SMART VISION 智城

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善用電子健康憑證互認機制 重啓跨境商貿 復甦本地經濟 保護個人私隱

"eHEALTHPASS" SHARING MECHANISM TO RESTORE CROSS-BORDER BUSINESS ACTIVITIES

About Us 關於

Smart City Consortium (SCC)
智慧城市聯盟

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

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

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給公眾的話

"eHealthPass" Sharing Mechanism to Restart Cross-border Business Activities
電子健康憑證互用機制　重啓跨境商務活動

2019冠狀病毒病爆發以來，全球疫情反覆，出行限制和強制性隔離成為各國抗疫的必要手段，即使在新冠疫苗成功研製後，這些措施並不能馬上解除，疫情對全球經濟的影響亦因此無法真正得到緩解。

如何安全地開放境內外出行是恢復經濟穩定的重點之一，以拯救香港深受疫情衝擊的行業，其中尤以旅遊、零售和飲食業等受到的打擊最為嚴重。

考慮到香港的特殊環境，不宜對市民進行強制追蹤及全民檢測，特區政府在堅持抗疫的同時，亦要兼顧社會經濟復甦，但如何促使抗疫政策有效的實施，並為各行業，特別是零售、餐飲及美容等因「限聚」措施多次面臨停頓的行業創造復工的有利條件，成為施政者思考的重點。

智慧城市聯盟（SCC）、亞洲公匙基建聯盟(APKIC)及香港公匙基建論壇（HKPKIF）認為在疫情得到完全控制之前，應當積極利用數碼科技來主動突破目前的困局。數碼科技具跨地域、高效率、低成本的優勢，有利商業活動的正常開展，緩解當下由疫情引致的經濟停滯。這是通過與本地專家學者的深入研究，並結合國際社會目前通行做法的結論。

Since the outbreak of the COVID-19 pandemic, the situation around the world is fluctuating. Travel restrictions and mandatory isolations have become essential for countries to fight against the disease. After the successful development of vaccines, these measures cannot be revoked immediately, and the impact on the global economy cannot be fully reduced.

In Hong Kong, how to safely restore domestic and overseas travel has become one of the key points in restoring local economic stability after the economy being hit by the pandemic, especially in tourism, retail and catering industries.

In view of the special environment of Hong Kong, it is not appropriate to conduct compulsory tracing and viral testing of citizens. The government keeps fighting against the pandemic, and hopes that the socio-economic activities will recover. However, how to implement anti-pandemic policy with zero impact to all industries is the key. This is especially important to the retail, catering, and beauty industries, which have been repeatedly disrupted due to "the prohibition on group gathering" measures. Creating favorable conditions for work resumption has become the focus in policy makers' mind.

SCC, Asia PKI Consortium (APKIC) and Hong Kong PKI Forum (HKPKIF) believe that the digital technology should be used more actively to enable the pandemic to be fully contained. The advantage of the digital means is boundaryless, high efficiency, and low cost which can overcome the current predicament, promote resuming of normal business activities, and reduce economic disruption caused by the outbreaks. This conclusion is through in-depth research with local experts and scholars and combining with the current practices of the international community.

Mr. Gary Yeung, MH
楊文銳先生，榮譽勳章
President
會長

因此，SCC、HKPKIF、APKIC等機構研發並正在推廣數碼化健康憑證應用程式「e健行」，用以顯示疫苗接種紀錄及測試結果。當證實疫苗有效並獲用戶授權後，檢測結果和疫苗接種紀錄也可以一機在手，成為通行證。

我們透過區塊鏈的自我管理數碼認證技術，以可驗證的數碼證書、Trust over IP（ToIP）、私隱數據管理及全球法人機構識別編碼（LEI）的開放標準，解決數碼身份的管理、認證，並處理認識客戶（KTC）、數據收集和法規遵從性的問題，發展香港的機遇及潛力。而且ToIP 在設計上充分考慮到私隱的保障，滿足香港人最重視的個人資料（隱私）條例，更以自我管理（分佈式）數碼身份基礎設施，建立可信性的生態系統，加快完善公共服務的治理，應付由疫情帶來的問題。

現時香港政府已提供端口，我們不應只是局限於香港的智方便 iAMSmart，可與它們融合，大規模推廣「e健行」，並利用香港現有的數碼基建——電子證書制度作認證。此「電子針卡」方便我們過關、通關，有望有效協助市民恢復經濟活動。

透過運用先進的數碼科技，我們期望香港能突破跨境活動的障礙，早日與世界接軌，恢復經濟及人流互動。

Therefore, SCC, HKPKIF, APKIC and other organizations have developed and are promoting a digital health certificate application "eHealthPass". The program will display vaccination records and test results, when one's vaccination is confirmed to be effective; and when authorized by the user, the test results and vaccination records can be stored and become a pass.

