

Smart City Consortium Spearheads Diploma Programs to Learn about Smart City Technology

智慧城市聯盟領先推行 智慧城市科技文憑課程



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The advent of 5G is redefining our daily lives. To pave the way for technological advances, the Hong Kong Government released the first edition of its Smart City blueprint in 2017, which lists the development plans for several smart categories, namely the economy, people, government, environment, mobility, and living.

The first blueprint cited more than 70 initiatives, including smart lamp posts, electronic identities, and virtual banking licenses. As 5G's main feature is access to copious amounts of secure data with ultra-low latency, it is vital that data is accessible in public areas for the city's citizens.

President of the Smart City Consortium (SCC) Gary Yeung has been working on promoting for providing common spatial data infrastructure to enable open data access in public areas, as well as similar future projects which involve the installation of physical infrastructure for digital use.

When Hong Kong citizens have access to data, changes will take place in a number of institutions. Consider how 5G can create opportunities for proactive, predictive, and preventative healthcare. For instance, individuals can wear sensors that provide real-time tracking of their vital signs, without a doctor's physical presence.

An Internet of Things (IoT) network can track the health status of individuals in real-time and detect potential illnesses beforehand. They can undergo basic body checks, and a health system of this kind can link doctors and caregivers with patients. With enough data, doctors can provide personalised diagnoses via tele-medical consultation.

Another realm to consider is Smart Transportation. Driverless cars need to communicate with other cars, passengers in the car, and the road. As driverless cars learn to make decisions on their own, the autonomous vehicles could become an important service.

5G 的來臨重新定義我們的日常生活。為推進科技發展，香港特別行政區政府於 2017 年推出首份智慧城市藍圖，從經濟、市民、政府、環境、出行及生活等籌範，勾劃出多個智慧城市發展計劃。

首份智慧城市藍圖提出了 70 多項措施，包括智慧燈柱、數碼個人身份 (eID) 及虛擬銀行牌照等。5G 的主要特點是利用超低時延連接龐大的安全數據，因此，讓市民可以在公共地方存取數據是極其重要的。

智慧城市聯盟會長楊文銳一直致力推動提供「空間數據共享平台」，促使公共地方開放數據，與及專注於安裝數碼用途基楚設施的未來項目。

當香港市民能存取數據，一系列改變將會發生在不同領域。試想像 5G 如何為醫療界帶來主動性、預測性及預防性保健的機會，例如，人們只需配戴一個提供實時偵測健康狀況的感應器，便可省卻醫生的親身到場診症。

物聯網 (IoT) 可協助實時偵察個人健康狀況，偵測潛在病徵，及早治療及預防；只需配合一個讓病人連繫醫生和照顧者的醫療系統，患者便可以進行自我身體檢查。有了足夠的數據，醫生便為個別病人提供遠程診斷。

智慧交通將是發生改變的另一領域。無人駕駛汽車需要與其他車輛、乘客及路面進行溝通。隨著無人車學會自行判斷，自動駕駛汽車將成為一項重要的運輸服務。

Similar to a ride-share app, people can use their smartphone to request a driverless car at any time of the day, to travel from point A to point B. The user can see the precise location of the car in real-time on their smartphone, the estimated arrival time and the planned route to the destination. There will be no concerns about driver fatigue or intentional detours. Parents who send their kids to school in driverless cars can monitor them via CCTV in the cars, call the car back at any time, and specify who could unlock the car once the child arrives at school.

The third realm that will change vastly is education. Because of the pandemic, there has been an increasing need for online education, which is likely to shift norms even after offline education resumes. Yeung advocates for adaptive learning in education technology, meaning students will have a common foundation in their early years' education (junior high), but will proceed at their own pace in courses they pursue at high school.

Online learning will also eliminate the need for physical textbooks. In time, Augmented Reality will enable digital texts to be read in various ways. People will be able to talk to each other in different languages, in real-time, with a digital translator that conveys the appropriate tone, intent and message.

Healthcare, transport and education are just a few of the institutions that 5G redefines. Entertainment will likely be adopted most quickly, as popular games have been available on hand phones since the early days. With 5G, the potential for limitless entertainment is unleashed. With Virtual Reality and low latency, people can attend concerts and even virtually sit together, regardless of where the actual concert is held. While musicians from different countries can play music together as a band in the virtual world.

These entertainment applications will alter business models, so that businesses can create both online and offline versions of events or even simple games. SmarTone has developed a robot that plays the "rock paper scissors" game and never loses. The camera on the machine helps predict what shape the player is likely to form to enable faster response. Projects like these are made possible because of rapid data flows in public areas. As people are given access to data in public areas, various technologies will synthesise to create smart solutions.

