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AI, Big Data and Cloud Establish A New Era of Smart City 人工智能、大數據、雲端 建構智慧城市新時代



# About the Smart City Consortium (SCC)

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.

# 關於智慧城市聯盟 (SCC)

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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**8.To Be Smart Is To Identify the Needs of the Citizen - Mr.Alex Katsanos** 智慧城市應依據市民大眾的需要





# Smart·智城 **VISION**



Artificial intelligence (AI), Big data and Cloud technology have made undeniable contributions to smart city construction, and most of the infrastructure applies these technologies. Since its establishment, the Smart City Consortium (SCC) has committed to promoting innovation and technology (InnoTech), from preparing and supporting a number of events and seminars, including its recent collaboration with Lingnan University on hosting a conference with the theme of big data, to working closely with government departments, including the promotion of the latest InnoTech application to the Police Force and the Correctional Services Department, hoping to enable these technologies to penetrate to all levels of society. We expect to raise public awareness of InnoTech and enhance the use of technology by government departments.

In the smart city development, the application of these three technologies is crucial. Take one of Hong Kong's dominating sectors the service industry as an example. We expect these advanced technologies will bring concrete and comprehensive optimization to it in the near future, such as practitioners being free from repetitive work, collective transformation of enterprises, improvement in enterprise management, and assistance in business decision making. In regard to the public services by the government, they can also become more userfriendly and convenient through the adoption of these technologies, such as guiding people to fill in application forms by voice navigation enabled by Al.

In response to the *Outline Development Plan* for the Guangdong-Hong Kong-Macao Greater Bay Area ("Development Plan") as recently promulgated by the State Council of China, I think it is a good news for Hong Kong's InnoTech industry and smart city-related industry as the *Development Plan* deepens the cooperation between the Mainland and Hong Kong and Macao, and enhances regional integration. As the Mainland market is huge with high growth potential, all places are actively strengthening the municipal services for which the smart city development has great potential to contribute. In view of the significant influence of the Greater Bay Area on the country, Hong Kong's smart city-related industry can seize the opportunity to use the Greater Bay Area as a show case to develop cooperation with the Mainland.

In respect of *The 2019 Budget*, the SCC is happy to see that the government continues to place an emphasis on InnoTech and allocates more resources to the training of talents in InnoTech application, such as the increase in continuing education fund to encourage lifelong learning.

The SCC will continue to promote the smart city technological application in Hong Kong and enhance the competitiveness of the city!



**Mr. Eric YEUNG** 楊全盛先生 President <sub>會長</sub>

人工智能、大數據及 雲端科技在建構智慧 城市方面可謂功不可 沒,大部分的基礎建 設均是這些科技的應 用。智慧城市聯盟成 立至今一直致力推動 創科,由籌備及支持 多場活動及研討會, 包括近期與嶺南大學 合作舉辦以大數據為 主題的研討會;到與 政府部門緊密合作, 包括向警務處及懲教 署推廣最新的創科應 用等等,希望將這些

科技滲透到社會各個層面,藉此促進社會大眾對 創科的認識,以及提高政府部門使用科技的程度。

在發展智慧城市中,這三種科技的應用非常重 要。例如服務業在香港舉足輕重,我們預期人工 智能、大數據及雲端科技,將於不久將來全面優 化此行業,如從業員毋須再做重覆性工作、企業 集體轉型、改善企業管理,以及協助商業決策等 等。在政府公共服務方面,服務也可因創新科技 變得更人性化,如在填寫申請表格時,人工智能 系統可以語音導航,為市民帶來更大的便利。

近期國務院公布的《粵港澳大灣區發展規劃綱 要》,我認為能深化內地與港澳合作,加強區域 融合,對本港創科業與智慧城市業界來說是好消 息。內地市場龐大,隨著經濟增長,各地正積極 加強市政建設,智慧城市發展具有很大潛力。 大灣區輻射全國,香港智慧城市業界可把握當中 機遇,以大灣區作試點,開拓與內地的合作。

而《2019-20年度財政預算案》,聯盟亦樂見政 府繼續重視創新科技,投放更多資源培訓創科應 用之才,如增加持續教育基金以鼓勵市民終身學習。

聯盟將繼續推動香港各項智慧城市的科技應用, 提升香港的競爭力!







# AI, Big Data and Cloud Establish A New Era of Smart City 人工智能、大數據、雲端建構智慧城市新時代

Smart・智城

Technology changes lives is a well-known rule. Past new era always starts with innovation and technology (InnoTech) breakthrough. Looking back to the technology advancement path of the past 30 years, technology brought revolutions to the industry in almost every 10 years. The most spectacular advancement among all is the rise of the internet in the 90's, when the world was officially stepping into the Information Age. From all the policies and planning of the Policy Address in 2019 to the Budget's allocation for promoting the development of InnoTech, we can see the importance of InnoTech. Are there any other technology bases to lead the technology industry besides the recent 5G network that is ready to go? Al, Big Data and Cloud are the three indispensable technologies in the process of developing smart city.

Since 2016, the term "ABC" is widely used. It represents Artificial Intelligence (AI), Big Data and Cloud respectively, emphasizing the future of the world lies in the hand of these technologies and stepping out from the old information technology to the new era "ABC". Along with the merging of the top 3 technologies, exploring the industry's new values successively is bringing disruptive revolution to every profession.

On this issue, *Smart Vision* invited Mr. Vandia Yang, Chairman of SDN & Clould SIG of SCC and General Manager Mr. Liu Binxing from Alibaba Cloud (Hong Kong, Macau & Korea Region) as well as Mr. Timothy Leung, Executive Director of HKAI Lab to introduce concepts and analyze the trend of "ABC" technology. Overview of InnoTech industry in Hong Kong will also be discussed.

科技改變生活已是耳熟能詳的定律,一個新時代的開始往 往取決於嶄新科技突破。回顧過去30年來的科技發展歷 程,科技約每10年就對產業帶來變革。當中不得不提及90 年代互聯網的出現,全球正式邁進資訊化時代。由2019年 施政報告種種政策與規劃,到財政預算案中撥款大力推動 發展創新科技,可見其重要性。除了近期蓄勢待發的5G網 絡,還有什麼基礎科技主導科技界?在智慧城市發展過程 中,人工智能、大數據、雲端是不能缺少的三大科技!

2016年起,「ABC」一詞廣泛流傳,分別代表人工智能 (AI)、大數據(Big Data)和雲端(Cloud),未來世 界將由這三大科技主導,從傳統的資訊科技走到新世代 「ABC」。隨著三大科技深度融合,陸續深入產業並發掘 產業的新價值,正在為各行各業帶來顛覆性的革新。

今期智城邀請了智慧城市聯盟軟體定義網路及雲端工作小 組主席楊智添先生、阿里雲港澳及韓國區總經理劉彬星先 生和香港人工智能及數據實驗室執行總監梁季笙先生, 介紹「ABC」科技的概念及分析其趨勢,並講解香港在創 科行業的概況。



#### Starting Up AI, Big Data and Cloud

The "ABC" technology turns impossibilities into infinite possibilities, encourages enterprises to solve city's problems with InnoTech and brings convenience to daily lives. The rise of Chatbot, Cloud drives and many other technologies make the city smarter. Although Al, Big Data and Cloud are being used together for most of the time, there are differences on the concepts which people would mix them up easily. We will explain in detail in the following.

Big Data adopts all data as much as possible as there is large amount of information that cannot be processed by the traditional sample calculation method for statistical analysis, storage and computation in time. Generally speaking, there are four characteristics for Big Data: immense Volume, Velocity, Variety and Veracity (4Vs). The main reason for the rise of big data is the ease of access to data nowadays and the cost of data storage decreased sharply. For example, Facebook handles almost 50 billion uploaded photos daily and an average of 500 million tweets daily for Twitter. Even so, the vast amount of data does not mean anything. It is crucial to give Big Data meaning and purpose, by using Cloud which is a platform to store and analyze vast amount of data to assist the computing, we can acquire analysis and predictions on everything.

The concept of Cloud is more concrete than Big Data's because Cloud has been integrating into our lives without our noticing. From e-mail that we check daily, mobile applications that we use daily to even online shopping platforms, Cloud technology supports everything. Vandia states that among the extensive use of Cloud, people are most familiar with the storage and management function. Providing services according to different needs is one of Cloud's features, in which there are public Cloud, private Cloud and combined Cloud.

For public Cloud, apart from terminal equipment, no other calculating devices are required, and users could enjoy the services through the internet. For private Cloud, only the registered users are authorized to use it and the enterprise will have to build their own server room and provide services to the internal users by using the Cloud technologies. For combined Cloud, it is a



Smart・智城

# 人工智能、大數據、雲端全面啟航

「ABC」科技把不可能變做無限可能,驅動企業以創新科 技解決城市問題,便利生活。如聊天機器人的出現,常用 的雲端硬碟等,讓城市變得更有智慧。人工智能、大數據 和雲端很多時候會同時應用,但概念上卻有所分別,容易 令人混淆。以下就為大家一一拆解。

大數據意指資料的規模龐大,無法透過傳統採用樣本計 算的統計方式,在一定時間內進行儲存、運算與分析, 因而盡可能地採用全量數據。一般而言,大數據講求四個 特點:資料量、多元性、即時性及真實性。它興起的最主 要原因是現今數據較易收集,而儲存數據的成本亦大幅 下降。例如Facebook每天處理約 500 億張的上傳相片, 每天平均約5億條推文在Twitter上發佈等。但海量的數據 不存在任何意義。要賦予大數據意義及用途,從數據中獲 得分析結果及各種預測的能力,以儲存和分析海量數據的 平台——雲端來協助運算,必不可少。

雲端的概念相比起大數據來說較為具體,因為雲端早在不 知不覺間融入我們的生活,每天查看的電郵、手機應用 程式、網上購物平台等,背後都有著雲端科技的支持。 楊智添指出雲端的應用廣泛,當中存儲和管理的功能最為 人熟悉。按需求提供服務,是雲端的一大特點,其中雲端 運算部署類型一般來說分為公有雲、私有雲和混合雲。

公有雲的使用者除了終端設備,完全不需要擁有任何計算 設備,直接透過網絡使用服務。私有雲則只有登記使用者 擁有使用權,而企業需自建機房,再透過雲技術對內部用 戶提供按需服務。混合雲則是結合公用與私人雲端,讓資 料及應用程式可安全地在兩者間共用,亦是現時企業的主 流應用。現今雲端服務模式包括基礎結構即服務、平台 即服務和軟體即服務。只要有可連結上網的設備,使用 者便可透過網路使用運算資源,並依照最終使用量及服務 付費。

雲端運算亦是未來政府運作的關鍵議程,如實施新一代政 府雲和大數據分析平台,以滿足未來數碼化政府服務的需 求。劉彬星預期,使用混合雲技術可減少20%資訊科技系 統開發時間,總體成本也能節省達兩成。未來大數據分析 平台亦會應用於交通管理、清關、公共衛生等多個政府部 門的相關項目,為推動本港智慧城市發展,雲端基建和相 關標準的改革將越趨重要。

談到人工智能,大多數人都會首先想起智能機器人。事實 上,機器學習只是人工智能的其中一個分支,讓機器可以 自動學習、從巨量資料中找到規則,進而有能力做出預測。

5



combination of both public and private Cloud. It allows information and applications to share safely among private and public Cloud and is the common application for nowadays enterprises.

Moreover, the service mode of Cloud includes basic structure as a service, platform as a service and software as a service. As long as users have the access to the internet, they can utilize the computational resources online and pay according to the usage amount.

Cloud computing is the key agenda of Government's operation in the future, such as to implement the new GovCloud and Big Data analysis platform to meet the needs of future digitalized government services. Liu predicts that using combined Cloud technology can reduce the time spent on the development of information technology system by 20% and the total cost can be reduced by 20%. Big Data analysis platform will also be applied to related projects of government departments such as traffic management, clearance and public health in the future. Cloud infrastructure and related standard revolution are becoming more important than ever in boosting the development of smart city in Hong Kong.

Speaking of AI, most people would think of AI robots instantly. In fact, machine learning is only one of the branches in AI. It allows machines to learn voluntarily, to find patterns from the vast amount of information and make predictions. To put it briefly, AI means the imitation of human intelligence, to own the ability of self-learning like the brain. The common usage of image recognition, automatic translation and even iPhone Siri have adopted AI. The term "Artificial Intelligence" came up more than 60 years ago, it is the main driving force of the fourth industrial revolution, which is now in its third phase.

"One of the reasons that the first two phases did not have too much response is because there was lack of support from data or powerful computing ability," says Timothy. For now, AI adopts Cloud platform as its base and uses information from Big Data to conduct all kinds of intelligent analysis, for which automation is one of the products from AI. AlphaGo developed by Google got all the attention among all throughout AI history, it set off a trend for AI after it defeated a human Go master.

The relations of AI, Cloud and Big Data are closely linked and exist side by side. Cloud provides storage and computing platform for Big Data. If there is no applications or Cloud computing technology, the storage, analysis and release of these vast and diverse Big Data will encounter different levels of difficulties. AI is the advance application under the support of Big Data and Cloud. Vandia states that among the three technologies, Big Data is the focus of the development of smart city as AI and Cloud can be provided by general business organizations. Once the city embarks on opening Big Data to the public, citizens and business organizations could make use of AI system and Cloud services. Intelligent predictions and applications could be made to form a healthy commercial environment and thus assist effectively in the allocation and usage of the city's resources and accelerate the advent of smart era. 簡單來說,人工智能意指模擬人的智慧,像大腦般擁 有自我學習的能力。現今常用的圖像辨識、自動翻譯、 iPhone Siri通通運用了人工智能。其實,人工智能一詞早 於六十多年前已出現,更是第四次工業革命的主要推動 力,至今發展到第三階段。「前兩個階段之所以沒有引起 巨大迴響,最主要是因為沒有數據及強大的運算能力支 撐。」梁季笙說。如今,人工智能以雲端平台為基礎,利 用大數據資料進行各種智慧化分析,自動化便是人工智能 下的其中一個產物。人工智能史上最為矚目的,不得不提 Google開發的AlphaGo,與人類棋王在圍棋對奕中戰勝人 腦,掀起人工智能的熱潮。



人工智能、雲端、大數據的關係可謂相輔相成,唇齒相 依。雲端為大數據提供存儲和運算平台。如果沒有雲端運 算技術及應用,這些海量、多樣化的大數據的儲存、分析 及發佈,都會遭遇不同程度的困難。而人工智能則是在大 數據與雲端支持下的進階應用。楊智添表示三種科技中, 大數據是發展智慧城市的重點,皆因人工智能和雲端都可 以由一般商業機構提供。一旦城市開放了大數據後,便可 讓市民與商業機構利用人工智能系統與雲端服務,作出各 種智慧化預測和應用,形成良性的商業生態,進而幫助城 市管理者有效而合理地分配和使用城市資源,加速智慧時 代的來臨。

# 人才學術研究均有優勢

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香港在發展智慧城市及創新科技方面的起步,雖然較鄰近 國家如新加坡和南韓略遲,但在人才培育及學術研究方面 絕不遜於其他國家。根據《2018年全球創新指數》,全球 「最佳科技集群」中,「深圳-香港」地區是世界第二大 科技集群,排名僅次於日本「東京-橫濱」。楊智添指出



#### Advantages for Talent and Academic Research

Although the development of smart city and InnoTech in Hong Kong started later than neighboring countries such as Singapore and South Korea, we are never inferior to other countries in education and academic research. According to the *Global Innovation Index 2018*, Shenzhen-Hong Kong district is the world's second largest technology community, and is close behind to Japan Tokyo-Yokohama in The Best Technology Community in the world. Vandia points out that Hong Kong with the advantages of being a Free Trade Zone, having the rule of law and separate customs territory, together with the opportunities brought by Guangdong-Hong Kong-Macao Greater Bay Area, Hong Kong can make further use of every advantage and accelerate the development of smart city and assist more innovation companies to go international.