We use self-managing digital authentication technology from blockchain technology to solve attestation, and deal with the issues of knowing the customer (KTC), data collection and regulatory compliance with open standards like: digital identity with verifiable digital certificates, Trust over IP (ToIP), privacy data management, and Legal Entity Identifier (LEI) to develop Hong Kong's opportunities and potential. Moreover, ToIP fully attends to the protection of privacy in its design to meet the personal data (privacy) regulations that locals value most. It also uses self-management (distributed) digital identity infrastructure to establish a credible ecosystem and accelerate the improvement of the public governance of services to address with the problems brought by the pandemic.

Currently, the Hong Kong government has provided different portals such as iAMSmart, we can integrate these channels to promote eHealthPass on a large scale, together with Hong Kong's existing digital infrastructure — an e-certificate system for authentication. This Electronic Vaccination Record facilitates reopening of border, and is expected to be an effective tool to boost recovery of economic activities.

By applying advanced digital technologies, we hope that we can break through barriers for cross-border activities in the world as soon as possible to help restore the flow of people and the economy.

Secretary for Innovation and Technology, Mr. Alfred Sit, JP (fourth from right) attended the " Smart City Blueprint 2.0 Webinar" online forum on 14th January, and met with Government Chief Information Officer, Mr. Victor Lam, JP (second from left) and Chief Executive Officer of Cyberport, Mr. Peter Yan (third from left). Above is a group photo with Hon Elizabeth Quat, BBS, JP (fourth from left), SCC's Honorary President and Member of the Legislative Council, and other guest speakers.

創新及科技局局長薛永恒先生（右四）在1月14日出席「香港智慧城市藍圖2.0網上論壇」，並與政府資訊科技總監林偉喬先生（左二）、數碼港行政總裁任景信先生（左三）和智慧城市聯盟榮譽會長兼立法會議員葛珮帆議員（左四）及出席講者合照。

Smart City Consortium Hopes Smart City Blueprint 2.0 can Promote Social Changes after the Pandemic

智慧城市聯盟期待 智慧城市藍圖 2.0促進疫後社會大轉型

香港政府於2017年底推出《香港智慧城市藍圖》(《藍圖1.0》)，利用創新科技應對城市管理的挑戰和改善市民的生活。在六大智慧範疇「智慧出行」、「智慧生活」、「智慧環境」、「智慧市民」、「智慧政府」及「智慧經濟」推出76項措施，其中逾40項措施已完成或分階段完成。

事隔三年，政府去年12月10日推出新一份的《香港智慧城市藍圖2.0》（《藍圖2.0》），包含140項措施，提出的措施包括仍在落實或持續進行措施，如開放數據、遙距繳費停車收費錶等，以及另外超過60項自《藍圖1.0》後推出的新措施。

智慧城市聯盟（聯盟）一直密切關注政府發展智慧城市的步伐，先後兩次向政府提交共達 40 頁的建議書。此外，聯盟及數碼港在本年1月14日合作舉辦「香港智

In December 2017, the Hong Kong Government released *Hong Kong Smart City Blueprint* ("Blueprint 1.0"). To address the challenges of city management and improve people's livelihood through innovation and technology (I&T), the *Blueprint 1.0* proposed 76 initiatives on six main aspects which includes Smart Mobility, Smart Living, Smart Environment, Smart People, Smart Government and Smart Economy. More than 40 initiatives are completed or being completed in stages.

Three years later, the Government released the *Smart City Blueprint for Hong Kong 2.0* ("Blueprint 2.0") on 10th December last year with more than 140 initiatives. The proposed initiatives are still being coordinated or implemented, such as open data, remote payment, parking meters, and more. Compared to the *Blueprint 1.0*, over 60 new measures have been introduced.

