of nearly 250 square meters. The HK Pavilion was organized by SCC and co-organizers included Hong Kong Cyberport, Hong Kong Software Industry Association and Hong Kong Information Technology Joint Council.

The opening ceremony of the HK Pavilion was held on 13 November. President of SCC, Mr. Gary Yeung, MH and Executive President of ShenZhen Electronic Commerce Association, Mr. Hao Jian-qiang gave their welcoming and introductory remarks in the opening ceremony. They had also joined other guests, including the Director of Shenzhen Liaison Unit of The Government of the HKSAR, Mr. Alfred Tang Yuet-Yung; Vice President of Hong Kong Information Technology Joint Council, Mr. Kenneth Chan and the Chairmen of SCC Committees in officiating the ribbon-cutting ceremony. Dr. David Chung Wai-keung, JP, Under Secretary for Innovation and Technology, also visited the HK Pavilion on the opening day.

他續指，香港一直是中國內地對外經濟合作的重要窗口，也是內地企業「走出去」的首選服務平台，目前香港很多資訊科技產品服務供應商在香港及海外都已建立廣泛的業務網絡，國際營商經驗豐富，懂得如何運用適切的商業渠道經營業務。聯盟希望透過香港智慧城市展館，提供平台讓香港資訊科技業界與內地的用家和企業加強溝通，推動兩地相關行業的技術和產業發展，配合內地企業連結海外市場、拓展商機。

展示高潛力科技產品及服務

展館有將近30間香港公司參展，展示產品及服務包括：區塊鏈管理系統、Web-based文檔管理系統、多用途三維全息投影技術、全方位智慧安老院解決方案、AI手術器械跟踪系統、智能家居系統以及城市智能會計服務等。其中的展品及服務不少都是實用性高及發展潛力大，以高性能區塊鏈技術為例，它每秒可處理高達100,000宗交易，比市面上其他同類技術快最少20倍，更解決了現有區塊鏈科技的協同工作能力和可擴展性問題，大大推進了相關技術的發展。

In his opening remarks, Mr. Gary Yeung said that the country had strong technology and manufacturing strength, and its high-tech development achievements were impressive. At the same time, Hong Kong had considerable advantages in many aspects, such as being full of creativity and entrepreneurial spirit. Local enterprises were also very active in some areas of information technology. What's more, many Hong Kong IT equipment and service providers had long been based in Hong Kong and went overseas. Therefore, in addition to the business and technical cooperation between the Hong Kong and Mainland IT industries in the Greater Bay Area, Mainland enterprises could partner with Hong Kong companies to expand their international reach.

He continued that Hong Kong had always served as an important window for China's foreign economic cooperation and a preferred service platform for Mainland enterprises to "go global". At present, many IT products and service providers in Hong Kong had established extensive business networks both in Hong Kong and overseas. They were experienced in international businesses and knew how to use appropriate commercial channels to run business. SCC hoped to provide a platform through the HK Pavilion to enable the local IT industry to strengthen communication with users and enterprises in the Mainland, promote the technology and industry development of these industries in the two places, and cooperate with Mainland enterprises to reach overseas markets and expand business opportunities.

Showcased Great Potential Technological Products and Services

Nearly 30 Hong Kong companies showcased their products or services, including: blockchain management system, web-based

此外，場內亦有多項推動智慧城市的先進技術及實用智能產品，讓參觀者感受到高科技帶給都市人生活上的便利。如物聯網技術應用到智能家居，收集並分析大量生活數據，以提供度身訂做的服務；金融科技融入會計服務並配合AI技術，實現會計科技化，減輕企業成本等。

第二十一屆高交會已於11月17日圓滿結束，聯盟設置的香港智慧城市展館更榮獲主辦方中國國際高新技術成果交易會組委會頒發了兩個大獎，分別是「優秀展示獎」及「優秀組織獎」。聯盟對此次活動的成功及主辦大會的認同和讚賞感到榮幸，並期望藉此次活動的成功經驗，為日後在其他重點科技展覽會設置香港智慧城市展館奠下基礎，進一步將香港優秀的科技項目推廣至內地以至國際市場！

document management system, multi-purpose 3D holographic projection technology, all-round smart home solutions, AI Surgical Instruments Tracking systems, smart home systems, and urban smart accounting services. Many of the exhibits and services introduced in the HK Pavilion are highly practical and have great potential. Take high-performance blockchain technology as an example, with a speed of up to 100,000 transactions per second, it is at least 20 times faster than other competitors in the markets. It solves the problem of interoperability and scalability of the existing blockchain technology, and greatly promotes the development of blockchain technology.