Government Chief Information Officer Mr. Victor Lam Wai-kiu, expressed on Alibaba Cloud [Infinity Summit 2019] that Hong Kong has solid InnoTech infrastructure which can ensure data privacy and information security. Among all 14 economies in Asia, Hong Kong ranks second in the Cloud Readiness Index and is deemed to be the ideal data center setup point. These advantages attract many enterprises to develop their data centers in Hong Kong. To illustrate, Alibaba Cloud has set up two data centers in Hong Kong since 2014 and is the first public Cloud service provider that enters Hong Kong. Liu even points out that Hong Kong is the very starting point for Alibaba Cloud to go international and plays an important role in the internationalization process of Alibaba Cloud.

Hong Kong possess a number of top technology companies, such as SenseTime, which develops AI technology. The company was founded by a team from the Department of Information Engineering in the Chinese University of Hong Kong. They developed the face recognition algorithms which adopt deep learning, with accuracy over 99% surpassing the accuracy of naked eye.



Smart・智城



香港擁有自由貿易港、法治、單獨關稅區等優勢,加上粵 港澳大灣區建設將帶來機遇處處,香港可望進一步發揮各 方面優勢,加速智慧城市發展,助更多創新公司走向國際。

政府資訊科技總監林偉喬先生早前在阿里雲「Infinity 2019生態峰會」上表示,香港具備穩健的創科基礎設施,能有效保障數據私隱和資訊安全,在亞洲區14個經濟 體中,本港的「雲就緒指數」高踞第二,是理想的數據中 心設立點。香港種種優勢吸引不少企業在港發展數據中 心,例如阿里雲從2014年開始,已在本港設立兩個數據中 心,是最早進駐香港的公共雲服務供應商。劉彬星更指出 香港是阿里雲國際化最早出發的地點,在阿里雲的國際化 進程中扮演重要作用。

香港更擁有不少頂尖的科技公司,例如開發人工智能技術 的商湯科技。該公司由香港中文大學工程學院團隊所創 立,研發了採用深度學習的新型人面識別系統,準確率超 過99%,遠超人眼。而商湯科技在成立3年間便於2017年 發展成估值達到10億美元以上的獨角獸初創企業。

梁季笙表示強勁的科研能力,需有足夠的人力資本支撐, 人才是發創新及科技業的關鍵,亦是香港其中一個優勢。 的確,香港的大學在《QS世界大學排名》有相當亮眼 的成績,計算機科學尤其優秀,排名第14位。在2017年 《泰晤士高等教育》發表其對人工智能學術論文的分析結 果中,香港在該領域的加權引用影響指數排行全球第三。 香港發布論文研究的數量雖然不及美國和中國多,但影響 力卻不容忽視,也是很多港人意想不到的成績,為培育香 港創科人才發揮重要作用。





In 2017, SenseTime became a unicorn startup company with over a billion-dollar valuation within three years.

Timothy states that strong ability in scientific research needs adequate support of talent and capital with talent as the key. This is one of the advantages of Hong Kong. Indeed, universities in Hong Kong have splendid rankings in *QS University Ranking*, especially in computer science being at the 14<sup>th</sup> place. *Times Higher Education Ranking* published its analysis on AI academic essay in 2017 and pointed out that Hong Kong's weighted reference counting index in AI ranked third globally, he adds. The number of research paper published in Hong Kong is less than the United States' and China's, but the influences are not to be overlooked as they often bring extraordinary success and play a role in nurturing Hong Kong talent.

Apart from nurturing talent, how to retain them and make use of the advantages are also essential. HKAI Lab was established in September 2018, it commits to supporting InnoTech and in nurturing talent. It is the first laboratory in Hong Kong to provide entrepreneurs with high performance computational resources and machine learning platform. Accelerator Program from HKAI Lab sponsors seed money to potential startups.

"The principal objective for setting up the lab is to promote development of Al industry in Hong Kong, to assist startups in commercializing their technologies and to stimulate innovative ideas. We hope to cultivate startup culture with vitality in Hong Kong, thus boosting the knowledge sharing in Al field," says Timothy.

# "ABC" Technology Set Off Trend for Business Transformation

Industrial transformation is the trend in nowadays digital economy. Vandia emphasized that the earlier companies use technology, the more successful they will be, from adopting "ABC" technology to digitalizing their operations for boosting the growth of innovation industry and from Empiricism in the past to smart operation of instant digital feedback. The sooner enterprises digitalize their operation, the better proficiency on the insights into opportunities and risks which could assist enterprises to operate and expand sustainably without being phased out.

除了培育,如何留住人才並充分發揮優勢也是關鍵所在。 於2018年9月成立的香港人工智能及數據實驗室(HKAI Lab)便致力支援創科、培育人才,亦是香港首個為創業 者提供高性能計算資源和機器學習平台的實驗室。實驗室的 「初創公司加速器計劃」更提供啟動資金予具潛質的初創。

梁季笙說:「設立實驗室的首要目的,當然是推動香港的 人工智能產業發展,協助初創把旗下技術商業化、激發創 新思維。我們期望在香港孕育充滿活力的創業文化,促進 人工智能領域的知識共享。」

## 「ABC」科技掀起企業轉型革命

產業轉型在現今數碼經濟時代已是大勢所趨,楊智添強調 越早擁抱科技,越有優勢,企業應正視「ABC」科技, 將企業運營完全數碼化,創造產業成長的新引擎。從過去 的個人經驗主義,到數碼即時反饋的智慧經營。越早完成 的企業,在洞察商機與風險的能力越發卓越,協助企業可 持續地經營和擴展而不被淘汰。

越來越多企業開始考慮使用雲端服務平台,作為企業的主要基礎服務架構。雲端服務供應商讓顧客有更多儲存數據的選擇,並且優化雲端服務的效率,讓不少顧客願意關閉他們的實體數據中心,轉為全雲端服務,或是把企業服務移到基礎設施即服務(laaS)上,如阿里雲就是全球三大laaS供應商之一,亦是中國最大的公共雲服務供應商。

阿里雲幫助本港各類企業積極擁抱數碼化轉型。如今正在 支援客戶進入更深入階段,幫助他們建立數碼化的商業系 統,達到全面的智慧化,這需要通過雲來解決資料和技術 的統一問題。劉彬星指出:「我們致力利用生態平台上的 優勢和經驗,向客戶證明建立全方位數碼化商業系統的好 處,有助企業達至真正而全面的數位化。」





More and more enterprises have started to consider using Cloud services platform as their principal base service structure. Many clients are willing to close their own entity data centers and use Cloud services as Cloud service provider allows more choices of data storage for clients and optimizes the service efficiency. Others moved their services to infrastructure as a service (laaS) when Alibaba Cloud is not just one of the top three laaS providers in the world but also the largest public Cloud service provider in China.

Alibaba Cloud helps local enterprises of all kinds to embrace digitalization. It is now assisting clients to a more advanced stage and helps with their constructions on digitalized commercial system in order to achieve intellectualization. These require Cloud to unify information and technology. "We strive at using the advantages and experience from the environment platforms and prove to clients the benefits of building an all-rounded digitalized commercial system which helps enterprises to achieve digitalization truly and fully," says Liu.

OpenRice is the most popular restaurants review site in Hong Kong, it is well-known among Hongkongers. In fact, it is also one of the successful examples of expanding business through Cloud services provided by Alibaba Cloud. The online business has now expanded to other Asia countries. At the very beginning, OpenRice set up its original website with the server of its own data center and Microsoft Windows platform. Yet, with the growth of users and applications increasing, its own server could no longer meet the needs of the business's expansion. The solution Express Connect for OpenRice provided by Alibaba Cloud is the local combined Cloud service which helps OpenRice to connect quickly, steadily and safely in between its own data center and Cloud data center. Express Connect provides a low-cost solution which not only supports a great number of application programming interface (API) but also helps customers to gradually move their business applications to Cloud. Liu says that Alibaba Cloud will continue to "strive for Hong Kong" by using its knowledge on technology and advantages. Starting from different categories such as mobility, safety, resources and environment to improve the city's infrastructure and operation standard, it has plans for the development of a smart city in Hong Kong.

We hope the government would keep on making good use of "ABC" technology, embracing InnoTech, and holding on to the advantages of Hong Kong to nurture talent and further support academic research in promoting the prosperity of smart Hong Kong.



「開飯喇」是香港最流行的食肆評價網站,港人對開飯 喇應該不陌生,它便是透過阿里雲提供的雲端服務而成 功擴展業務的例子。現今網站業務已擴展到亞洲多個國 家。當初開飯喇的舊網站依靠自身數據中心的伺服器和微 軟視窗平台而建立,但隨著用戶和應用數量快速增長, 自身伺服器難以滿足需要。阿里雲為開飯喇提供的本地混 合雲服務解決方案Express Connect,幫助開飯喇在自 身數據中心與雲數據中心之間實現高速、穩定且安全的連 接。Express Connect提供的低成本解決方案不僅支 持大量的客戶「應用編程介面」(API),也幫助客戶逐 步將業務應用程序向雲端遷移。劉彬星指出阿里雲會繼續 「為香港·搏到盡」,以其技術知識和優勢,從流動性、 安全性、資源和環境等範疇著手,改善城市基礎設施和提 升營運標準,為香港的智慧城市發展出謀獻策。

我們期望政府繼續善用「ABC」科技,擁抱創科,並把 握香港的優勢,培育人才,加大力度支持學術研究,推動 智慧香港蓬勃發展。



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MoU signing on non face-to-face eContract with Shandong partners 與山東合作方簽署「推進魯港非面對面電子合同 合作備忘錄」

On 5<sup>th</sup> December, under the witness of the Hong Kong Trade Development Council and Department of Industry and Information Technology of Shandong Province, Smart City Consortium, The Chinese Manufacturers' Association of Hong Kong and Certizen Limited signed a MoU with representatives of Shandong partners on the application of non face-to-face eContract for the development of cross-border financial connectivity.

12月5日,在香港貿發局和山東省工業和信息化廳見證下,智慧 城市聯盟夥同香港中華廠商聯合會和翹晉電子商務有限公司, 與山東合作方代表簽署「推進魯港非面對面電子合同合作備忘 錄」,共同推動跨境金融互聯互通發展。





Economic Summit 2019 香港經濟峰會2019



Economic Summit 2019: Roadmap to Hong Kong Success, jointly organized by Hong Kong Economic Journal and Metro Finance, was successfully held on 10<sup>th</sup> December. Dr. Winnie Tang, Founder and Honorary President of SCC, attended the event and gave a talk to discuss the opportunities of smart city development in Guangdong-Hong Kong-Macao Greater Bay Area with more than 300 leaders from different industries.

由《信報》和新城財經台主辦的香港經濟峰會2019已於12月10 日完滿舉行。聯盟創辦人及榮譽會長鄧淑明博士代表聯盟出席 及發表演講,與場內300多位行業領袖一同探討智慧城市在大灣 區的發展機遇。





# "Smart@Hong Kong: Our Smart City Journey" conference 「智慧香港:我們的智慧城市」研討會

The Hong Kong Productivity Council with the Hong Kong Science and Technology Parks Corporation as well as SCC, jointly organized the "Smart@Hong Kong: Our Smart City Journey" conference on 10<sup>th</sup> January. Dr. Winnie Tang, Founder and Honorary President of SCC, attended the opening ceremony. The conference showcased the latest smart city initiatives and their innovative applications for improving quality of life.

香港生產力促進局與香港科技園公司於1月10日舉辦「智慧香 港:我們的智慧城市」研討會,聯盟為活動協辦單位之一。 聯盟創辦人及榮譽會長鄧淑明博士代表聯盟參加開幕式。研討 會展示了嶄新的智慧城市發展計劃,呈現各項有助提升市民生 活質素的創新應用方案。





The GREAT Smart Cities Connect Conference 2019 – The Greater Bay Area



The GREAT Smart Cities Connect Conference 2019 – The Greater Bay Area was successfully held during 11<sup>th</sup> to 12<sup>th</sup> January. The conference aimed at fostering the development of cities in the Greater China region as smart cities. SCC was one of the event organizers, Dr. Winnie Tang, Founder & Honorary President of SCC and Mr. Gary Yeung, Vice-President of SCC delivered welcoming speeches at the opening of the conference and the dinner respectively.

Moreover, Dr. Kenneth Tang, Chairman of SDI Committee of SCC, delivered his keynote speech. Mr. Wilson Kwok, Deputy Honorary Secretary of SCC, gave a talk in the second session of Technical Presentation and shared his insights on "How HK Electric evolve from corrective and time-based maintenance in the past to condition-based maintenance with the help of big data analytics".

The GREAT Smart Cities Connect Conference 2019-The Greater Bay Area於1月11日至12日完滿舉行,活動旨在促進大中華地區智慧城市的發展,聯盟為活動主辦單位之一。

聯盟創辦人及榮譽會長鄧淑明博士和聯盟副會長楊文銳先生分 別於活動開幕式及晚宴上致歡迎詞。另外,聯盟空間數據基礎 設施委員會主席鄧兆星博士應邀作主題演講;聯盟榮譽副秘書 長郭偉信先生在第二環節技術演講中,分享港燈如何透過大數 據分析,使維修由過往的故障診斷,發展成狀態監測的預測性 管理。

Smart·智城 VISION

# 活動回顧 Event Review



# **Smart City Business Linkage**

Together with other cooperation units, Smart City Consortium hosted Smart City Business Linkage on 15<sup>th</sup> January. A number of top notched U.S. companies were invited to present smart city development to share their insights and practices.