Smart City Consortium (SCC) has been paying close attention to follow up on government's development of Smart City, and has submitted two advisory papers totaling 40 pages. In addition, on 14th January this year, SCC and Cyberport jointly organized

慧城市藍圖 2.0網上論壇」，介紹剛公布《藍圖2.0》的重點，討論香港未來智慧城市發展的路向。在討論環節中，聯盟會長楊文銳先生提出不少聯盟的看法，與數碼港行政總裁任景信先生及政府資訊科技總監林偉喬先生，商討如何加快香港的智慧城市發展、新發展如何幫助我們應付未來的挑戰等。

對香港未來在智慧城市發展的方向、步伐及成果，聯盟充滿期待，也希望繼續與政府緊密合作，令智慧城市之路可以行得更穩更遠。

智慧出行

交通數據分析系統

政府資訊科技總監辦公室（資科辦）連同運輸署應用大數據技術，開發了一套嶄新的「交通數據分析系統」，分析各類實時交通及運輸數據，以便更準確評估交通情況，讓運輸署能更有效處理事故和發放資訊，提供實時建議，幫助公眾規劃行程，並讓政府得以更有效處理交通事故，以科技優化交通管理。

楊文銳先生在論壇上建議，政府應開放及提供更多實時數據，同時結合其他持份者，讓業界能多參與，為商業機構提供誘因公開部分數據，以便締造雙贏：一方面商界因此更願意分享數據，而市民亦可享受開放數據的便利，為社會大眾提供一個宜居、方便的城市。

應用 5G技術於智能機場

5G的闊頻寬、低時延，令網絡傳輸更為可靠，回應時間也大幅縮短，可處理海量數據。因此，香港國際機場計劃在登記櫃枱、登機證檢查站和登機服務以5G使用生物識別技術，並延續無縫的機場行程體驗，將流動登記服務擴展至機場以外的地方，如主題公園、酒店、會議中心、交通樞紐等，以及提供行李提取服務，為旅客提供輕鬆寫意的旅遊體驗。同時，香港國際機場又會建立「數碼分身」，以虛擬實境三維模型模擬機場環境，用於運作演習或訓練，以提升營運和管理效率，令規劃設施及建造工程時，更能回應旅客的需要。

a "Smart City Blueprint 2.0 Webinar" to highlight the key points of *Blueprint 2.0* and discuss the pace of future smart city development in Hong Kong. In the discussion session, SCC President Mr. Gary Yeung, MH shared his views with Cyberport's Chief Executive Officer Mr. Peter Yan, JP and Government Chief Information Officer Mr. Victor Lam on how to accelerate the development of Hong Kong's smart city and how it can help us cope with future challenges.

SCC is looking forward to the direction, progress and results of Hong Kong's development into a smart city, and will continuous to work closely with the Government to make a steady and far fetching journey to become a smart city.

Smart Mobility

Traffic Data Analytics System

The Office of the Government Chief Information Officer, together with the Transport Department (TD), is developing a new Traffic Data Analytics System using big data technology to analyze various types of real-time traffic and transport data, with a view to provide more accurate analysis and assessment of traffic conditions, enabling TD to handle incidents and disseminating information more effectively. It can provide real-time advice to the public for journey planning, and enable the Government to handle traffic incidents more effectively and improve traffic management with technology.

In the panel discussion, Mr. Gary Yeung suggested that while the Government should open up and provide more real time data, at the same time, it should integrate more stakeholders within the industry so that we can create a win-win situation: commercial organizations would be more willing to contribute and share some of their data so that people in Hong Kong can enjoy benefits such as avoidance of traffic jam and the time saved in commuting to work with the open data. As a result, we can provide a more livable and convenient city for the public.

Applying 5G Technology to Smart Airport

The wide bandwidth and low latency of 5G will enable more reliable network transmission with significantly shorter response time in handling massive data. With this advanced technology, Hong Kong International Airport (HKIA) can enhance the seamless airport experience through the use of biometrics at check-in counters, boarding pass checkpoints and check-in services. It can also extend the mobile check-in services in places outside the airport, such as theme parks, hotels, convention centres and transportation hubs including baggage claim services for a more relaxed travel experience. At the same time, a digital twin which is a virtual reality 3D model of the airport will be established for operational training, better planning and more effective management of facilities and construction works. As a result, the airport is able to respond to the needs of passengers in a more efficient manner.

Smart Living

"iAM Smart" One-stop Personalised Service Platform

The now in operation iAM Smart Platform and account registration is underway. The platform will be used in a pilot sandbox programme for the financial sector initially, and is expected to extend the service to public utilities afterwards. It is hoped that the introduction of iAM Smart will provide a one-stop personalized service platform to facilitate the public to use digital government services and to conduct commercial transactions.