Stages of Adopting 5G

Many buzzwords are associated with 5G. Laypeople often associate 5G with big data, IoT, Artificial intelligence (AI), Augmented Reality, and Virtual Reality. But how do these processes interact? According to Yeung, IOT "adds then subtracts". That is, connected devices enabled by IoT capture big data via sensors and automated systems, thus creating an overabundance of information. AI then combs through the raw data to find relevant data and produce solutions.

通過使用類似共乘應用程式，大眾可以利用智能電話在任何時候召喚無人車服務，由 A 點到達 B 點。用家可以在智能電話上檢視無人車的實時位置，預計到達時間和計劃行駛至目的地的路線。使用無人車服務無需擔心司機出現不適或故意繞道的情況。家長可利用無人車送子女上學，並透過閉路電視監察車廂內的情況，亦可隨時召喚車輛回程，當到達學校時更可指定授權單位打開車門讓子女下車。

第三個變化最大的領域是教育。在新冠肺炎的影響下，網上教學的需求大增，即使回復正常上學模式後亦然。楊先生倡導業界及早適應教育科技學習，讓學生在接受早期教育時已打好一定的科技應用根基，並待他們升上中學時可按照個人步伐深化學習。

網上學習將減低對實體書本的需求。擴增實境 (AR) 能協助從多渠道閱讀數碼內容。人與人之間藉著數碼翻譯器便可用不同語言進行實時溝通，包括轉換適當的語氣、意圖和訊息。

醫療保健，交通運輸和教育是受 5G 重新定義的部分日常生活。當中，最快運用 5G 特點應該是娛樂層面，皆因很多受歡迎的遊戲已在早期的手提電話中出現。5G 可以說是釋放了廣泛娛樂體驗的無限潛力。有了虛擬實境 (VR) 及低時延，人們可以不受地域限制，隨時觀看演唱會，恍如置身現場一樣。世界各地的音樂人更可以集結在虛擬世界裡組成樂隊，同時演奏樂曲。

這些娛樂應用將改變商業模式，商家可以推出在線及離線版本的活動或更簡易的遊戲。數碼通已研發出一個猜「包剪揼」的機械人，而且從未輸過。安裝在機械人身上的鏡頭可預測對手的手勢，從而令反應更快。若在公共地方達到快速的數據傳輸，便能促使這類項目應運而生。人們只要能夠在公共地方存取數據，不同的科技將可成就各式各樣的智能方案。

5G 的應用階段

與 5G 相關的流行詞彙眾多。一般人會將 5G 與大數據、物聯網、人工智能 (AI)、擴增實境 (AR) 和虛擬實境 (VR) 等掛上聯繫，但它們彼此之間是如何互動？楊先生表示，IoT 是「先加後減」，意即 IoT 將不同的終端連繫，然後透過感應器及自動系統取得大數據，再歸納成海量資訊。AI 則梳理原始數據找出相關的數據及產生結論和方案。

We live in the digital age and data is arguably the most valuable assets. However, there is often too much data for humans to manage, so we need machines to aid us in creating the algorithms to improve our everyday life.

For 5G to successfully transform lifestyles, there are three steps: Technology first, policy second, people third. Technology is obviously needed to leverage data and its accompanying applications, but it is not enough by itself. There must be policies that inform the population of what is acceptable and safe before applications can follow. Once policies are set, the last step rests on people adopting the latest technology.

Lifestyle changes due to 5G will affect different generations simultaneously. While there may be generational differences in technological fluency, social and cultural norms will encourage people of all ages to adopt new technologies. Yeung is confident that Hong Kong society will effortlessly transition to 5G. He notes that although Baby Boomers did not grow up with the web and email, are now users of smartphones, instant messenger services, and social media for personal and commercial purposes.

That being said, Yeung acknowledges that Hong Kong faces a double-aging problem: the aged population will hit a record high in the next 15 years and many of these people are living in buildings with deteriorating data infrastructure. Old buildings have worn fixed lines that make connectivity difficult. Fortunately, 5G can potentially overcome this problem because there is no longer a need to renew fixed lines. Installing 5G equipment would allow the elderly to access data and provide smart healthcare and smart entertainment, for which there will be strong demand, particularly since the period of retirement will generally be longer than previous generations.

Since adopting 5G technology requires cooperation, connections, and public awareness, there needs to be an entity devoted to promotion of smart city technologies. That is where the Smart City Consortium shines.

Smart City Consortium

Hong Kong's Smart City Consortium (SCC) was set up by industry leaders and professional bodies to help the Hong Kong Government to transform Hong Kong into a smart city. SCC serves as a platform that connects the Government, academia, and commercial organizations to cooperate on smart city issues.