On behalf of SCC, Dr. Winnie Tang, Founder & Honorary President, delivered an opening speech. SCC's Vice President Ir. Dr. KF Tsang and Chairman of Research & Blueprint Committee Mr. Daniel Chun, served as moderator and panelist respectively. The panel discussed mitigating risks through IoT and cybersecurity technology in smart city development.

聯盟聯同多間合作機構於1月15日舉辦了Smart City Business Linkage研討會。活動中邀請不少致力於智慧科技發展的美國公 司,在研討會上分享經驗。

聯盟創辦人及榮譽會長鄧淑明博士發表開幕詞,而聯盟副會長曾 劍鋒博士與研究及藍圖委員會主席秦仲宇先生在研討會分別擔任 主持和講者,一同討論如何應用物聯網及網絡安全,以降低智慧 城市發展的風險。





Alibaba Cloud [Infinity Summit 2019]@ Hong Kong 阿里雲「Infinity 2019生態峰會」

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Alibaba Cloud joined SCC as a member which was officially announced in the Alibaba Cloud [Infinity Summit 2019]@Hong Kong on 17<sup>th</sup> January. Hon Elizabeth Quat, Founder & Honorary President of SCC and Mr. Liu Binxing, Alibaba Cloud General Manager of HTK Region signed officially and pledged to jointly contribute to the development of smart city in Hong Kong. Mr. Gary Yeung, Vice President of SCC, also shared his insight on Hong Kong Smart City Today & Tomorrow in the panel discussion.

聯盟創辦人及榮譽會長葛珮帆議員及阿里巴巴集團旗下的雲計 算平台阿里雲港澳及韓國區總經理劉彬星先生,於1月17日阿里 雲「Infinity 2019生態峰會」上,公布阿里雲正式加入智慧城市 聯盟,未來將共同為香港的智慧城市發展出謀獻策。

同時,聯盟副會長楊文銳先生更在峰會上的討論環節,與其他 嘉賓暢談智慧城市的現況及前景。





Smartcity: How Big Data Reinvent Hong Kong Future Conference 「智慧城市:大數據如何再創造香港未來」研討會

SCC and Lingnan University jointly hosted Smartcity: How Big Data Reinvent Hong Kong Future Conference on 23<sup>rd</sup> January at the Hong Kong Productivity Council. Professionals from the public utilities, infrastructure and innovative technology industries were invited to share their insights on the future of big data and technology applications, thus enhancing the awareness of the public and enterprises on the future development of big data and smart city in Hong Kong.

於1月23日,聯盟與嶺南大學在香港生產力促進局大樓完滿舉 辦「智慧城市:大數據如何再創造香港未來」研討會。是次活 動邀請了來自公用事業、基礎建設以及創新科技業的高級管理 人員,就本港未來的大數據及科技應用作分享,以提高社會大 眾及企業對大數據和本港未來智慧城市發展方向的認識。





# The Connected Cities Conference

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The Connected Cities Conference, hosted by KPMG with SCC as one of its strategic partners, was successfully held on 24<sup>th</sup> January. The Conference showcased numerous innovations for the next generation of city livings. In the Smart Cities Panel discussion, Ms. Rosana Wong, Vice President of SCC, shared her insights on smart city.

In the Fireside Chat, Ir. Dr. KF Tsang, Vice President of SCC, chatted with Mr. Eric Chong, President & CEO of Siemens, on "IoT for a Sustainable Connected City".

During the Breakout Session-Designing Hong Kong, SCC hosted a breakout under the theme: "The future of Healthcare and the ageing population in the GBA".

由畢馬威會計師事務所舉辦的The Connected Cities Conference 已於1月24日完滿結束,聯盟為是次活動的策略伙伴之一,活動 展示了未來城市生活的創新科技應用。聯盟副會長黃慧敏小姐代 表聯盟出席智慧城市研討會,與嘉賓分享對智慧城市的看法。

在爐邊間談環節,聯盟副會長曾劍鋒博士與西門子行政總裁鍾漢 明先生一同就「可持續互聯城市的物聯網發展」進行討論。

在分組會議環節,聯盟為「粵港澳大灣區未來醫療保健和人口老 化」主題會議擔任主持。

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# "Smartcity: How Big Data Reinvent Hong Kong Future" Conference

# Work Closely with the Academic Community to Build A Smarter Hong Kong

# 「智慧城市:大數據如何再創造香港未來」研討會 與學界緊密合作 締造更智慧香港

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Big data is an integral part of smart cities and innovation development, and is also relevant to people's lives. To raise the awareness of the community, students and those in the industry about big data and the future smart city development, Smart City Consortium (SCC), in collaboration with Lingnan University, hosted the "Smartcity: How Big Data Reinvent Hong Kong Future" conference at the Conference Hall of Hong Kong Productivity Council on 23<sup>rd</sup> January. The theme of the conference was to explore how big data could practically be applied in daily activities and how it addressed the existing problems of the city through the sharing of experience and expertise from the industry experts.

The conference invited speakers from public utilities, infrastructure and innovation and technology industries, including the Office of the Government Chief Information Officer (OGCIO), the Hospital Authority, the Airport Authority, the Hong Kong Observatory, HK Electric and MTR, to share their views about the future development of big data and technological applications in Hong Kong. The topics covered issues such as big data and medical applications, digitalized transportation, artificial intelligence (A.I.), cloud systems and electronic commerce. Conference participants exchanged the knowledge and the insights on the trend of application, to promote Hong Kong's smart city development. 大數據是智慧城市和創新發展不可或缺的元素,更與市民 生活息息相關。為提高社會大眾、學生及業內人士對大數 據及未來智慧城市發展的認識,智慧城市聯盟聯同嶺南 大學,於1月23日假香港生產力促進局大樓舉辦「智慧城 市:大數據如何再創造香港未來」研討會,讓業界和與 會者分享經驗和專業知識,並對大數據進行深入討論, 以探索此技術在生活上的實際應用和如何改善現有的城市 問題。

是次會議邀請了來自公用事業、基礎建設以及創新科技業 的講者,包括政府資訊科技總監辦公室、醫院管理局、 機場管理局、天文台、港燈、港鐵等,就本港未來的大 數據及科技應用作分享。演講主題涵蓋大數據與醫療應 用、數據化交通運輸、人工智能、雲端系統和電子商貿等 議題。各界於會上就大數據的知識和應用方向進行交流, 協力推動香港發展智慧城市。





**Big Data Brings New Opportunities** 

Speaking at the welcoming and opening remarks respectively, Mr. Eric Yeung, President of SCC, and Dr. Louisa Lam, Chief Information Officer and University Librarian of Lingnan University, both pointed out the importance of big data for Hong Kong's smart city development. Dr. Lam suggested that the big data revolution was upending traditional thinking, and many industries were gradually transformed under the influence of digital disruption, which confirmed its importance. She also pointed out that in the academic circles, how to make full use of different data to develop knowledge had also become the key to the future development of universities. At the same time, Mr. Yeung believed that the importance of big data lied in big data analysis, and as all walks of life produced thousands of data every day, using big data analysis could provide timely strategic solutions, so the impact of big data should not be overlooked!

# The Progressive Implementation of Government's Open Data Facilitates the Mastering of Real-time Information

Recently, the government has taken the initiative to apply technologies including big data and A.I. in many public services, such as replacing identity cards to promote the progress towards a smart city. As part of the government's smart city construction, opening up the data which mentioned in *the Hong Kong Smart City Blueprint*, released at the end of 2017, is another priority of work to achieve Smart Government.

In his keynote speech, the Government Chief Information Officer, Mr. Victor Lam Wai-kiu, said that the government would spare no effort to promote smart cities. Although it had just commenced at this stage, several important measures had been implemented with significant leaps in open data. This year, the OGCIO newly opens up over 650 new datasets, about 4,000 data in total, on the government portal data.gov.hk for free use by the public and application development by the public and private sectors.

Mr. Lam added that to facilitate public access to and application of the data, the OGCIO will launch a City Dashboard on the data.gov.hk website by the end of 2019. Real-time city data, such as traffic flow, availability of parking spaces, weather and temperature, is expected to be displayed in map and chart form.

He expected further implementation of open data policies within this year, being more systematic and transparent in opening data by government departments so as to promote the sustainability of open data.

## 大數據開拓未來新機遇

聯盟會長楊全盛先生與嶺南大學資訊科技總監兼圖書館館 長林美珍博士均於歡迎詞中,指出大數據對香港智慧城市 發展的重要性。林博士認為大數據革命正顛覆傳統思維, 不少產業受到「破壞性創新」的影響而逐漸轉型,可見其 重要性。在學術界方面,如何充分利用不同數據去開拓知 識,亦成了未來大學發展的關鍵。而楊先生則認為大數據 的重要性在於大數據分析,各行各業每天產生成千上萬的 數據,運用大數據分析,便能夠提供及時的策略性解決方 案,故大數據的影響力實不容忽視!



# 政府開放數據逐步落實 有助掌握實時資訊

政府現時已在眾多公共服務中,主動嘗試引入大數據和人 工智能等技術,如更換新的智能身份證,以推動社會邁向 智慧化。而開放數據則是港府智慧城市構建中的另一重點 工作,2017年底公布的《香港智慧城市藍圖》,亦將開放 數據列為邁向「智慧政府」的首要措施。

政府資訊科技總監林偉喬先生於主題演講中,指出政府在 推動智慧城市上不遺餘力,雖然現階段才剛剛起步,但已 落實不少重要措施,尤其在開放數據方面有重大躍進。 政府資訊科技總監辦公室於今年在「資料一線通」網站開 放超過 650個新的數據集,包括共約 4,000 項數據,免費 予公眾瀏覽及工商業界作開發程式之用。

林先生補充指,為方便市民查看及應用數據,政府將於 2019年底,在「資料一線通」網站上推出「城市儀表板」, 以地圖及圖表形式實時顯示城市數據,如交通流量、車位 空置、天氣等。

他期望今年內能進一步落實開放數據政策,提升政府部門 在開放數據的透明度和更系統化,以促進開放數據的可持 續性。







# HKPC's Smart Solutions: Charting New Directions for Smart Mobility Infrastructure

# 生產力局智能方案 策劃智慧出行基建新路向

The Hong Kong SAR Government strives to build Hong Kong into a world leading smart city with Smart Infrastructure as an essential element for its realization. Since the release of the *Smart City Blueprint for Hong Kong*, the government has implemented numerous plans and measures. These include the launch of related strategic data infrastructure within the next two years, such as electronic identity (eID) and Next Generation Government Cloud, to support the transmission of big data. For Smart Mobility, upgrading existing lampposts to smart lampposts that cover the whole city is the crucial starting point to complete the Internet of Things (IoT). 香港特區政府致力把香港構建成領先世界的智慧城市, 當中「智慧基建」成為實踐智慧城市的關鍵。《香港智慧 城市藍圖》公布至今,政府已落實不少計劃和措施,包括 在未來兩年內推出相關的主要數碼基建,例如「數碼個人 身份」(elD)或「新一代政府雲和大數據分析平台」,以支 持城市大數據的流通。在智慧出行方面,把傳統街燈升級 為智能街燈,組成遍佈整個城市的物聯網(IoT),更成為 發展智慧城市的重要起點。





#### 24/7 remote control management on smart street lamps

Street lamps are seen everywhere. Aside from providing lighting, have you ever thought they could be related to our other daily activities? With the high penetration rate of street lamps in Hong Kong, doubling their function as the network for smart city infrastructure, data transmission and development of IoT makes perfect sense. The Hong Kong Productivity Council (HKPC) earlier assisted the Highways Department on the development of Smart Street Lamp Monitoring System. It uses IoT's wireless network as the basis of smart street lamp that adopts LoRa, which features long range, low power consumption and anti-interference in wireless transmission technology.

Dr. Lawrence Cheung Chi-chong, HKPC's Director of Technology Development, states that LoRa's signals might be blocked by tall buildings in the past, but a new solution is now in place to solve this limitation and overcome an urban environment packed with high-rise buildings. Hence, even in a densely built city like Hong Kong, the signals can still travel freely.

"With technology advancement, we could gradually integrate more high-tech products into smart living," said Dr. Cheung.

Currently, street lamps are turned on or off automatically using light sensors but the checking out for faulty lamps still relies on visual inspection by patrolling staff. After the upgrade, the new smart street lamp can transmit real-time current and voltage data through the wireless network for remote monitoring of the lamps' operation. Apart from being able to turn on and off the street lamps and adjust the lights' intensity with mobile devices, the operators can also notify engineering personnel through the system to promptly repair the faulty lamps, shorten their downtime and ensure road safety.

#### Lighting up the city with Big Data

On top of making street lamp management smarter, the smart street lamp can also become one of the integral components of smart infrastructure on the road. By adding sensors to it, real-time city data such as traffic flow, air quality and weather condition can be collected for sharing with government departments and transmission to the Internet of Vehicle (IoV) which can enhance road usage and alleviate traffic congestion.





# 智能街燈全天候遙距管理

街燈隨處可見,除可用作照明外,有沒有想過街燈其實跟 日常生活息息相關呢?香港街燈滲透率極高,善用街燈作 為智慧城市基礎建設、傳輸、發展物聯網的網絡,令它的 效益倍增自然非常合適。香港生產力促進局(生產力局) 早前協助路政署開發「智能路燈監察系統」,以物聯網無 線網絡為基礎的智能街燈,特別採用了長距離、耗電量 少、抗干擾的LoRa無線傳輸技術。生產力局科技發展副總 裁張梓昌博士指出,從前LoRa的訊號可能會被建築物阻 隔,不過現時已有方案突破LoRa技術的限制,克服高樓大 廈林立的城市環境,即使在香港般高密度的城市,也能確 保訊號暢通無阻。

張博士說:「隨著科技的進步,我們自然可以利用更多高 科技產品融入智慧生活。」

目前,傳統街燈主要靠光暗感應自動開關,不過街燈有否 故障就只有靠巡查人員以肉眼作判斷。將傳統街燈提升為 智能街燈後,可經由無線網絡作即時傳送電流、電壓等數 據,遙距監控街燈的運作。工作人員除了可利用手機程式 開關街燈和調校光暗,在發生故障時更可透過系統通知工 程人員盡快進行維修,縮短故障時間,確保行車安全。

#### 大數據連繫生活 點亮智慧未來

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配備感應器的智能街燈,除了令街燈管理更有「智慧」, 更搖身一變成為道路上不可或缺的智慧基建。智能街燈 在未來還可協助收集實時交通數據、探測空氣質素、收集 氣象數據等,集多項功能於一身。所收集的各類型城市數 據與政府部門共享及傳送到車聯網,有助優化道路設計, 紓緩交通擠塞情況。

# 企業專訪 Corporate Interview

Dr. Cheung states that big data conduces to the planning and development of smart city, with data relating to people movement, logistics and transport being the most useful. Smart infrastructure supports the flow of the city's big data and promotes the application of big data analytics by government departments, public and private organizations, allowing for the full flourishment of technology solutions in the city and building of a better living environment for its citizens.