In addition, there are also a number of advanced technologies and practical smart products that promote smart cities, allowing visitors to experience the convenience of innovative products for urban living, such as the application of IoT to smart homes, collecting and analyzing large amounts of daily activity data to provide tailor-made services; FinTech integrates with accounting services and AI technology to optimize accounting technology and to reduce corporate costs, etc.

The Hi-Tech Fair was successfully concluded on 17th November. The HK Pavilion set up by SCC won two awards from the China Hi-Tech Fair Organizing Committee: the Excellent Exhibition Award and the Excellent Organization Award. SCC is honoured by the success of this event, and the recognition and appreciation of the Organizing Committee. It is hoped that the successful experience of this event will lay a solid foundation for the setting up of a HK Pavilion in other key technology exhibitions in the future. Thus, Hong Kong's advanced technology projects can be further promoted to the Mainland market!

Able Trillion Utilizes Innotech To Build Up Diversified Smart Community
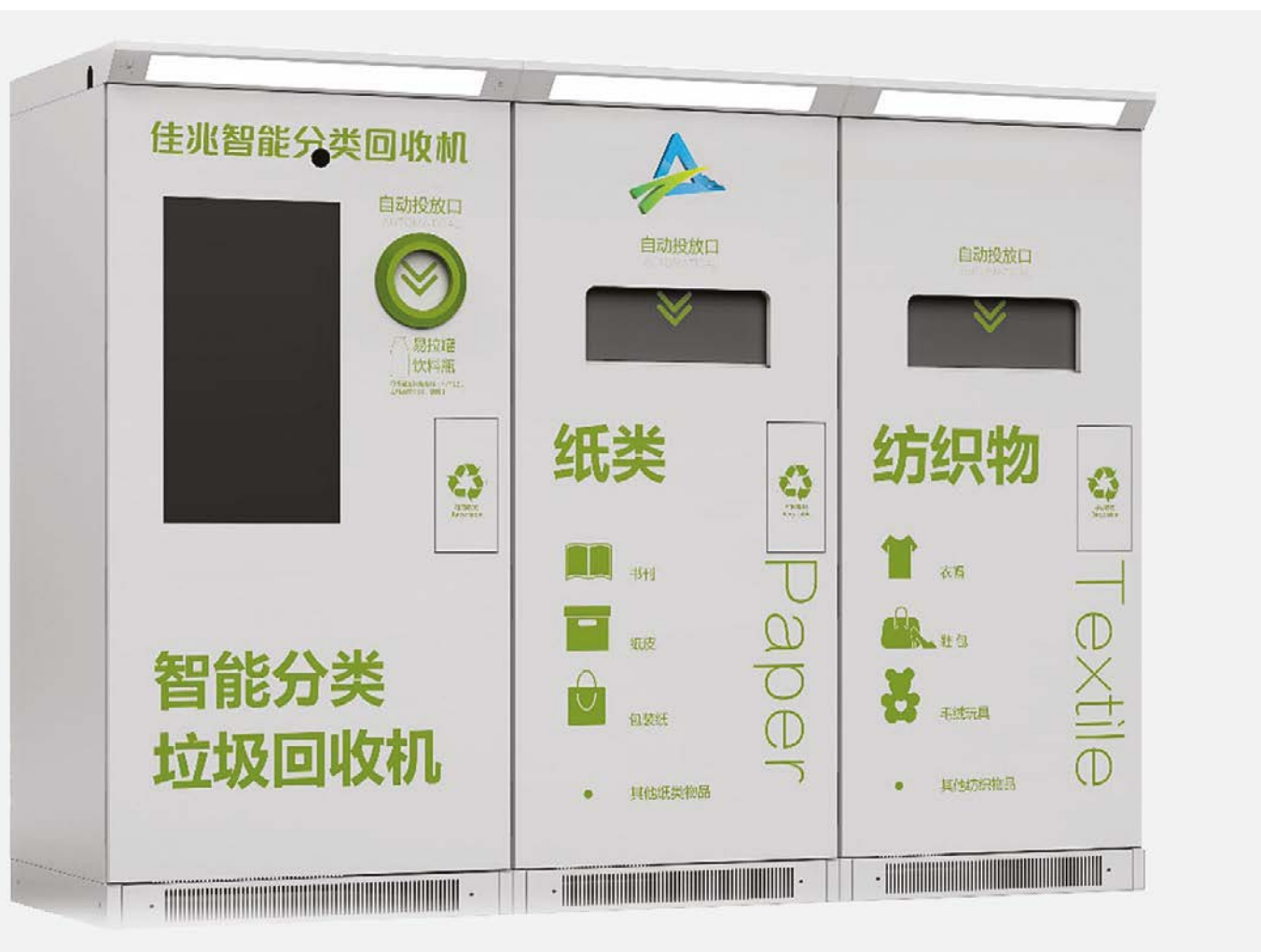
佳兆善用創新科技構建多元智慧社區