SCC promotes public awareness about adopting smart city technologies, including promoting initiatives to align researchers from abroad on IoT product researches (capacity, security, connectivity). According to Yeung, property technology in the digital age means there is not only a need to protect one's data via cybersecurity, but also a need to protect the process by which data travels. This includes protecting electricity sources from being hacked.

我們身處在數碼時代，數據可以說是最重要的資產。但龐大的數據量並非人類能一一管理，因此我們需要機器的輔助製造演算法，從而改善我們的日常生活。

要 5G 成功轉化我們的日常生活行徑，必須 3 個步驟：第一是科技，第二是政策，第三是人。科技顯然地需要依賴數據及其附加應用才足夠；然後，必須配合相對應的政策去讓大眾知道何謂可接受和安全，然後方可付諸應用。當政策落實，最後一步就是靠人去應用最新的科技。

5G 帶來的生活方式轉變將同時影響不同的世代。即使不同世代的人們對科技運用的認知及純熟度存在差異，但社會及文化規範將鼓勵各個年齡層採用新科技。楊先生認為，即使嬰兒潮一代不是隨網絡和電郵一起成長，如今他們亦已成為智能手機、即時通訊服務及社交媒體的用戶，因此楊先生有信心香港會輕易地過渡到 5G。

即使如此，楊先生也承認香港正面臨雙重老齡化問題：老化人口在未來 15 年將創下歷史新高，他們大多數住在一些數據基礎設施日益耗損的樓宇，而舊樓宇內破舊的固網電話線室礙網絡連接。有了 5G 便可克服這個困難，因為使用 5G 通訊不再需要更新固網電話線。隨著現今世代的退休生活延長，5G 服務的需求將會大增，安裝 5G 設備可以讓長者存取數據，並為他們提供智能醫療及智能娛樂。

要善用 5G 科技需要協作，連接及公眾意識，當中要有一個組織致力於推進智慧城市科技，這正是智慧城市聯盟的使命及最強大的優勢。

關於智慧城市聯盟

香港的智慧城市聯盟由一群業內領袖及不同的專業人士所創立，旨在協助香港政府把香港發展成為智慧城市。智慧城市聯盟是一個連繫政府、學術界及商業機構的平台，共同協作創建智慧城市的相關事宜。

智慧城市聯盟致力提升大眾對運用智慧城市科技的認識，包括促進來自海外研究人員開發的 IoT 產品科研（容量、安全性及連接性）的一致性。楊先生表示，數碼時代裡的地產物業科技不再單單透過網絡安全去保障個人資料，而是要保障整個數據傳輸的過程，當中包括保護電力來源免遭黑客入侵。



SCC has produced advisory papers pertaining to the Smart City blueprint, and publications and newsletters covering how IT is used in various domains and its anticipated milestones. Hong Kong ranks highly in terms of being a global smart city and is ahead of all mainland cities in this respect.

To maintain this lead, it is important to educate the Hong Kong public about smart city technology. To this end, SCC founded the Smart City Academy and has lined up various educational institutions to create courses on smart city subjects. These include a diploma's program with the Vocational Training Council, and may also a master's program with Lingnan University, where students can earn a diploma focussed on smart cities.

As 5G becomes more accessible due to the installation of infrastructure and collaborations with the Government and different entities, Hong Kong will attain its goal of Smart City 3.0. The first two editions of Smart City are technology-centric and city-led, respectively, while Smart City 3.0 sees citizens contribute much-needed data via crowdsourcing. As such, people's lifestyles will be redefined because of city-wide access to low-latency secure data. ●

智慧城市聯盟曾就關於智慧城市藍圖編製諮詢刊物和新聞通訊，內容涵蓋如何在各個領域運用資訊科技及其預期的里程碑。目前香港在發展成為世界級智慧城市方面位列前茅，領先於所有內地城市。

要維持這個領導地位，便需要教育香港市民大眾有關智慧城市科技。有見及此，智慧城市聯盟建立「智慧城市學院」，並與各大教育機構合作舉辦以智慧城市為題的課程，其中包括與職業訓練局（VTC）合辦的文憑課程，以及與嶺南大學磋商中的碩士課程，讓學生可以獲取針對智慧城市的文憑。

5G 通訊隨著基礎設備的安裝越趨普及，與政府與不同組織及團體的協作使之變得更方便應用，香港將實現智慧城市 3.0 的目標。首兩份智慧城市藍圖分別以科技為本及城市主導為中心，而智慧城市 3.0 側需要全民帶動，由市民提供急需數據。因此，在全城皆可存取低時延安全數據的基礎上，大眾的生活模式將重新定義。 ●