HKPC currently connects over 200 sets of street lamps in San Po Kong and Kai Tak by a wireless network to enhance their management significantly. Smart street lamps are the first part of the smart lampposts. Starting from this year, the government will progressively introduce the Multi-functional Smart Lampposts. Installation of around 400 new smart lampposts will start in four districts including Tsim Sha Tsui, Central and Admiralty, Causeway Bay and Wan Chai, Kwun Tong and Kai Tak to promote another set of smart infrastructure, by bringing Hong Kong one step closer to being a smart city.

#### Expand charging scheme for green vehicles' development

The world is constantly making progress, but, currently, we appear to be running out of energy and resources. To ensure the sustainability of our city, development of green smart technologies is essential with electric vehicles being one of the options.

There are more electric vehicles on the road than before. According to government statistics, as at the end of 2018, there were a total of 11,496 electric vehicles in Hong Kong. The number has increased drastically when compared to less than 100 at the end of 2010. The ease of access to charging facilities affects the popularity of electric vehicles. As at the end of 2018, there were about 2,166 chargers in Hong Kong, including around 824 medium speed chargers, 24 CHAdeMO high speed chargers and 498 high speed chargers. It is obviously insufficient to meet the demand of more than 10 thousand electric vehicles in Hong Kong.

For this reason, HKPC has been working with its subordinate, the Automotive Parts and Accessory Systems (APAS) R&D Centre, in developing a variety of charging technologies for electric vehicles, from semi-quick, quick, mobile, wireless to portable charging. They also assist the commercialisation of these R&D results for local enterprises through technology transfer to address the problem of charging difficulties faced by local electric vehicle user drivers and, thus, to promote the use of electric vehicles in Hong Kong. They have also developed charging facilities monitoring and management system as well as smart load adjustment system to enhance the management of charging service and make more effective use of electricity in car park, resulting in more parking spaces to be fitted with



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張博士認為大數據絕對有助智慧城市的規劃和發展,尤其 以人流、物流和交通的相關數據最為有用。智慧基建支撐 城市大數據的流通,推動政府部門和公私營機構應用大數 據分析,讓城市中的技術方案更加發揮得淋漓盡致,為市 民帶來更加美好的生活配套。

現時,生產力局於新蒲崗和啟德一帶,為200多支街燈加裝 了無線網絡,大幅提升街燈管理的效率。智能街燈是智慧 燈柱的首期部分,由今年起,政府將會陸續引進多功能智 慧燈柱系統,先導計劃將包括尖沙咀、中環和金鐘、銅鑼 灣和灣仔、觀塘和啟德4個區域,安裝約400支智慧燈柱, 落實智慧基建,踏出邁進智慧城市的第一步。



# 先進充電方案 推動綠色電動車發展

在世界不斷進步的同時,能源和資源亦逐漸枯竭;要使我 們的城市持續發展,就需要發展綠色智慧科技,而電動車 是其中一個方案。

香港道路上的電動車越來越多,根據政府統計,截至2018 年底,全港共有11,496部電動車,對比2010年底少於100 輛,增幅驚人。市場上對於充電設施的需要絕對影響電動 車的普及化進程。截至2018年底,香港約有2,166個充電 器,包括約824個中速充電器,24個CHAdeMO快速充電 器,498個快速充電器,相比全港逾萬架電動車的需求, 自然是不敷應用。

針對這情況,生產力局與屬下的「汽車零部件研究及發展中心」多年來致力開發各式各樣的電動車充電技術, 從中速、快速、流動、無線,以至手提式的充電技術等, 並透過技術轉移協助本地企業進行商品化,幫助本港電 動車用戶解決「充電難」的問題,促進電動車在香港的應 用。同時亦研發了充電設施監測和管理系統與智能電力負 荷調節系統,優化充電服務的管理,有效使用停車場的電 力,使更多車位配備充電設施。此外,生產力局與研發中 心還積極推動綠色公共和商用運輸發展,開發電動單層巴 士、純電動16噸勾斗車、插電式混合動力客車、換電小巴 等新能源重型車輛。





electric vehicle charging facilities. Besides, HKPC and APAS have been actively promoting the development of green public and commercial transport, developing new energy-powered heavy vehicles, such as electric single-decker buses, 16 tonnes pure electric trucks, plug-in hybrid electric vehicles and vans with quick battery exchange installation.

## Cooperation between the government and industries is the key to smart city

With the high-variety, low-volume market trend, many major manufacturers have already begun the digitalisation of their supply chains to create smart factories and a smart production environment by fully utilizing information technology, the Internet, IoT and mobile smart devices. Dr. Cheung points out that the Hong Kong industries need to learn how to connect their existing systems and information for gradual process restructuring and installation of automated equipment and smart systems, in order to establish firm foundation for an all-rounded smart city.

To promote the development of smart city successfully, cooperation between the government and stakeholders is indispensable. Together with appropriate regulations and promotions, smart city is feasible. Dr. Cheung indicates that HKPC is very willing to be the intermediary, becoming an important promoter and technical consultant behind the development of smart environment in Hong Kong.

"Apart from promoting the reindustrialisation of local businesses, HKPC also utilizes its professional skills and smart elements to enable businesses to realise sustainable smart development and achieve higher operational efficiency," says Dr. Cheung.

HKPC will also continue to spare no effort in supporting the shortterm, medium-term, long term plans and policies of the *Smart City Blueprint for Hong Kong* through its diverse industry support services such as environmental management, smart transport application development, information security and smart talent, launching various support measures to further the development of smart city infrastructure.

# 發展智慧城市 政府業界需群策群力

隨著市場走向款多量少,不少大型生產商已開始在其供應 鏈引入資訊科技,利用資訊科技、互聯網、物聯網及流 動智能裝置,打造智能工廠及智慧生產環境。張博士指出 香港業界需要懂得如何把現有不同系統和資訊串連起來, 逐步改革流程、配置自動化設備及智能系統,為邁向全方 位智慧城市打穩基礎。

要成功推動智慧城市發展,政府與不同界別的緊密合作實 不可或缺,再配合適當的法規與推廣,才能成事。張博士 表示生產力局非常願意作為中介點,成為香港智慧環境發 展背後的一個重要推動者和技術顧問。

張博士說:「除了在推動本地企業再工業化,更利用我們 的專業技術加入智慧元素,讓企業能夠實現可持續智慧發 展,提升營運效益。」

生產力局亦會繼續全力配合《香港智慧城市藍圖》提出的 短、中、長期計劃和政策,透過多元化的產業支援服務, 包括環境管理、智能交通應用研發、資訊保安和智慧人 才,推出各式各樣輔助措施,促進智慧城市基建的發展。



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# Comments from Smart City Consortium on The 2019-20 Budget

# 智慧城市聯盟就 《2019至20財政預算案》的回應

#### Good News: More Spotlights On I&T Development To Sharpen Our Edges

Smart City Consortium is delighted with the 2019 Budget Speech delivered by our Financial Secretary on 27 February 2019, which places great emphasis on innovative technologies to strengthen our competitiveness, adopts pragmatic approaches to implement the blueprint stated in the Chief Executive's policy address, and offers financial stimulus packages to boost I&T development in Hong Kong. In this year, our government will allocate additional financial assistance for I&T development on the basis of the Budget earmarked last year. SCC pledges our support to all the measures stated in the Budget Speech, including tax concessions for enterprise investments in R&D activities, I&T talent development, talent acquisition for local I&T development, capital injection into a wide range of innovative technology funds, promotion of learning and applying innovative technologies for entrepreneurship among teenagers, and motivation of I&T elements across the sectors.

"As the most representative IT professional association in Hong Kong, Smart Clty Consortium is committed to the Smart City initiatives to strengthen Hong Kong's connectivity and boost our edges," said Mr. Eric Yeung, President of SCC.

"We are glad to see that our government has shifted its focus to stress the importance of innovation and technologies in raising Hong Kong's competitiveness. A Smart Government Innovation Lab will be set up as mentioned in the Budget, to drive industry engagement in helping the government to adopt information technologies for better public services delivery, to improve public services, to foster cooperation between the private and public sectors, and to create new possibilities for local startups and SMEs.

"We are also pleased to realize that our government is preparing for 3 smart city infrastructure projects, including the electronic identity for all Hong Kong residents, installation of multi-functional smart lampposts, optimization of government cloud services and the erection of a big data analytics platform. Funds of more than \$900 million will be injected into the above projects, which are expected to be finished in the coming 2 years.

"Smart city initiatives must have the backing of digital infrastructures and systems. Our government has obtained plenty of relevant data from collecting, possessing and analysing geographical information. The Development Bureau has teamed up with the Innovation and Technology Bureau and several units that often use geospatial data to smooth the way to construct a spatial

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#### 樂見政府重視創新科技提升香港競爭力

智慧城市聯盟對財政司司長於2019年2月27日發表的 《2019-20財政預算案》,重視創新科技以提升香港競 爭力,並能有效落實特首林鄭月娥在《施政報告》中的藍 圖,財政上大力推動香港創新科技發展,感到十分鼓舞。 特別是在去年預留的財政預算基礎上,政府今年再額外 撥款支援創科發展。聯盟對財政預算案中,提及的各項 措施,包括稅項寬免以鼓勵企業投資研發、培訓創科應用 之才、引進專才協助本地發展創科、注資各項創新科技基 金、鼓勵年輕人學習創新科技及用以創業、在各行各業運 作中推動創新科技元素,均表示支持。

聯盟會長楊全盛表示:「智慧城市聯盟作為本港最具代表 性的資訊科技專業團體,以推動香港發展智慧城市令城市 更便利及具競爭力為己任,我們樂意見到政府改變思維, 重視創新科技對提升香港競爭力的重要性。在本年度的財 政預算中,政府會成立智慧政府創新實驗室,讓業界參與 和協助政府引入資訊科技,改善公共服務,推動公私營合 作,並為本港初創企業和中小企創造商機。

「另外,我們樂見政府正在籌備3項智慧城市基礎建設項 目,包括為所有本港居民提供數碼個人身份、安裝多功能 智慧燈柱,以及提升政府雲端服務和設立大數據分析平 台;並為上述項目投放超過9億元,將在未來兩年陸續 完成。

「在發展智慧城市方面,必須得到數碼基建及軟件的配 合。政府通過收集、處理及分析地理資訊等,掌握了大量 的相關數據。發展局正聯同創科局和多個經常使用地理空 間數據的政府部門共同推動建立空間數據共享平台,讓地 理空間資訊得以整合、互通和共享,配合民間開發智慧城 市的各種應用程式,可協助政府各部門規劃和制訂政策。 於預算案內亦已預留3億元加快發展數碼基礎設施,以便 利地理空間數據的發放、使用及創新應用。平台預計可在 2022年底前全面投入服務,加上分階段推出高質素的全 港三維數碼地圖,為公私營機構提供更多及更方便搜尋和 使用的空間數據。



data sharing platform which facilitates the collation, connections and sharing of the data. By integrating various smart city applications developed by the private sectors, the platform can streamline policy planning and formulation among the authorities. There will also be \$300 million earmarked to accelerate digital infrastructure development for better use, dissemination and innovative applications of geospatial data. The spatial data sharing platform, which is expected to be fully available by the end of 2022, and the high-quality 3D Hong Kong digital territorial maps to be released in phases offer both the public and private sectors various effective means to search and use spatial data.

"The whole world fixes its eyes on the fifth generation of mobile network (5G) development. 5G network, which is characterized by its high-speed transmission, high capacity, high reliability and low latency, can open up huge possibilities for various commercial services and Smart City applications in the long run. Government will assign and auction spectrums in batches to prepare for the development of 5G.

"On the other hand, our government strives to break down the barriers against I&T development and to give more leeway for the procurement of innovative products and services. The proinnovation government procurement policy to be introduced in this coming April will give a greater chance of winning to tenderers who submit innovative proposals. As a critical player in I&T development, the Policy Innovation and Co-ordination Office has already took steps to review the laws that hinder I&T development. SCC firmly supports these 2 initiatives.

"Furthermore, the government announced the extension of the Corporate Venture Fund administrated by the Hong Kong Science and Technology Parks Corporation to \$200 million and the funding earmark of \$5.5 billion for Cyberport 5 development to accommodate more IT companies and startups, to solidify our support for startups and to spur the growth of the digital ecosystem. Other fund injections will assist local startups and local R&D activities, and to spur talent development and industrial automation. In particular, funding will be provided to establish 2 innovative clusters specialized in 'artificial intelligence and robotic technologies' and 'healthcare technologies', where leading universities and institutions around the world gather to conduct R&D activities.

"Measures will also be taken to bring in more innovative elements into different industries. For instance, \$800 million will be allocated to sponsor universities, key laboratories and engineering research centres to undertake R&D activities and to convert R&D results, while the funding ceiling for each university under the Technology Start-up Support Scheme for Universities (TSSSU) will be increased to \$8 million. Our government will also increase the monthly allowances under the Researcher Programme to attract more local graduates into the I&T industry. The maximum funding

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「至於第五代流動技術(5G)的發展則屬於全球矚目的項 目。5G具備高速、高容量、超可靠和低時延的技術特點, 長遠會為各種商業服務和智慧城市的應用帶來巨大潛力。 政府會分批指配及拍賣不同頻帶的頻譜,為發展5G網絡的 數碼基建和服務作準備。

「此外,政府致力為創科發展拆牆鬆綁,並為採購創科產品和服務營造更大的空間。政府於今年4月推出的創新採購政策會,增加具創新建議標書的中標機會。對創科發展 有舉足輕重影響的是政策創新與統籌辦事處亦已展開工 作,檢討窒礙創科發展而不合時宜的法例。聯盟對此兩項 行動表示極力支持。

「除了把科技園公司『科技企業投資基金』擴大至2億 元,及對數碼港預留55億元發展數碼港第五期,以容納更 多科技公司和初創企業,加強支援初創及促進數碼科技生 態的發展外;政府又作出多項注資撥款,扶助本地創科企 業、本地科研、人材培育及工業自動化。其中,推展兩個 專注『人工智能及機械人科技』和『醫療科技』的創新平 台,匯聚世界頂尖院校及機構進行研發合作。

「同時,又鼓勵在不同行業引進創科運作,例如撥款8億 元,支持大學、重點實驗室及工程技術中心進行科研及研 發成果轉化,把『大學科技初創企業資助計劃』每所大學 資助上限倍增至800萬元;提高『研究員計劃』下研究員 每月津貼,吸引本地畢業生投身創科行業;延長『博士 專才庫』及『研究員計劃』的資助期上限;資助本地企 業人員接受高端科技培訓等等,均顯示出政府對創新科 技的重視。」



# 回應2019-20財政預算案 Response to The 2019-20 Budget

period for both the Researcher Programme and the Postdoctoral Hub Programme will be extended so as to sponsor high-end technology trainings for local employees. The above approaches reflect our government's emphasis on innovative technologies."