《香港智慧城市藍圖》計劃利用包括出行、生活、環境、市民、政府及經濟等六大範疇的現代科技，預期為本港各行各業和普羅大眾帶來顯著的效益。這當中涉及的範圍非常廣泛，因此除了以政府為首推動外，也需要業界配合發展和推廣，才能令整個計劃不只在「數據」層面上體現，更令市民切身感受箇中帶來的變化和益處。

《智城》今期邀請到佳兆集團有限公司接受訪問，分享其對智慧城市、智能社區、物聯網應用以及綠色科技的看法，並發表對香港發展智慧城市的期望。

The Hong Kong Smart City Blueprint plans to use updated technology to develop six major areas including mobility, living, environment, people, government and economy. This development is expected to bring significant benefits to all industries and the general public in Hong Kong. Since its scope is very wide, so in addition to promotion by the government, the industry must also collaborate so that the effectiveness of the entire plan is not only reflected in the "data" level, but also allows citizens to feel the changes and benefits brought by it.

In this issue, *Smart Vision* invited Able Trillion Holdings Limited to share their views on smart cities, smart communities, IoT applications and green technologies, as well as their expectations of the Government's smart city promotion and assistance to the industry.

關於佳兆集團有限公司

佳兆是一家香港本地公司，也是全港唯一一家提供水溶性袋解決方案的綠色科技公司，提供專用的水溶性及生物降解產品、廢物管理方案和智慧社區系統，包括智慧垃圾分類系統、智慧用電系統、智慧道路泊車系統等一系列綠色技術。　公司重視技術研發，在中港澳三地的研發團隊現時約有40人，並計劃於2020年從三地大學物色專才，擴充團隊至100人。

佳兆的主要業務與技術研發，都有助香港智慧城市的發展：例如道路泊車系統能配合「智慧出行」，有效利用車位資源並減少堵塞情況；醫療記錄系統配合「智慧生活」，減少醫療負荷，密切監察健康情況；垃圾分類系統配合「智慧環境」，以綠色科技加強廢物管理。加上佳兆的企業核心信念是「環保」，在追求科技進步和方便的同時，也要為環

About Able Trillion Holdings Limited

Able Trillion is a local company and the only green technology company in Hong Kong to provide a series of green solution, ranging from water-soluble and biodegradable products, Waste Management Solution, Smart Community Solutions to Smart City System, including Intelligence Recycling System, Smart Garbage Sorting System, Smart Electricity System, Smart Road Parking System, etc. The company also emphasizes research and development (R&D). Its R&D team in China, Hong Kong and Macau currently has about 40 members. They have planned to recruit more talents from universities in the three places in 2020, in order to expand the team to 100 people.

Able Trillion's main business and R&D can complement the development of Hong Kong's smart city: for example, its Smart Road Parking System can work with Smart Mobility to effectively use parking spot resources and reduce traffic jams; Medical Record System can be used for Smart Living to

境和大眾的健康負責任。佳兆認為這才是現今最迫切的任務，更加是所有城市可持續發展的必要條件。

智慧社區解決方案

佳兆集團有限公司業務拓展總監張乃恩先生（Lawrence）接受訪問時指，「智慧社區解決方案」涉及智慧家居、居家養老、物業安防、電子商務、諮詢服務等諸多領域，旨在構建智慧社區。透過智能處理海量數據，改革現有的生活模式、產業發展以及社會管理等方面，形成全新的社區形態。

這些服務雖然各有不同，但卻來自同一個核心，Lawrence比喻說這如同現今的智能電話，不同的應用程式（app）和整體運作都建基於同一個核心。而佳兆的核心是雲端技術，配合大數據，在保障私隱下調整不同範疇的社區設施和政策。

同時，透過物聯網的互聯互通，將以往分散的資源和服務連結起來，加以充分利用，改變原有的社區運作模式，例子包括自動回收系統獎勵制度、社區資源互助服務（如鄰近托兒、補習或家務助理）、環保產品普及化等等，配合市民的日常生活，改善生活之餘也節省時間。

reduce the medical workload and closely monitor the health situation; Garbage Sorting System works well with the Smart Environment to strengthen waste management with green technology. This is based on the core belief of the company: being eco-friendly, responsible for the environment and the health of the public, while pursuing technological progress and convenience is a must to the company. Able Trillion believes that this is the most urgent task today, and is also a necessary condition for sustainable development in all cities.

Smart Community Solutions

Mr. Lawrence Cheung, Business Development Director of Able Trillion Holdings Limited, said in an interview that Smart Community Solutions involve many fields such as smart home, home care, property security, e-commerce, and consulting services to build up smart communities. Massive amounts of data after being processed intelligently can transform the existing living models, industrial development, and social management to form a new community.

All the above solutions and services, though look different, are operated based on the same core. Just like different applications (apps) of a smart mobile phone, the overall operation and the apps comes from the same core, a metaphor by Lawrence in explaining. Able Trillion's core is its cloud technologies and big data. Together, they are adopted to adjust community facilities and policy formulation while protecting privacy.

At the same time, by utilizing the interconnectivity of Internet of Things (IoT), the previously scattered resources and services are connected and became more available for use. As a result, it changes the original community operation model. This includes automatic recycling reward system, community resource mutual assistance service (such as nearby childcare, tutoring or home helper), use of eco-friendly products, etc. They assist citizens to save time and improve living experience in their daily life.

Water-soluble Bag

水溶環保袋

IoT Technology With Great Potential

"IoT technology is definitely an important element for entering the new century of intelligence. It has great potential for development when used in conjunction with 5G technology. It can be said that it is applicable to various industries," Lawrence said. To Able Trillion, other than water-soluble and biodegradable technologies, the rest of the business is also closely related to IoT technology, one of the examples is the Intelligence Recycling System.

After registration, the public can locate the nearest recycle bin from the program, and can inquire about the available space in the recycle bin in real time. If the waste disposal charge is implemented in future, the authority may make use of the intelligence system to promote recycling. By bringing used materials for recycling, participants can collect points which can be exchanged for goods or fully biodegradable garbage bags. The government can also use the built-in weighing function of the recycle bin to track and record the source of all garbage and various recycled materials. All data is centralized on a cloud platform for analysis and policy making, such as whether to add or reduce recycle bins.

The connection among operating services, cloud systems, hardware equipment and users will form a positive recycling cycle: citizens are more willing to participate in recycling, service contractors and recyclers can reduce operating costs; the use of biodegradable bags can also reduce plastic waste and the burden on landfills, which together promotes a cleaner environment.

Cooperation · Sharing · Win-win

There are outstanding companies and technologies in all industries and fields. Lawrence believes that "cooperation sharing win-win" between them is the key to success. To improve urban development, there must be multiple elements. As a local company specializing in green technology, Able Trillion hopes to play the role of "connector" in the development of Hong Kong's smart city, providing system platforms and green products, enabling all industries to co-operate and develop a network of industries according to their own professional skills, which can benefit the refinement of the entire smart city system and meet the needs of various stakeholders in the society, so that Hong Kong can become an outstanding smart city. This echoes with its corporate motto: "Make the world a better place".