# Endorse The Emphasis In Talent Development And Attractions for World-Class IT Enterprises

Mr. Yeung continued to highlight some key measures from the 2019 Budget Speech, such as the launch of the Faster Payment System for payment of government bills and fees, and issuance of the virtual bank licenses, while the Academy of Finance will be set up in the mid-2019 as a cradle of financial leaders. These approaches can not only attract world-class R&D institutions and IT enterprises to undertake midstream and downstream R&D projects in Hong Kong alongside local universities and R&D institutions, but also nurture more skilled workers for the Hong Kong I&T industry. SCC therefore pledges our support for these approaches, which we believe would drive our IT development.

SCC would also like to propose the following recommendations to our future government:

1. We affirm our support for raising the subsidy ceiling of the Continuing Education Fund (CEF) from \$10,000 to \$20,000 per person. To promote lifelong learning, we expect our government to provide the subsidy of up to \$10,000 every 10 years for an unlimited period of time.

2. Reinforce enterprises with weighted voting rights structures, biotech companies with no income track record, and operators of "artificial intelligence and robotic technologies" and "healthcare technologies" innovative platforms to list in Hong Kong. Though it might be risky, it would still be a good attraction for overseas world-class technology enterprises to start their business in Hong Kong.

3. Formulate explicit regulations at the time of granting virtual bank licenses. Rights and obligations of the bank and its clients should be clearly stated in terms and conditions.

4. Provide support in areas such as 5G technology development, industry development, education and on-job training to boost the Smart City initiatives.

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# 讚賞政府重視培養人材 吸引世界頂尖科技企業來港

楊全盛續指出,財政預算案中,特別提出將推行以 「轉數快」繳交政府賬單及付款、發出虛擬銀行牌照, 又在今年中成立金融學院,培育金融業領袖人才等措施, 均可吸引世界頂尖的科研機構和科技企業來港,與本地大 學及科研機構合作,進行更多中下游研發項目,為香港匯 聚及培育更多優秀的科技人才。對此,聯盟表示支持,並 相信此舉有助推動香港資訊科技的發展。

此外,智慧城市聯盟建議政府在未來可考慮以下四點:

 支持政府增加持續教育基金由每人一萬至二萬。期望 未來政府可考慮以十年為一週期,每週期以一萬元為限, 不設週期限制,鼓勵終身學習。

2. 鼓勵大型的「同股不同權」企業和未有收入的生物科技、「人工智能及機械人科技」和「醫療科技」的創新平台企業,申請來港上市。雖然有風險,但可吸引海外頂級科技企業來港發展。

3. 發出虛擬銀行牌照時清楚制訂守則,在章則及條款內列 明銀行與客戶雙方的權利及義務。

4. 5G技術的開拓、產業發展、教育和就業培訓等方面作出 適當配合,以推動香港發展智慧城市整體發展。



# **Reimagining Financial Service Through Technology**

The BOA Financial Group of related companies ("Group") was founded with the aim to provide purpose-oriented, high-quality and user-friendly financial services to its clients around the world, through innovative use of advanced technology to enhance customer experience and ensure regulatory compliance. At present the Group's service scope includes banking and financing, securities dealing, insurance agency and soon corporate finance and asset management.

10

![](_page_26_Picture_3.jpeg)

![](_page_26_Picture_4.jpeg)

![](_page_26_Picture_5.jpeg)

# Smart City Pavilion at HKTDC International ICT Expo 2019

![](_page_27_Picture_1.jpeg)

At our Smart City Pavilion, we will showcase the latest technology of selected IoT (Internet of Things) devices and how it has been affecting our livability. Also, the way to defend cyber hacking has raised the importance of Information-security. A cyber range is a virtual environment that is used for information security training and development to Information Security professionals. Our Information Security experts will demonstrate how it helps to strengthen the stability, security and performance of cyber infrastructures and IT systems used by government and commercial industries.

Check out more the above solutions and applications at our Smart City Pavilion! Enquiry Hotline: 3480 4230 (Secretariat of Smart City Consortium)

![](_page_27_Figure_4.jpeg)

Organiser:

Exhibitors:

![](_page_27_Picture_7.jpeg)

香港信息多全學院

![](_page_27_Picture_9.jpeg)

![](_page_27_Picture_10.jpeg)

![](_page_27_Picture_11.jpeg)

Supported by:

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Funding organisation:

香港信息多全學院 HONG KONG INFORMATION SECURITY ACADEMY

![](_page_28_Picture_1.jpeg)

Certified Information Security Professional (Hong Kong) 香港註冊信息安全人員

![](_page_28_Picture_3.jpeg)

HKISA Cyber Range System 信息安全攻防練習綜合電子靶場

![](_page_28_Picture_5.jpeg)

# 智能萬用遙控器

Use your Smartphone to setup IR codes and control your home entertainment IR devices. 輕鬆簡單使用手機APP, 配對家中影音產品

![](_page_28_Picture_8.jpeg)

# **Conexum solutions Conexum智慧紅外線方案** Conexum IoT modules for home appliances manufacturer. 不同紅外線 + RF模組 / LDO

![](_page_28_Picture_10.jpeg)

![](_page_28_Picture_11.jpeg)

IoT Chinese Calligraphy Table 塗畫科技書法體驗檯

![](_page_28_Picture_13.jpeg)

PowZlot Tower Rental Charging System 大型租借充電寶設備

![](_page_29_Picture_0.jpeg)

![](_page_29_Picture_1.jpeg)

The Cyber Games Arena (CGA) was open recently in Hong Kong, which is by far the biggest eSports stadium in Asia. Mr. Ryan Chow, CEO of the CGA, stated that CGA is expected to attract at least 1.2 million visitors per year and will serve as a social hub for eSports enthusiasts.

A report released by the multinational accounting firm PwC stated that eSports had overtaken football in having the highest growth potential. The eSports industry would generate USD 800 million worth of economic benefits in 2018 and is expected to double by 2022.

Excessive homogeneity of Hong Kong's economic activities has restricted career choices for our teenagers. ESports has vast market potentials in Asia and all corners of the world. Promoting eSports development can spur economic growth and build a more diverse economy. 本港電競運動平台CGA近日正式營業,是目前亞洲最大的 綜合電競館。CGA行政總裁周啟康表示,電競館期望每年 吸引至少120萬人次入場,建立電競愛好者聚腳社區。

國際知名會計師事務所普華永道發表的報告指出,電競已 超越足球,成為最具增長潛力的體育項目,2018年電競產 業的經濟效益將達到8億美元,預計到2022年,電競行業 的經濟規模將會翻一番。

本港的產業結構過於單一,限制了青年的就業選擇。電競業無論在亞洲或世界各地的市場,潛力都十分龐大,積極 推動電競業,可以促進香港經濟發展和邁向產業多元化。

電競市場不容小覷,然而本港在發展電競運動方面已經落後 能人,必須急起直追,消除電競業的多項障礙。

Smart·智城 VISION

![](_page_30_Picture_0.jpeg)

ESports market should not be overlooked. Sadly, Hong Kong is lagging behind in terms of eSports development. We must quicken our pace to break down the barriers against the eSports industry:

1. Licensing of eSports activities involves the overlapping of duties from several government departments. Matters of competition, audience and venue security fall within the scope of different government bodies, such as Home Affairs Department, Leisure and Cultural Services Department, Food and Environmental Hygiene Department and Office of the Licensing Authority. The Innovation and Technology Bureau, meanwhile, is only responsible for coordinating the development works in the eSports industry. Regulations on the licensing procedures are needed. Our government should also clarify issues as to where and when requirements for eSports venue licenses are mandatory.

2. Negative perceptions of eSports in Hong Kong are the obstacles for talents to join the sector, hindering audience expansion and the industry growth. Our government should take the lead in erasing the misconception on eSports in our society and raising the recognition of the eSports industry.

3. Hong Kong is lacking formal training scheme to nurture eSports professionals, logistics support and relevant support services, which affects the quality of the workforce and frustrates the efforts to recruit fresh blood. Talent cultivation is a key factor to long-term development of our eSports industry. Comprehensive planning on promotion, training and development of eSports industry is needed to attract more skilled workers.

4. Presently, eSports is not recognized as a sport in Hong Kong, not to mention setting up a globally recognized association for the eSports industry. ESports has already been included as a medal event in the 2022 Hangzhou Asian Games. We only have 3 years left before the Games start. Our government needs to speed up the local eSports development and enhance its social recognition.

![](_page_30_Picture_6.jpeg)

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![](_page_30_Picture_7.jpeg)

第一,本港電競運動的發牌政出多門,競賽、觀賽、場地 安全由不同政府部門負責,涉及民政事務總署、康文署、 食環署、牌照事務處等多個部門,而創新及科技局只負責 統籌產業發展。政府必須規範發牌手續,釐清電競場所的 牌照申領事宜。

第二,香港電競的負面社會形象,令加入行業的人才以至 建立觀眾群都受到限制,阻礙行業發展。政府須牽頭消除 社會大眾對電競的誤解,提升行業認可。

第三,香港缺乏正規培養電競人才的途徑,後勤及周邊工 作都支援不足,除了影響人才質素,亦難以吸引新人入 行。人才培養是行業長遠發展的關鍵,政府須妥善規劃電 競運動的推廣、教育、培訓,為電競業帶來更多新血。

第四,香港未有將電競視為體育項目,更遑論為電競成立 國際認可的體育組織。2022年的杭州亞運已列電競為正式 比賽項目,現距離亞運只有3年時間,政府必須加快本港電 競運動的發展,加強電競的社會認受性。

# 智城觀點 SCC Corner

# Advocate to Free Up Spectrum for The 5G Era

The Chinese version was originally posted in the Oriental Daily News on 17th Feb, 2019

# 歡迎清空頻譜迎5G

原刊於2019年2月17日《東方日報》評論版

Hon. Elizabeth QUAT, BBS, JP 葛珮帆議員 Legislative Council Member (New Territories East) 立法會議員 (新界東) Founder & Honorary President of SCC 智慧城市聯盟創辦人及榮譽會長

Few days ago, Mr. Edward Yau, Secretary for Commerce and Economic Development, announced the termination of analogue television services from 30<sup>th</sup> November 2020. Mr. Yau stated that the vacated spectrum will be reserved for high-value telecom and communication services to improve indoor mobile telecommunications.

A survey conducted by the government years ago marked the end of analogue TV. The survey revealed that over 2.2 million households in Hong Kong (88 percent) had already switched to digital terrestrial television (DTT) broadcasts; only about 180,000 households (7 percent) were still using analogue TV services; the remaining 5 percent of the households (about 120,000 users) claimed that they did not have a TV set.

In my opinion, termination of analogue TV services can free up spectrum for other purposes so that the use of public resources can be optimized. They include extending the coverage of DTT services and relieving network congestion frequently occurred in public venues. After analogue broadcasting ceases, vacated spectrum can be allocated for low-frequency 5G services. We can overcome obstacles to receive 5G signals in remote areas (e.g. Tai Po) and enhance connection speeds at MTR stations, paving the way for an interconnected smart internet of things (IoT) network.

Likewise, commercial buildings without public antenna still exist in Hong Kong today. Once they are equipped with broadband access, those building users can watch DTT programs via the internet. Low-income citizens or residents in remote areas will also need support from our government for broadband installation.

Therefore, I stand up for the government's proposal to allocate the Community Care Fund to subsidize citizens with no access to DTT services to buy a digital TV set or DTT decoder box, while expecting a more simplified application process.

Termination of analogue TV broadcasting will also bring 2 RTHK's analogue TV channels to an end. In April 2016, RTHK took over 2 analogue channels from the "ousted" ATV, spending \$50 million each year in renting transmission systems. Last year, the Audit Commission discovered viewer ratings of 0.1 point for these channels, which was even lower than ATV's ratings. Reruns are too often broadcasted. By switching off analogue TV services, our government can save \$50 million a year almost immediately.

Is it appropriate to continue allocating \$50 million a year to RTHK for operational efficiency enhancement? I think that is just pouring money down the drain. A comprehensive review on allocation of resources and a more progressive approach to boost viewership of RTHK are the actions expected by the public.

商務及經濟發展局局長邱騰華日前宣布,於明年11月30日 起終止模擬電視廣播。邱騰華表示,未來會將騰出的頻譜 用於高增值的電訊和通訊服務,改善室內流動電訊通訊。

根據政府前年進行的調查結果顯示,全港百分之八十八、 即逾220萬家庭用戶已經收看數碼電視;只有百分之七、 即約18萬戶仍然使用模擬電視廣播;餘下百分之五、即約 12萬戶報稱沒有電視機,顯示模擬電視已經成為過去。

筆者認為終止模擬電視廣播可以騰出頻譜作其他用途, 例如擴展數碼電視廣播的覆蓋率,或是紓緩現時公共場所 網絡容量擠塞的問題,使得公共資源更有效得到使用。終 止模擬廣播,可將清空的頻譜用作低頻率的5G服務,可以 解決部分偏遠區域如大埔無法接收5G信號的情況,及改善 港鐵上網速度,有助發展萬物互通的智慧物聯網。

另外,現時香港仍存在沒有公共天線的商廈,他們有寬頻 網絡就可以經互聯網收看數碼電視,而低收入或偏遠地方 的市民,政府應協助他們安裝寬頻。

故此,筆者歡迎政府提出動用關愛基金,協助仍未能享用 數碼電視服務的市民購置數碼電視機或機頂盒,以減少對 有關用戶的影響,並期望政府可以盡量簡化申請程序。

港府終止模擬電視廣播,變相亦取消香港電台兩條模擬電 視頻道。港台2016年4月起接手亞洲電視兩條模擬電視頻 道,每年花費5,000萬元公帑租用發射技術,去年卻遭審 計署揭發只得0.1收視率,較被釘牌的亞視更低,而且不斷 重播節目。終止模擬電視廣播,政府可同時節省5,000萬 元公帑。

至於5,000萬元應否再給予港台作改善營運之用,筆者認 為此舉如同倒錢落海,港台應全面檢討如何善用資源, 增加收視。

![](_page_31_Picture_20.jpeg)

![](_page_32_Picture_0.jpeg)

![](_page_32_Picture_1.jpeg)

The central government has recently issued a master plan for the Guangdong-Hong Kong-Macao Greater Bay Area development to spur growth in Hong Kong, Macao and nine cities in the Guangdong province including Guangzhou and Shenzhen, China's Silicon Valley. The Bay Area is home to some 70 million people and has a combined GDP of about 10 trillion yuan in 2017, roughly equivalent to that of South Korea and Australia.