物聯網潛力龐大

「物聯網技術絕對是踏入智能新世紀的一個重要元素,配合5G技術的發展,在市場上仍然有非常龐大的發展空間,可以說在各行業也用得著。」Lawrence說。對佳兆而言,除了水溶和生物降解技術,其餘業務可以說和物聯網息息相關,智能垃圾分類系統便是其中之一。

市民在登記後便能在程式內查找最近的回收桶位置,以及回收桶空間的實時情況。若將來推行垃圾徵費,當局可利用此智能系統,推廣垃圾分類,參加者把可回收的廢棄物拿來回收桶便有積分,而積分可用作換取商品或全生物降解垃圾袋;同時,政府亦可利用回收桶內置的稱重功能,追蹤並記錄所有垃圾和各類回收物的源頭,再利用雲端平台的訊息制定適當政策,按需要加設或減少回收桶。

營運服務、雲端系統、硬體設備及使用者之間的連結,將形成一個正向回收循環:市民更樂於參與回收,服務承辦商和回收商也能減低營運成本;利用生物降解袋亦可減少塑膠垃圾,減輕堆填區負擔,推動潔淨環境。

合作 · 共享 · 共贏

各個行業及領域都有傑出的企業和技術,Lawrence認為「合作 ● 共享 ● 共贏」是成功的關鍵。完善城市發展必須具備多項條件,作為一家專門從事綠色技術的本地公司,佳兆希望能在香港智慧城市發展中擔當一個「連接者」的角色,提供系統平台和綠色產品,令各個行業都能根據自己的專業領域,加以合作發展有利於完善整個智慧城市系統的業界網絡,滿足社會上各持份者的需求,這樣才能令香港成為一個傑出的智慧城市。正如其企業格言:「Make the world a better place」。

亂局中須有為
資訊平台助解困

原刊於2019年11月19日《香港經濟日報》

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Public needs to be updated in times of change

The article originally posted on South China Morning Post on 23 Nov, 2019

香港已經歷了超過五個月的亂局，暫時未有緩和的迹象。在十一月上旬全港更陷入近乎停擺的境地，居於新界的友人上班竟要花上六個小時，即使居於九龍地鐵沿綫的，也比平日花多兩三倍時間才能抵達中環。

民生受阻 任何政見不願見

交通癱瘓，學校停課，緊急救援受阻，計時薪的勞動階層更是苦不堪言，我想即使支持不同政見的各方人士也不願見。

近日看到前天文台台長林超英博客草雲居一篇題為《政府去了哪裏？──幾點建議》的網評，其中有些建議和我去年強颱風山竹襲港後的意見不謀而合，因此請容許我在這裏綜合彼此見解，希望為香港謀求實際可行的解決方案。

中央資訊平台COP 協調應變

一、政府內部，應該盡快協調各部門參與使用聯合運作平台（COP，Common Operational Picture）──

這是一個中央資訊平台，一方面方便各部門在瞬息萬變的今天互通信息，方便統籌行動。警方之外，也應包括如運輸署（交通情況）、路政署（破壞宗數和修復進度）、新聞處（闢謠）、消防處（出動情況）、食環署（食物供應保障、市面清理）、教育署（上學安排）、環保署（空氣質素）、康文署（哪些設施要關閉），以及醫管局（入院人數、診所及醫院服務）等。

另一方面，在處理突發事件時，這個平台也是指揮中心，讓當局調撥資源。

The social unrest persists with no signs of easing. Earlier, the whole territory almost grind to a virtual standstill, people living in the New Territories had to spend six hours commuting to work, for those living along the MTR lines in Kowloon, they had to spend two to three times extra time to reach Central. Traffic was paralysed, schools had to suspend class, emergency rescues were blocked, and the working class whose pay is based on hourly or daily rate suffered even more. People are struggling to cope with the situation without accurate and updated information.

Recently, Lam Chiu Ying, the former director of the Hong Kong Observatory, urged the government to impose measures to solve the chaos in his blog. Some of his suggestions echo the ones I made after the strong typhoon Mangkhut last year. Therefore, I would like to consolidate our views and propose the following practical solutions to addressing our current crisis:

1. For the government, the use of a Common Operational Picture (COP) to enhance inter-departmental co-ordination –

COP is a central platform that enables the exchange of information and facilitates coordination among departments.

Apart from the Police, the platform should include the departments of transport (traffic condition), highways (road closure and repairs), fire services (emergency services updates), information services (refute rumour), food and environmental hygiene (assuring food supplies, public cleaning), education (school arrangements), environmental protection (air quality), and leisure and cultural services (closure of facilities), as well as the Hospital Authority (updated clinic and hospital services availability).

香港個別部門如土力工程處已設立這樣的聯合運作平台，它集合多個部門資訊，包括90個雨量站數據、山泥傾瀉報告，資訊上載到雲端綜合處理，並在大屏幕上顯示緊急事件分布以決定應變行動。

一站式儀表板 實時公布助民生

換句話說，既然政府個別部門早已採用這些設施，現時要做的，是把它的規模擴大至整個政府，既可應對當前危機，更能提升管治效率。

二、面向市民，設置一站式城市儀表板（City Dashboard）——

草雲居提到政府有一個「政府回應近期社會事件」網頁，相信聽過的人甚少，而且上面消息公布的方法相當「不友善」：單在11月15日便有20條公布，要逐一打開才知詳情，因此絕大多數人如我都依賴新聞網站或社交媒體，好處是重點提示，但有時難免信息混雜，甚至真假難分。

如果政府可以把民生相關的主要信息，實時公布現況，例如哪裏堵路、哪個地鐵站臨時關閉、哪些診所服務或公共設施將會提早結束等，以地圖一站式羅列出來，令人一目了然，並附以流動應用程式作即時通報，出行、生活就更有預算。

不過，草雲居擔心政府要做這些措施，可能要「搞甚麼國際投標拖延時間」。

政府已擁技術方案 須速落實

其實，政府早於今年初已經在「國際資訊科技博覽」上作出示範，當時展示的有全港幾大區域和三條海底隧道的實時車速、泊位情況、分區溫度和雨量。這顯示政府已經有可行的技術方案，目前只需加強內容，因此應可盡速落實。

上星期亂象蔓延至大學校園，在媒體上見到母校香港大學理學院院長艾宏思教授多番走入人群，試圖勸說年輕人以理性和平方式表達意見，雖然最終無功而還，但他在危機中勇於謀求解決方法的膽識和對學生的愛護，令人肅然起敬。

事實上，我們正熱切需要更多人像教授這樣，以愛、勇氣和智慧的方式，嘗試幫忙解決問題，香港亂局方能有終結的一天。

Besides, when dealing with emergencies, this platform can be transformed into a command centre, allowing the authority to allocate resources.

Departments such as Geotechnical Engineering Office in the Civil Engineering and Development Department already has such a platform which integrates information from various departments, including the data from 90 rain gauges and landslide reports. Information is uploaded to the cloud server for integration, and the distribution of emergency events is displayed on a big screen for coordinating the response.

In other words, some government departments have already been using these facilities. All we need now is to expand the platform to the entire government, so as to cope with the current crisis and make governance more efficient.

2. For citizens, a City Dashboard provides one-stop updates of key information –

Lam mentioned that the government has a webpage called "Government Responses to Recent Events" which I believe only very few people have heard about. Its display of information on the webpage is also not user-friendly: for example, there were over 20 announcements on 18th November 2019 alone, one has to open them one by one to learn the details. Therefore, most people like me, rely on news websites or social media which provide catchy headlines at a glance, but people find it hard to summarize all information.

Through the City Dashboard, the government can broadcast key information in real-time, such as which roads are blocked, which MTR stations or public facilities are temporarily closed, and display all the information on a map, together with a mobile application for instant notification, facilitating our planning for daily activities.

Lam worried that the government may need to take time for "international tendering" which may delay implementation. In fact, earlier this year, the government has already demonstrated a City Dashboard at the 2019 ICT Expo, showing real-time average traffic speed in several major districts and three cross-harbour tunnels, parking availability and weather in major districts. With maps, icons, charts, and real-time images, laymen find it easy to grasp the situation.