The development plan is important as it outlines the role of each partner city, covering the period from now until 2022 in the immediate term and extending to 2035 in the long term. This means it is our development framework for the next 16 years.

Hong Kong is clearly a key focus of the plan. In the original Chinese version, Hong Kong has been mentioned 97 times, while Macao 89, Guangzhou and the Shenzhen 39 and 38, respectively.

What are the advantages of Hong Kong? The official document cites Hong Kong's status as an international financial, transportation and trade center as well as an international aviation hub. Hong Kong's anti-corruption commission and efficient government are also highlighted. Actually, we have other advantages that can enhance our leadership in the Bay Area though they may not be as obvious.

The development plan mentions two information platforms: A "spatial information service platform" and a "coordination platform" for responding to major contingencies.

國務院公布《粵港澳大灣區發展規劃綱要》(規劃綱要), 是中央對總人口7,000萬人,包括香港、澳門,以及廣州和 深圳等廣東省9個城市合作發展的策略。在2017年區內的 GDP合計有10萬億人民幣,和南韓、澳洲相若,經濟潛力 優厚。

文件提到規劃「近期至2022年,遠期展望到2035年」, 涵蓋未來16年各市的角色,規劃綱要對我們的重要性可想而 知。而11章文件中,提及香港的次數最多,達97次,澳門89 次,廣州和深圳分別是39和38次,從中可見香港的地位。

那麼,香港的優勢是甚麼?許多人都會列舉國際金融、航運 和貿易,以及廉潔政府和高效政府服務等方面。除此之外, 香港其實有另一個優勢,可以在大灣區建設中擔當領導角 色,卻鮮為人知。

# 空間數據服務平台 港早引進

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在規劃綱要的第5章和第8章分別提到的兩個平台:「空間 信息服務平台」和「應急協調平台」。文件指出,要「加強 粵港澳智慧城市合作,探索建立統一標準,開放數據端口, 建設互通的公共應用平台」,其中包括「空間信息服務平台

![](_page_32_Picture_12.jpeg)

![](_page_33_Picture_0.jpeg)

A "spatial information service platform" or CSDI as we used to say in Hong Kong is for facilitating the development of smart city, "exploring the establishment of common standards, opening up data ports, developing interconnected public application platforms and information infrastructure facilities" so we can "develop smart transport, smart energy, smart municipal management and smart communities". (Chapter 5) At the same time, in the face of accidents, disasters, and a public health crisis, we have to "improve the mechanism for contingency management". A "coordination platform for contingency responses" is therefore needed. (Chapter 8)

CSDI, one of the key information infrastructures mentioned in the plan, is a one-stop data supermarket based on geographic framework. A CSDI with open data is the core of a smart city; it can facilitate urban management and stimulate civic innovation. This is because a single dataset (such as highway traffic flow) alone has limited usage. However, if you integrate information from different sources — such as weather, major events, emergencies, passenger flow and traffic condition of MTR and bus, etc., all of them together can form a complete picture so people commuting to work, the authorities responsible for traffic coordination and emergency services, and government officials can assess the road conditions comprehensively. At the same time, startups and private organizations can also make use of the open data to develop different applications to serve citizens, and encourage innovations and boost the development of the new economy.

The most comprehensible way to link these groups of data is to relate them by geographic location. It is estimated that 80 percent of data is related to geographic location, so it is logical for data to be referenced with respect to their location. Unlike private companies which often use mobile phones or ID numbers to link different data of customers for internal analysis, the government cannot use these data other than law enforcement due to personal privacy issue.

With CSDI as an infrastructure, we can further develop other applications, such as an emergency response platform or as we call Common Operational Picture (COP). The data platform enables assembling all relevant information on the digital maps in association of major events or disaster relief.

Just recently, because of the breakdown of a duty assignment system for KMB drivers, some 1,000 people were stranded at Tuen Mun Road interchange during morning peak hours. Some passengers had to wait for an hour before catching their bus. If we have a COP, the authority and the passengers could grasp the whole picture in real time, so that everyone can make their own provisions in advance.

In January this year, the Hong Kong government announced its plan to establish a City Dashboard which is another application made possible with a CSDI. As no details are available for the time being, an example established by Eric Garcetti, the mayor of Los Angeles, the U.S. in 2013 can serve as a good reference. The mayor's 等資訊基礎設施」,以拓展「智慧交通、智慧能源、智慧市政、智慧社區」。(第5章「加快基礎設施互聯互通」)此 外,亦要「完善突發事件應急處置機制,建立粵港澳大灣區 應急協調平台,聯合制定事故災難、自然災害、公共衞生事 件、公共安全事件等重大突發事件應急預案,不定期開展應 急演練,提高應急合作能力。」(第8章「建設宜居宜業宜 遊的優質生活圈」)

第5章中的「空間信息服務平台」,即是我過去多次提出 的「空間數據共享平台」(CSDI),以地理空間資訊為軸 心,連繫所有公共數據。這個CSDI是城市管理的基礎設 施,開放予公眾的平台也可鼓勵創新,因此是建設智慧城市 的重要一環。

![](_page_33_Picture_9.jpeg)

# 公開實時數據 促進新經濟

Smart・智城

為甚麼?因為單一數據集(例如主要幹道車流量)作用有限,但如果把不同來源的資訊整合——例如天氣、大型活動、突發事件、地鐵巴士的客流量和行車實況,加起來才可 拼湊成一個完整的畫面,令要出門上班的你,或負責調度交 通的部門,以至政府高層都能對路況有全面的掌握。

公開這些實時數據更有助初創企業開發各種利民的應用程 式,對促進新經濟極有裨益。而最方便連結起這些零碎數據 的,是地理空間位置。

據估計,8成數據和地理位置有關,因此數據附上位置資訊,順理成章。

同時,跟私人企業不同,他們往往以手機或身份證號碼, 把客戶不同的資料連結供內部運用,但在政府開放的數據 上,這當然不可行,因為涉及私隱。

![](_page_34_Picture_0.jpeg)

![](_page_34_Figure_1.jpeg)

dashboard is important in updating the public constantly on topics of public concern — such as family rental burdens, the proportion of elderly living in poverty, bus punctuality, hotline response times, etc. Through this, it is easy to discern which area has improved and which has not yet met the standard.

In fact, the Hong Kong government started to use a geographic information system for analysis and decision-making some 20 years ago. That was much more advanced than our Bay Area neighbours at the time. Last year, the Lands Department integrated datasets from other government departments and displayed on maps for the convenience of the public. This is indeed a mini CSDI. As the central government has indicated the importance of these information platforms, we should step up our measures in developing our own. Then we can share our experience with our Bay Area counterparts, and lead the way to build a CSDI for the whole area.

However, we have to act fast as Guangzhou and Shenzhen have been catching up really fast with increasing international exposure and linking in the last decade. To maintain Hong Kong's leadership, it's time for us to work harder so that we can move forward in leaps and bounds.

# 應急協調平台 地圖顯示資訊

有了CSDI這個基礎設施,在此之上便可以建立不同用途的資訊平台,如「應急協調平台」或英文叫Common Operational Picture (COP),就是在某一個主題下,以地 圖顯示各項相關資訊。

例如早前九巴因司機派更系統失靈而令屯門巴士延遲出發, 適逢上班時間,令有些市民要等上一個小時才可上車。大家 都埋怨巴士公司沒有及早通知,否則可以乘搭其他交通工 具。我想,如果政府當局和市民都能在一個COP平台或相 關應用程式上,看到上班上學時段的綜合實時交通資訊, 包括人龍情況,大家便可早作準備。COP讓管理當局和市民 掌握整體情況,這在大型活動安全、疾控監察及救災時更為 重要。

### 城市儀表板 有效監察政府表現

1月初政府宣布在今年底推出城市儀表板(City Dashboard), 這也是在CSDI之上的一個重要建設,以簡單易明的圖表, 讓市民監察政府表現。例如美國洛杉磯市長加爾塞特(Eric Garcetti)在2013年推出的「市長儀表板」,不斷更新資訊 如家庭租金負擔、貧窮人口、交通意外、巴士準時度、求助 熱綫回應時間等,令政績好壞無所遁形,是個優秀的示範。

其實,香港政府早於20年前已開始引進地理資訊系統作分析 決策之用,遠早於大灣區同儕;去年地政總署更率先把多個 政府部門的數據集以地圖呈現,儼然半個CSDI。現在,中央 這個規劃清晰標示要建設這些平台,因此香港政府應該加快 腳步,首先完善本地這些空間數據基建,並把先進經驗和大 灣區其他城市分享。

廣州、深圳等城市近年突飛猛進,國際視野逐漸增強,香港 要確保自己的龍頭地位,是時候加把勁了。

![](_page_34_Picture_12.jpeg)

Smart·智城

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# 智城觀點 SCC Corner

![](_page_35_Picture_1.jpeg)

Our cities are undergoing enormous expansions. Estimates tell us that around 200,000 people migrate from countryside to cities across the globe every day, equivalent to 140 people every minute. By 2050, more than two in every three people will be living in urban areas. In this increasingly urbanized world, life expectancy also improves. New technological advancements in connectivity, mobility, and computing power are megatrend that change many aspects of our live faster than ever.

Digital disruption is impacting the global elevator and escalator industry. Among the key advancements from the development of internet and the accelerated progress in mobile network, we now have the platform and infrastructure to allow us to connect everything: hence the full-scale application of the internet of things (IoT). At KONE, we have been improving the flow of people and the flow of urban life for more than 100 years. Our history has taught us the importance of renewing ourselves through innovative and transforming our business according to the changing environment: We will not be complacent at just providing an equipment in the buildings, we strive to provide a service, an experience to the citizens from getting to work, going back home and support all their daily activities within the city.

In 2017, KONE revolutionized the industry with its intelligent 24/7 Connected Service. As part of KONE Care<sup>TM</sup>, 24/7 Connected Service uses the IBM Watsons IoT platform and other advanced technology to bring totally new type of intelligent services. With KONE 24/7, we can predict the condition of the escalators & elevators, maintain and take action before equipment breakage.

How does it work? We install sensors in the equipment and collect data around the clock on key operating parameters, usage statistics and faults. All these information is sent in real time to KONE's cloud service at which the machine learning algorithm, IBM Watson IoT can make intelligent decisions to identify the needs for maintenance: it either alerts our technician immediately, or contacts technical support or customer service, according to how critical the problem is. Our service technician receives information on service needs and conduct the service either right away or during next scheduled maintenance visit depending on the urgency.

全球的城市正持續地膨脹。據估計,每日約有20萬人,即每 分鐘有140人遷移到各地的城市。至2050年,每三人當中, 至少兩人居住在城市。隨著世界日趨城市化,人均壽命亦因 而延長。由於連通性、流動性及訊息處理科技的進步,這個 大趨勢為人類不同生活層面帶來的改變,亦是前所未有地急 速發展。

「革命性創新」正影響全球升降機及自動梯行業。隨著互聯 網發展和流動網絡的速度不斷提升,我們現在更能透過平台 及基建設備去連繫所有事物,全面進行物聯網(loT)應用。 過百年來,通力一直致力改善城市生活的客流體驗。歷史教 導了我們,要因應環境變遷,而不斷求新求變。因此,我們 不僅僅滿足於為大廈提供設備,更致力為市民提供由上班至 回家的體驗,並支援他們在城市中的所有活動。

2017年,通力以「24/7全連接遠程監控服務」引領業界變 革。這項監控服務利用IBM Watson物聯網平台及其他先進技 術,帶來全新的智能服務,是通力KONE Care™方案之一。 我們可以使用通力這項服務,偵測升降機及自動梯的潛在問 題,在設備發生故障前預先進行維修保養及採取相應措施。

系統如何運作?我們在設備上安裝感應器,並全天候收集主要運作裝置的數據、使用情況和故障訊息。所有資料會實時發送至雲端,由機器學習算式和IBM Watson物聯網作出智能化決定。除了辨認需要維修的部分,系統更會視乎問題的嚴重性,立即通知技術人員聯繫技術支援或客戶服務部。我們的技術服務人員在收到有關服務需求後,會因應緊急程度判斷需立刻維修或於下個定期維修保養時間進行維修。

對於使用者的閣下而言,這意味著提升安全、完全透明及更 放心使用。因為一旦發生事故,不需聯絡服務團隊,系統也

![](_page_35_Picture_11.jpeg)

![](_page_36_Picture_0.jpeg)

For you, the end user, this means improved safety, full transparency and ease of mind. Because if something was to happen, the service team is already aware of the situation and takes appropriate action without the need to call them. For you as a facility management, by using together with our KONE Mobile app and KONE online portal, you and your team will stay up-to-date on both health of the equipment and maintenance work schedule and progress at all times. You can also access the status report at any time anywhere which can help your planning in advance.

Not so long ago, our customers were all concerned about optimizing energy consumption and elevator capacity to support the people flow in the building. Now, they are pondering how varies building systems need to be linked together, and how they can provide the best user experience to help them differentiate from the neighboring towers.

Talking about the era of big data & IoT, "connectivity" is a key word to our new solutions. Now everything is connected and work as a comprehensive system. Buildings are smart buildings and elevators are smart elevators as well. KONE Residential Flow brings new levels of convenience for home owners and tenants by connecting building access (including doors, gates and other security facilities), elevators, information channels and intercom systems via an easyto-use smartphone application, called KONE Flow<sup>™</sup>.

There are three packages available: KONE Access, KONE Visit and KONE Information. KONE Access controls building doors and automatically call an elevator to take the users to their home floor, eliminating the need to carry or use physical keys. KONE Visit includes smartphone-connected intercom system that allow residents to greet visitors and grant them access using their smart phone. The elevator then takes the visitors automatically to their destination floor. Importantly, residents can also grant access remotely, which is useful for situations like parcel deliveries. With the KONE Information package, facility managers can send relevant building-related information directly to residents' smartphones, or to the info screens in the elevators or lobby.

Our customers no longer want to buy product features, they want to buy outcome! How can we create a superb residential flow experience? What kind of offices should we build to attract millennial employees and the best paying tenants? This is what our customers are asking and we are walking in the users' shoes to help them find solutions. A win-win-win solution!