The software and hardware required are already working, it only needs to extend its scope and implement as soon as possible.

The above measures can improve mutual understanding and quickly assist in resolving the current crisis pressing us so hard today.

Dr. Tang 的英文新書《Are You Future Ready？》經已出版，可以免費下載或網上閱讀。

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PISA排名
應成為改進香港教育的契機

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PISA Ranking
Should Be an Opportunity for Improving Education In Hong Kong

日前「學生能力國際評估計劃」（PISA）全球同步公布，2018年研究結果顯示，在參與PISA的79個國家/ 經濟體中，澳門15歲學生的閱讀、數學和科學素養首列全球第三，僅次中國內地、新加坡，成績為澳門歷屆之最。澳門學生過去落後港生約40分，現在在閱讀、數學及科學三方面均超過香港，對香港來說是一個警號。

PISA由經濟合作與發展組織（OECD）策劃，每三年進行一次，旨在評估15歲學生的能力。中大教育數據研究中心以隨機抽樣方式邀請152間中學、約6,037名學生進行測試，評估他們閱讀、數學和科學素養三方面的能力，顯示本港學生在閱讀及數學能力全球排第四，科學素養則排第九。澳門學生的閱讀成績為525分、科學544分、數學558分，三項素養首次位居全球第三。

面對科技主導的世界，香港如何培養人才已是一大挑戰。筆者多年來一直推動STEM（科學、科技、工程、數學）教育，可是近年政府才較積極為全港中小學校引入STEM教育，開始鼓勵青少年在科學方面發展。但現實情況卻是目前體制仍以應試教育為本，本地大學收生制度只重視四個核心科目，即是考生必須在中文、英文、數學及通識四個科目考獲相應等級，達到最低入學要求的「3-3-2-2」才能獲得升讀大學的入場券，因此導致大部分學生及家長只是「求分數」，科學長期被忽視。此次PISA的結果正正提醒當局須虛心檢討，我建議政府盡快改革大學收生制度，及全面提升STEM教育，將編程（coding）及人工智能（AI）列為中、小學必修課程。

A few days ago, the academic results of 2018 Programme for International Student Assessment (PISA) was released globally. It is shown that among the 79 countries/economies participating in PISA, Macau's 15-year-old students ranked third in the world in reading, mathematical and scientific literacy, second only to Mainland China and Singapore, which is the highest ever scores in Macau. Macau students were about 40 points behind Hong Kong students in the past, but now surpass Hong Kong in all three areas. This is a warning to Hong Kong.

PISA is administrated by the Organisation for Economic Co-operation and Development (OECD) and is held every three years to assess the ability of 15-year-old students. CUHK EdDataX Research Centre randomly selected around 6,037 students from 152 secondary schools to complete computer-based assessments on reading, mathematical and scientific literacy. Hong Kong students ranked fourth in both reading and mathematics and ninth in science in the overall rankings. Macau students have scores of 525 in reading, 544 in science, and 558 in mathematics. For the first time, the three accomplishments ranked third in the world.

Facing a world dominated by technology, how to train talents has become a major challenge to Hong Kong. I have been advocating STEM (science, technology, engineering, and mathematics) education for many years whereas the Government only started to be more active in introducing STEM education to primary and secondary schools in Hong Kong in recent years. The aim is to encourage young people to develop interest in the science sector. However, the reality is that the current education system is still test-oriented. The local university admissions system only focuses on four core subjects, namely Chinese, English,

PISA作為當前最全面的教育評估，有其參考價值，但參考不能只是注重排名，更要正視與學科沒直接關係的評估，諸如學生的生活滿意度、成長思維等，這方面香港的情況都遠遜於OECD國家，個別排名及數據只是表象，背後則牽涉相當複雜的社會因素。

值得一提的是，學生的幸福感與校園欺凌現象密切相關。2018PISA研究結果顯示，經過兩三年的努力，澳門的校園欺凌現象已得到改善，從2015年末段提高到中游位置。而PISA過往的評估，香港中學生稱遭同學欺凌比率更是全球最高，32%受訪香港中學生稱一個月最少遭欺凌數次，有近10%指曾遭同學打和推撞。筆者曾去信立法會教育事務委員會，要求跟進校園欺凌問題，建議特區政府參考外地做法，研究制定「反欺凌法例」，真正做到校園欺凌零容忍。

自史丹福大學教育學者Carol Dweck在2006年提出「成長思維」理論，與「固定思維」區分開來後，PISA在是次評估中首次通過從學生如何看努力與智力進步的關係來衡量其「成長思維」。結果發現，香港只得43%學生具有「成長思維」，遠低於OECD國家平均數的63%。而香港學生的歸屬感（例如覺得自己在學校是個局外人，或在校容易結交朋友）及評價教師的支持，都低於OECD平均分，社會應該關注。

PISA的結果就像身體檢查，找出教育制度的隱患，今屆港生表現成績並不太差，但亦足以反映本港教育已響警號。香港不應只追求排名，學生的軟能力、健康價值觀、抗逆能力、創新思維等都重要。筆者一直希望本港教育可以從過度操練走向愉快學習，讓學生既有高度學習動機，亦能轉化為成績，更能德才兼備、放眼世界。香港學校要創建良好的教育生態，在關注學生高水平表現的同時，也要關注學生的幸福感。香港教育必須改進，希望PISA排名可以成為一個改變的契機。

Mathematics, and Liberal Studies that candidates must achieve the minimum admission requirement of "3-3-2-2" to obtain university admission qualification. As a result, most students and parents only care about scores, and science has been ignored for a long time. The results of this PISA are a reminder to the authorities that they need to conduct a thorough review. I recommend that the Government reform the university admission system as soon as possible, comprehensively improve STEM education, and adding coding (i.e. computer programming) and AI into compulsory subjects of primary and secondary schools.

Being the most comprehensive academic evaluation at present, PISA has its reference value, but the ranking should not only focus on academic achievements. It should also include evaluations on other aspects, such as student life satisfaction and growth thinking. Hong Kong students are far weaker than those of OECD countries in these aspects. Individual rankings and data are only the surface, behind them are always complex social factors.

It is worth mentioning that the happiness of students is closely influenced by the issue of bullying on campus. The results of the 2018 PISA study show that after two to three years of efforts, the problem of school bullying in Macau has been reduced, and has been revised to the midstream position from the bottom in 2015. In the past assessment by PISA, the rate of Hong Kong secondary school students claiming themselves having been bullied by their classmates was the highest in the world. 32% of the interviewed Hong Kong secondary school students reported having been bullied at least a few times a month, and nearly 10% said they had been beaten and pushed by their classmates. I have written to the Panel on Education of the Legislative Council asking for a follow-up on the issue, and suggested that the Government should follow foreign practices, investigate and formulate an anti-bullying legislation to truly achieve zero tolerance for the problem.

Since Stanford University education professor, Carol Dweck, proposed the Growth Mindset Theory in 2006 to distinguish it from the Fixed Mindset, it is the first time for PISA to measure students' growth mindset by looking at the relationship between effort and intellectual progress in this assessment. It was found that only 43% of students in Hong Kong has a growth mindset, which was far below the 63% of the OECD average. The sense of belonging of Hong Kong students (such as feeling that they are a member of the school or not, or easy to make friends there) and the positive evaluation of teachers are lower than the OECD average score. The society should be aware of this.

The result of PISA is like a physical examination to find out the hidden deficiencies of the education system. The performance of Hong Kong students this year is not too bad, but it signals a warning on education of Hong Kong. Hong Kong should not only pursue rankings. Students' soft abilities, health values, resilience and creative thinking are all important. I have always hoped that education in Hong Kong can move from examination-oriented culture to pleasant learning, so that students can not only have an outstanding performance academically but also acquire high motivation for learning. They can also be equipped with professional and ethical abilities. At the same time, if Hong Kong schools want to create a good education ecology, they must attend to students' psychological well-being, in addition to their academic performance. Education in Hong Kong must be overhauled, and we hope that the PISA ranking serves as a stimulus for change.

SCC
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Merry Christmas
Best wishes for Happiness in the New Year

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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