![](_page_36_Picture_6.jpeg)

Smart・智城

![](_page_36_Picture_7.jpeg)

早已察覺到有關狀況並採取適當措施。在設施管理方面, 客戶亦可利用通力手機應用程式和網站,隨時知悉設備最新 運作狀況,以及維修保養工作排程及進展的最新資訊,並能 隨時隨地取得狀況報告,以便作進一步規劃。

不久之前,我們的客戶還在關注如何優化能源消耗量和升降 機容量,以支撐大廈客流量。現在,他們會思考建築系統需 如何改變,藉此為客戶提供最佳體驗,提升大廈的價值及競 爭力。

談到大數據和物聯網時代,「連通性」是我們新方案的 關鍵詞。現在,所有事物都互相連通,並構成一個全方 位系統。除了大廈是智能建築,升降機也是智能升降機。 通力「智能住宅客流解決方案」,能透過簡單的智能手機應 用程式操作,連通大廈內各種權限(包括大門、大閘及其他 保安設備)與升降機、資訊頻道和對講系統,從而使業主和 租戶更方便快捷。

「通力智能客流」™包括「通力進出管理系統」、「訪客系 統」和「訊息顯示系統」。「通力進出管理系統」能控制大 廈大門,並自動命令升降機送乘客到居住的樓層,免除使用 按鈕的需要;「通力訪客系統」包括:讓住戶利用智能手機 連接對講系統迎接訪客,並透過智能手機讓訪客進入大廈, 然後升降機會自動送訪客到特定樓層。住戶能遙距控制, 對某些情況,如快遞運送特別適用。「通力訊息顯示系統」 則能讓大廈設施管理者直接傳送物業資訊到住戶的智能手機 或升降機和大堂的顯示屏上。

今時今日的客戶不再只著重產品功能,而是更看重效果。 怎樣才能創造卓越的住宅客流體驗?建造哪種類型辦公室, 才能吸引千禧世代的員工及願意出更高租金的租客?這正正 是客戶所需,也是我們切身處地為他們設計的一個三贏的解 決方案。

![](_page_36_Picture_13.jpeg)

# 智城觀點 SCC Corner

# A Citizen-centric Approach to Smart City Development 以民為本的智慧城市發展之道

Mr. Patrick Kirby 郭偉弼先生

Director of Technology, Media, Telecommunications & Innovation for KPMG China 畢馬威中國科技、媒體、電信和創新業務總監

As Hong Kong gears up to a new era in digitised services with the anticipated launch of 5G, how can the city ensure that the proposed solutions align with citizens' needs?

Strengthening IT capabilities and an innovative mindset are enabling Hong Kong's continuous transformation as a smart, liveable city.

The planned rollout of commercial 5G by 2020 will enable the construction of a high-speed communications backbone necessary to connect sensors, cameras and other internet of things (IoT)-enabled devices. Combining 5G-enabled networks with artificial intelligence and predictive analytics, city officials and businesses will be able to gather and interpret massive amounts of data, enabling them to improve service quality and respond more effectively to potential risks.

Coinciding with the 5G launch, the HKSAR government has allocated over HK\$900 million for smart city infrastructure projects to be completed over the next two years, according to 2019-20 Budget figures. These improvements include installing multi-functional smart lampposts, enhancing the government's cloud services, and building a data analytics platform to facilitate healthcare research. Additional smart city earmarks outlined in this year's Budget include HK\$300 million to develop a geospatial data sharing platform and 3D digital maps, and HK\$200 million to provide WiFi service to welfare facilities.

![](_page_37_Picture_8.jpeg)

香港已為第五代流動技術(5G)開創的數碼化服務新時代作 好準備,但我們如何確保新推出的科技應用配合市民需要?

隨着漸漸增强的資訊科技實力和創意思維,使香港不斷發展 成為宜居的智慧城市。

香港計劃於2020年推出商用5G,將會為連接傳感器、相機 和其他物聯網(loT)設備提供高速通訊支柱。將5G網絡與 人工智能和預測分析連接後,香港的政府官員和商界人士便 能夠收集及解讀海量數據,從而提高服務質素,更有效地應 對潛在風險。

在推出5G網絡的同時,香港特區政府在《2019-20年度財政 預算案》預留超過9億港元,在未來兩年陸續完成智慧城市 基建項目。其中包括安裝多功能智慧燈柱,提升政府雲端服 務和設立大數據分析平台,以促進醫療相關研究。本年度財 政預算案提及的其他智慧城市項目還包括預留3億港元發展 地理空間數據共享平台和三維數碼地圖,以及撥款2億港元 為社會福利服務單位提供WiFi服務。

# 宜居要素

Smart・智城

智慧城市發展日益受到關注,投入智慧城市發展的資源也在 不斷增加,如何確保新推出的科技應用配合市民需要,成為 當務之急。

畢馬威中國在今年1月發佈了一份與中電控股、怡和科技、 智慧城市聯盟、西門子和威信集團共同進行的調查研究, 證實市民不只是希望發展互聯城市,而是發展切合其需要的 智慧城市。

這份題為《互聯城市:亞太地區市民的意見》的研究報告匯 集了亞太區五大城市,包括香港、墨爾本、上海、新加坡和 首爾 4,192 名居民的意見,了解他們對智慧城市的期望, 以及需要在六大領域推動的發展:交通和出行、塑造面向未 來的勞動力、生活環境、醫療保健、能源和資源,以及科技 應用。

![](_page_38_Picture_0.jpeg)

#### The liveability factor

In the midst of the current upswing in attention and investment surrounding smart city development, the imperative to align proposed technology solutions with citizens' needs has never been stronger.

A survey released in January by KPMG China in association with CLP, JOS, Smart City Consortium, Siemens and Wilson Group, reinforces the idea that people don't just want a connected city – they want a city that serves them well.

The report, *Connected Cities: Citizen insights across Asia Pacific*, sought the opinions of 4,192 residents in Hong Kong, Melbourne, Seoul, Shanghai, Singapore on what benefits they expect as cities become 'smarter' and key development actions needed in the following six areas: transportation and mobility, building a future-focused workforce, living environment, healthcare, energy and resources, and technology solutions.

The survey found that improving liveability is a top priority expected of smart development by residents. Overall 51 percent of those polled listed creating a better living environment as a key development area expected of their city including 59 percent in Hong Kong. Improving access to healthcare and its delivery to residents was a close second as cited by 49 percent of residents overall and 51 percent in Hong Kong.

#### Linking awareness and impact of smart city solutions

Surveyed respondents were also asked to indicate whether or not they were aware of nine commonly-implemented smart city technology solutions such as electronic payment technology and apps, e-billing for utilities and public services, interactive transportation maps, online tax reporting and payment services, and interactive government self-service help centres or apps (see chart below). If they responded positively, they were asked if technologies had a positive impact on their quality of life.

The findings show that as overall public awareness of smart technology solutions increases, so do citizens' tendencies to view them in a positive light. In contrast, as awareness decreases, it has a negative effect on public perception.

![](_page_38_Figure_9.jpeg)

Smart・智城

![](_page_38_Picture_10.jpeg)

Julian Vella, ASPAC Regional Head – Global Infrastructure Advisory and Co-head of China Infrastructure, KPMG China (far left) moderates a panel discussion on the future of smart cities at the Connected Cities Conference co-hosted by KPMG, CLP, JOS, Smart City Consortium (SCC), Siemens, and Wilson Group in Hong Kong on 24<sup>th</sup>January.

畢馬威環球基建服務亞太區主管兼中國基建服務聯席主管韋勒 (左) 在畢馬威、中電控股、怡和科技、智慧城市聯盟、西門子 和威信集團於1月24日共同舉行的互聯城市大會上主持智慧城市 的未來小組討論會。

調查發現,在智能發展方面各地居民的首要訴求是改善生 活。過半數受訪者(51%)將更美好的生活環境列為城市主要 發展方向,其中香港受訪者更有 59% 對此認同。緊隨其後 的是改善居民的醫療服務,佔整體受訪者的49%,香港受訪 者更達51%。

#### 連接智慧城市科技應用的認識和影響

受訪者還被問到是否知道九項最常應用的智慧城市科技, 例如電子支付技術和應用程式、水電煤或公共服務電子賬 單、互動交通/地圖流動應用程式、網上報稅及交稅服務及 互動政府自助服務中心或應用程式等(見下圖)。如受訪者 回答說知道,便會再詢問這些科技對他們的生活質量是否有 正面影響。

![](_page_38_Figure_16.jpeg)

![](_page_39_Picture_0.jpeg)

Notably, the gaps in awareness suggested by the survey findings point to solutions that potentially can address citizens' expectations for smart cities. For example, in Hong Kong, half of residents polled (50 percent) say they expect delivery and management of public services to improve as their city gets 'smarter', yet only two-thirds (67 percent) were aware of interactive government self-service help centres or apps, with less than half of those aware (45 percent) saying they have a positive impact.

#### Embracing citizen and private sector participation

The results suggest that improved outreach on the benefits that technology solutions bring can positively affect public opinion. To achieve this, cities should explore better ways of communicating with residents on how such solutions can improve their quality of life. People who use and have a favourable opinion of these technologies can serve as advocates which can help to engage those who are less aware.

As such, cities should maximise community engagement in smart city projects and increase public-private collaboration to develop solutions. From Hong Kong's perspective, the government's announcement that it will set up a Smart Government Innovation Lab in April to engage industry, foster public-private partnerships, and create business opportunities for startups and SMEs is a positive step forward.

Hong Kong's Smart City Blueprint describes a smart city as "peoplecentric" – built on the needs of the people, with benefits that can be enjoyed by residents and visitors alike. By becoming leaders in technology adoption and embracing citizen involvement in smart city development plans, Hong Kong and other cities throughout Asia Pacific can make better informed decisions to improve liveability, foster economic growth and competitiveness, and create a more sustainable future. 而調查顯示,整體受訪者增加了對智慧城市科技的認識, 越來越多受訪者以正面的態度看待這些技術。相反,如果認 識越低,公衆觀感也比較負面。

值得注意的是,調查所反映的認知缺口可能是回應市民對智 慧城市期望的方法之一。舉例來說,受訪的半數香港市民 (50%)期望公共服務的提供和管理應隨着智慧城市的發展而 改善,然而只有三分之二的受訪者(67%)知道有互動政府自 助服務中心或應用程式,而知道有相關服務的受訪者中不到 半數(45%)表示這些服務對他們的生活有正面影響。

#### 歡迎市民和商界參與

研究結果指出,加强宣傳科技可帶來的裨益對輿論會有正面 影響。為達到這一目的,各城市應想方設法向居民更好地傳 達智慧城市科技可對生活質量帶來的改善。使用且對相關技 術留下良好印象的市民可起到口耳相傳的作用,鼓勵更多不 知道相關技術的市民投入使用。

為此,各城市在推動智慧城市項目時應盡可能擴大社區參 與,促進公私營合作以發展技術項目。在香港方面,政府已 宣佈在今年4月成立智慧政府創新實驗室,邀請業界參與、 促進公私營合作夥伴關係,也為初創和中小企創造商機。

《香港智慧城市藍圖》指出智慧城市以人為本,應依據市民 大衆的需要來構建,讓本地居民及外來遊客都可以看到和感 受到有關裨益。通過積極應用新技術,歡迎市民參與智慧城 市建設,香港和亞太區的其他城市可掌握更全面的訊息, 從而作出有效決策,以促進經濟增長、提升競爭力,並創造 宜居城市和可持續的未來。

![](_page_39_Picture_12.jpeg)

Smart・智城

![](_page_40_Picture_0.jpeg)

![](_page_40_Picture_1.jpeg)

The financial industry has developed over centuries to provide products and services while achieving effective ways to make and receive payments safely, protect wealth, provide financing with collateral and for raising capital. Despite this, the world remains far from ideal, with payment theft, loan fraud and losses due to natural disasters. Financial institutions tend to serve less risky segments, which are often characterized by large corporations and high net worth customers in more developed areas. Some segments of the population on the periphery are in desperate need of financing support and wealth protection, yet must struggle to obtain financial services. Meanwhile, financial institutions are competing in the "red sea" of premium segments, resulting in high market saturation and increasingly low profit margins.

One segment of the population that is often precluded from financial service includes those who do not have a stable income, permanent address or proper valuation of their collateral. This segment often fails to meet the know-your-customer (KYC) or loan-to-value (LTV) requirements required to obtain traditional banking services. For incumbent financial institutions to serve this segment adequately, processes are needed to collect more intelligence on these applicants and their collateral positions, yet often the financial returns fail to justify the cost. To incumbent banks and moneylenders, the returns from these microfinancing transactions are often not lucrative enough for them to serve this segment of customers.

#### DLT offers a new perspective

Distributed Ledger Technology (DLT), most commonly known as Blockchain, has the potential to bring about a new level of transparency in enabling financial institutions to safely leverage synergies generated throughout the ecosystem, know their customers adequately, detect fraudulent transactions reliably and 金融業經歷數百年的發展,提供各類產品和服務以滿足支付 安全、財富保障、擔保信貸和財務融資等大眾需求。然而, 考慮到市場上各種風險,如支付盜刷、借貸欺詐和自然災害 等,金融機構多傾向於為低風險的市場——通常指較發達地 區的大企業及高淨值個人客戶——提供服務,這就造成了一 種困境:一方面,一些處於邊緣的人口難以獲得融資和財富 安全服務;另一方面,金融機構在高端群體的「紅海市場」 競逐,導致高端市場趨向飽和,金融機構利潤持續降低。

此外,對於無穩定收入、固定居所或其擔保物估值困難的 一群,他們大多無法滿足傳統銀行服務的「了解客戶」 (KYC)要求或「貸款價值比」(LTV)要求,因此難以取 得貸款。金融機構為了獲取這類貸款申請的相關訊息,往往 出現最終貸款收益無法覆蓋成本的情況,因而蒙受損失。同 時,小微貸款的收益一般難以滿足普通放債銀行及其他貸款 機構的利潤目標,亦令到該客群容易被忽視。

# 區塊鏈帶來全新視角

分佈式帳本技術(DLT)又稱「區塊鏈」,既能夠提高透明 度,又可保障安全,若能在整個金融生態系統使用,有助金 融機構更好地瞭解客戶、有效識別欺詐交易和分散風險, 讓金融機構可以有空間發掘傳統屬高風險細分市場的潛力, 特別是發展中國家和地區。此外,企業可利用區塊鏈技術搭 建去中心化的金融服務平台,促進系統成員間互相支持。這 最終能促進財富流動、改善財富分佈不均,使社會更加公平 和安定。

![](_page_40_Picture_10.jpeg)

![](_page_41_Picture_0.jpeg)

diversify their risks more effectively. These new benefits enable financial institutions to offer their services to segments traditionally regarded as high risk, particularly in less developed countries and regions. DLT also has the potential to empower entrepreneurs to scale up decentralized financial services platforms on which community members can help each other. These developments could ultimately facilitate the flow of wealth, alleviate financial inequality and enhance social justice and stability.

#### DLT demonstrates huge potential in financial inclusion

DLT platforms allow trustworthy organizations to share information in real-time, securely and cost-effectively. That is why governments are building DLT platforms to lower the cost and risk of KYC processes for financial institutions. DLT has the potential to provide an immutable record of all lending activities as well as automating operations throughout the microfinancing transaction life cycle, including disbursement, interest payment and settlement through smart contracts.

#### Governments and regulators are a crucial driving force

Nowadays, governments and regulators are moving to adopt DLT in hosting digital identities, establishing trade finance platforms and encouraging microfinance. The role governments or regulators usually play starts with facilitating the formation of a working group or consortium, adopting an international data standard, enforcing proper governance and onboarding processes, as well as negotiating interoperability with other international partners. Such proactive involvement can accelerate the deployment of DLT technology and drive the progress of financial inclusion.

![](_page_41_Picture_6.jpeg)

# 區塊鏈對普及金融的潛力巨大

區塊鏈平台讓有信譽的組織可以實時、安全地分享貸款相關 訊息,同時保證較高的成本效益。故此,不少政府都大力推 動區塊鏈平台建設,以期降低金融機構KYC流程所涉及的成 本和風險。此外,區塊鏈技術更可確保所有貸款信息不可篡 改,並能把小微貸款中,包括放款、付息及通過使用智能合 約清償等整個交易流程自動化。

#### 政府及監管機構的關鍵角色

目前,各國政府及監管機構亦紛紛開始利用區塊鏈技術進行 數字身份託管,建立貿易金融平台,鼓勵發展小微金融。 政府及監管機構牽頭成立工作組織,採用國際數據標準以確 保治理和流程恰當,以及與其他國際夥伴磋商協作。有了政 府和監管機構的主動參與,能大力促進區塊鏈技術的發展, 並推動普及金融發展的進程。

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![](_page_42_Picture_0.jpeg)

# Keys to Kick-starting Smart City Development: Al Cloud Construction and Big Data Application

啟動智慧城市的關鍵: 人工智能雲建設及大數據應用

Welfare Electronic Component Limited (WECL) Hong Kong & Macao officially authorized distributor of HIKVISION 華輝無綫電行有限公司 海康威視港澳正式授權代理商

#### The Development of Greater Bay Area

Since 2015, the cooperation and exchange of the nine municipalities in Guangdong Province and the two Special Administrative Regions, including Hong Kong, have been in full swing under the planning and development of the Guangdong-Hong Kong-Macao Greater Bay Area (Greater Bay Area). On 21 February 2019, governments of Guangdong, Hong Kong and Macao stated more clearly their priorities of work to be implemented in the co-organized Symposium on the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area, which implies that the relationship among the three places will be closer, mutually influenced and full of opportunities in the future.

In support of cooperation between cities, transportation infrastructure is the top priority. With the opening of the Hong Kong-Zhuhai-Macao Bridge in support of the development of the Greater Bay Area, the world's No.1 video surveillance equipment producer, HIKVISION, provides an intelligent image analysis system for monitoring the vehicles using the Bridge, which extends across the three separate administration zones, and uses artificial intelligence technology to process identification of different vehicles and license plates of the Mainland, Hong Kong and Macao with high-precision cameras, enabling effective vehicle access control. Additionally, to save the time and manpower for clearance, HIKVISION provides under vehicle surveillance system at the border gates, which carries out under vehicle inspection for each vehicle, serving as an additional safety measure in the land security for the three places.

#### Hong Kong's Smart City Development

In Hong Kong where there is a scarcity of land but with a large population and a large number of vehicles, traffic congestion often adversely affects people's livelihood and economic benefits. Driven by the mutual integration of the Greater Bay Area, traffic will become heavier in the future, so it is necessary to improve traffic flow. Moreover, as Hong Kong is vigorously promoting technological development, one of the focuses is on smart city development and the development blueprint shows that Smart Mobility is a very crucial element. Besides the identification system of the

### 粵港澳大灣區發展

自2015年起至今,廣東省九個城市連同包括香港在內的兩個 特區,於粵港澳大灣區規劃發展下,其合作及交流都進行得 如火如荼。今年2月21日,粵港澳三地政府於合辦的「粵港 澳大灣區發展規劃綱要宣講會」上,更清楚闡述要落實的重 點工作,意味著未來三地關係將更緊密,互相影響,其中充 滿機遇。

城市與城市之間發展的背後,交通基建乃是重中之重。隨着 港珠澳大橋開通,配合大灣區發展,世界第一影像監控設備 生產商海康威視(HIKVISION)為該大橋提供智能影像分析 系統,打破傳統界限,利用人工智能技術,透過高精準度的 攝影機向中港澳三地不同的車輛及車牌作智能識別,有效 地向車輛作出入管理。另外,為了節省檢查的時間及人力, 海康威視更向關口提供地底掃描系統,向每車輛進行車底檢 查,為三地的陸路安全作第一重保障。

![](_page_42_Picture_12.jpeg)

![](_page_42_Picture_13.jpeg)

![](_page_43_Picture_0.jpeg)

license plates and vehicles in the three separate administration zones as mentioned above, HIKVISION can provide road and mobile monitoring systems, vehicle type distribution and traffic flow statistics systems, as well as illegal parking detection systems. With the data collected from different locations and the analysis of big data stored in the artificial intelligence cloud (Al Cloud), the regulators and law enforcement agencies can then develop relevant strategies based on the analysis to respond and address issues through the different systems. These systems can be applied not only at the municipal level, but also at the enterprise level, such as car parks in buildings and shopping malls.

#### Big Data Consolidation and Resource Sharing

The essence of big data is to find the relationships and factors that are difficult for the human mind to detect through the strong correlation power of the computer after collecting the data. However, if the collected data, such as the daily number of vehicle trips on a particular road and the frequency of traffic accidents on that road, are scattered in different government departments, it will not be possible for a particular department to master and use all the available data and so it will be difficult to derive full benefit from them. Therefore, it is very important to consolidate and process the data first and then to share the resources with relevant departments, so as to achieve effective application, solve the existing problems or enable enhancement.

#### The Challenge of Data Management

Due to the complexity and diversity of internet of things (IoT) devices, the collected data are of huge amount and widely distributed, which often poses severe challenges to networks, computing and storage, and operation and maintenance management and so on. To address this, Cloud Computing which is a wide embracing process in the IoT world provides a solution. In 2018, HIKVISION first launched the AI Cloud architecture, introducing the Cloud-edge Integration solution that incorporates Edge Computing and Cloud Computing, which designs an AI Cloud architecture through the four concepts, Edge Perception, Converge on Demand, Multi-layered Cognition, and Multi-tier Application. The new architecture can thoroughly solve the problems of collection, storage, computing, application and management brought about from the edge to the cloud in reality. This solution will certainly help boost the development of smart city.

# 香港智慧城市發展

香港地少人多車更多,交通往往影響民生及經濟效益。粵港 澳大灣區的互融驅動下,未來交通將變得更繁忙,所以改善 交通是必要的。加上香港正大力推動科技發展,其中一個重 點是發展智慧城市,其發展藍圖表明,智慧出行是一個非常 重要的元素。除了以上提及的三地車牌及車輛識別系統外, 海康威視還可以提供道路及流動監察系統、車種分佈及車流 統計系統,以及違例停車檢測系統。於不同據點收集數據, 然後向儲存在人工智能雲的大數據進行分析,最終監管部門 和執法部門會根據分析制定有關策略,透過不同的系統作出 回應,處理問題。而這些系統不單只可應用在城市層面, 還可應用於企業層面,如大廈及商場內的停車場等。

# 大數據整合 資源共享

大數據的精髓,在於收集數據後,透過電腦的強大運算能 力,找出人類肉眼難以看到的關係和因素。可是,如有關數 據散落在政府不同部門中,例如每天行駛某公路的車輛數目 及該公路發生交通意外的頻率等,就令單一部門難以掌握和 理解問題,更遑論解決方案。所以把數據先整合和分析, 再跟不同部門共享十分重要,這樣才能達至有效的運用, 解決現有問題或改善現狀。

# 數據管理的挑戰

由於物聯網設備類型複雜多樣,收集的數據龐大且分佈廣 泛,往往使網絡、計算儲存、運維管理等面對諸多挑戰, 而雲計算在物聯網領域並非萬能。2018年,海康威視首度推 出人工智能雲架構,介紹「雲邊融合」方案(邊緣計算結合 雲計算),透過「邊緣感知、按需匯聚、多層認知、分級應 用」四個理念,設計出一個人工智能雲架構,徹底地解決現 實中從邊到雲所帶來的採集、儲存、運算、應用及管理的問 題,為推動智慧城市的發展邁出重要的一步。

Al Cloud	AI Cloud架構	簡介	應用
EDGE NODE EDGE DOMAIN COUD CINITIA COUD C	邊緣節點 (Edge Node)	■即時回應 將大量的資料進行整合 及作前端智慧分析	● 人臉考勤 ● 人/車管控
	邊緣域 (Edge Domain)	■及時回應 感知數據匯聚、儲存、處 理和智能應用	● 軌跡追蹤 ● 指令調度
	雲中心 (Cloud Center)	■按時回應 業務數據融合及大數據 多維分析應用	● 預測&預警 ● 多維深層感用調度

![](_page_44_Picture_0.jpeg)

![](_page_44_Picture_1.jpeg)

# To Be Smart Is To Identify the Needs of the Citizen 智慧城市應依據市民大眾的需要

**PhD.Alex Katsanos** Head of Business Advisory, Arcadis Hong Kong and Macau 凱諦思香港及澳門業務諮詢主管

Hong Kong has strived, in recent years, to develop a Smart City vision for itself. The recent Budget Announcement and the release of the Hong Kong Smart City Blueprint provide the framework, funding and initiatives to realize Smart growth in innovation, research and development. With so much emphasis on becoming Smart, what will the impact be on how we design, construct, retrofit and operate our buildings and how will this change the user's experience?

#### It starts with the Government

Hong Kong's Smart City Blueprint outlines how it will 'embrace innovation and technology to build a world-famed Smart Hong Kong characterized by a strong economy and high quality of living'. Embracing the Blueprint and to stress the criticality of its success, Hong Kong's Chief Executive, Carrie Lam, has personally committed her services to lead 'a high level, inter-departmental steering committee on Innovation and Technology'. This focused support is important to build momentum, cut through bureaucracy and create a platform that will enable the implementation of the vision. The Blueprint considers six development areas with associated initiatives and a well-planned roadmap: Smart Mobility, Living, Economy, People, Government and Environment. 香港近年來一直致力於為自己發展智慧城市的願景。近期的 《財政預算案》及大灣區藍圖,透過增加創新、研究和開 發,為實現智能化而提供了框架、資金及倡議。香港如此重 視智能化,對我們如何設計、興建、改造和營運建築物,以 及建築物如何改變用戶體驗有何影響?

# 智慧香港始於政府

香港現在擁有自己的《智慧城市藍圖》,概括描繪出香港將 如何擁抱創新科技,打造世界聞名、以強大經濟和高品質生 活為特色的城市。為讓藍圖邁向成功,香港行政長官林鄭月 娥女士不但身體力行,更致力引領政府高層及跨部門的創新 及科技督導委員會推動相關工作。如此的重點支持實乃不可 多得的動力,減低了官僚主義並創造一個實現願景的平台。 藍圖考慮了六個發展計劃及相關措施,精心規劃了遠景: 智慧出行、生活、經濟、市民、政府和環境。

![](_page_44_Picture_10.jpeg)

Smart・智城

![](_page_45_Picture_0.jpeg)

The initiatives associated with Smart Environment and Government are the ones that will mostly affect the future of buildings in Hong Kong. Specifically, Smart Environment, which makes provisions aimed towards encouraging sustainable green building design, retro-commissioning, Smart IT technologies, Smart water meters and LED lighting retrofitting, while Smart Government is set up to promote Building Information Modelling (BIM) and Common Spatial Data Infrastructure (CSDI). Putting this technology into use along with additional applications such as facial recognition, Smart HVAC, and Internet of Things (IoT) can solve complicated challenges in Asset Management and provide valuable insights to both building stakeholders and the Government.

Beyond the development areas and initiatives in the Smart City Blueprint, there are major global and regional trends, which are putting Hong Kong's buildings under increasing demand to provide a Smart and fit-for-purpose environment. Examples include, amongst many others, the future of parking and how it will be affected by the disruption of autonomous vehicles, the future of retail from larger units that stock products into 'product experience' spaces, the expanding footprint of co-working spaces and the reduction in space needed through hot-desking. Developers and owners will be welladvised to consult these trends and inject flexibility into their assets.

Finally, understanding the needs of the building's end-user is critical. Whether it's reducing carbon footprint to improve sustainability or creating attractiveness for tenants to reduce operational costs, identifying these needs and creating specific objectives will define the starting point for reviewing smart technology adoption. Without identifying the requirements of the end-user, you run the risk of adopting technology for the sake of technology, which has the potential to waste time, money and resources. It defeats the purpose – it's not smart.

智慧環境和政府相關的措施主導了香港建築物的未來。具體 而言,就智慧環境制定的相關規定,旨在鼓勵可持續綠色 建築設計、重新校驗、智能IT技術、智能水錶和LED照明改 造,同時建構智慧政府,以促進建築信息模型(BIM)和通 用空間數據基礎設施(CSDI)。將有關技術與面部識別, 智能暖通空調和物聯網(IoT)等其他應用結合使用,可以 解決資產管理中的複雜挑戰,並為建築利益相關者和政府提 供有價值的見解。

除了《智慧城市藍圖》的發展和措施外,還有一些主要的全 球和區域趨勢。這些趨勢正在使香港的建築物不斷增長, 以提供一個既智能且合適居住的環境。私人開發商和持有人 可諮詢這些趨勢,並為其資產注入靈活性。當中包括未來泊 車系統及自動駕駛車輛的出現,以及將產品儲存到「產品體 驗」空間的大型零售商,將如何影響零售業的未來。還有共 享工作空間的興起,透過減少辦公桌以擴展空間。

然而,對建築物最終用戶需求的理解亦是箇中關鍵。不論是 減少碳足跡以提升可持續性;或是以智能照明吸引租戶以減 低營運成本,成功辨別這些需求並釐定具體目標,便能從一 開始審視智能科技的應用。缺乏此一步驟,技術應用只會淪 為裝飾,浪費了時間、金錢和資源。這也違反了最初目的, 無法讓城市發展得更具智慧。

![](_page_45_Picture_7.jpeg)

Smart・智城

![](_page_46_Figure_0.jpeg)

Editor-in-Chief	•
總編輯	

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![](_page_47_Picture_0.jpeg)

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![](_page_47_Picture_6.jpeg)