智慧生活

「智方便」一站式個人化服務平台

現時正啟用的「智方便」平台，已開展帳戶的登記工作，其後將擴展沙盒先導計劃至公用事業並先讓金融業界試用和測試。我們期望推出「智方便」一站式個人化服務平台，以方便居民使用數碼政府服務和進行商業交易。

智慧醫療服務

政府早於2020年5月展開一系列智慧醫院服務，包括於各公立醫院推出電子服務站並試行定位資訊服務及導航技術、康復病床的病床預約系統和於指定專科門診診所試行抽血預約系統，試驗使用配置有生命表徵量度裝置的自動系統界面等。同時，醫院管理局的數據實驗室已推出大數據分析平台，促進醫療相關研究。

智慧環境

「智慧廁所」試驗計劃和在公廁應用科技

政府探討在公廁應用科技，推出「智慧廁所」試驗計劃，包括在衞生潔具應用抗菌塗層、自動消毒把手作抗菌用途，並以不同的科技例如物聯網去消除氣味和改善空氣質素；而首個智能公廁試驗計劃將於2022年4月在香港文化中心及荃灣體育館推出。

智慧市民

培育青年人才

政府會為中小學課程主任提供科學、科技、工程及數學（STEM）培訓，並鼓勵他們繼續推行更多和STEM相關的課程和活動。現時已完成五輪課程，參加過的中小學教職員分別有6,300及5,400人次。

此外，政府又推行中學IT創新實驗室計劃，向全港公帑資助的中學提供資助，加強培訓中學生在課程以外的資

Smart Healthcare Services

The Government has started a series of smart hospital initiatives in phases in selected public hospitals since May 2020. This includes the use of automatic system interface with vital sign devices, the pilot use of electronic kiosks for location-based services and navigation technology, the Bed Booking System for convalescent or rehabilitation beds and the system of Blood Taking Scheduling in selected specialist out-patient clinics. At the same time, the Hospital Authority has formally launched the Big Data Analytics Platform under the Data Collaboration Lab for facilitating healthcare-related research.

Smart Environment

Launch the "Smart Toilet" Pilot Programme and Explore Application of Technologies in Public Toilets

To enhance environmental hygiene, the Government is exploring the application of technology in public toilets and has launched a pilot programme on "Smart Toilet". It includes the anti-microbial coating for sanitary wares, self-sanitizing handlers for antibacterial purpose, with various technologies such as internet of things (IoT) to abate odour and improve air quality. The first pilot project will be conducted at the Hong Kong Cultural Centre and Tsuen Wan Sports Centre in April 2022.

Smart People

Nurturing Young Talent

Trainings on science, technology, engineering and mathematics (STEM) have been organized for curriculum coordinators to encourage them to implement more STEM-related classes and activities. Currently, all 5 batches of these training courses were completed with about 6,300 and 5,400 participants from secondary and primary schools respectively attended.

Moreover, to enhance information technology (IT) training to young people, the IT Innovation Lab Programme will provide funding support to all publicly-funded secondary schools in the coming three years. Starting from December 2020, it has been open for funding application.

Smart Government

Adoption of Technology

To support businesses in their digital transformation journey, the Government has initiated a series of electronic services. Relevant bureaux/departments (B/Ds) will implement e-licensing services for all licensing applications and digitize most licensing applications before mid-2022 under the "Be the Smart Regulator" Programme. Furthermore, some 900 government services will be transformed involving application and approval on a continuous basis under the "Streamlining of Government Services" Programme.

Smart City Infrastructure

The Buildings Department is developing an Electronic Submission Hub to receive and process building plans and related applications to enhance communication between the department and applicants. The measures implemented cover building height restrictions, greenery coverage requirements, landscaping requirements, building separation and setback requirements in the *Sustainable Building Design Guidelines*, application of *Design and Layout Clauses* in land leases, and

訊科技知識。2020年12月開始，合資格中學可以就為期三年的資助計劃提出申請。

智慧政府

科技應用

為協助企業提升效率及更方便市民，政府推行「精明規管」及「精簡政府服務」計劃。在「精明規管」計劃下，所有牌照申請均可以通過電子方式提交，於2022年中前，有關政策局或部門將推行電子牌照服務，範圍包括大部分牌照申請；在「精簡政府服務」計劃下，約900項申請和批核的政府服務會改革精簡。

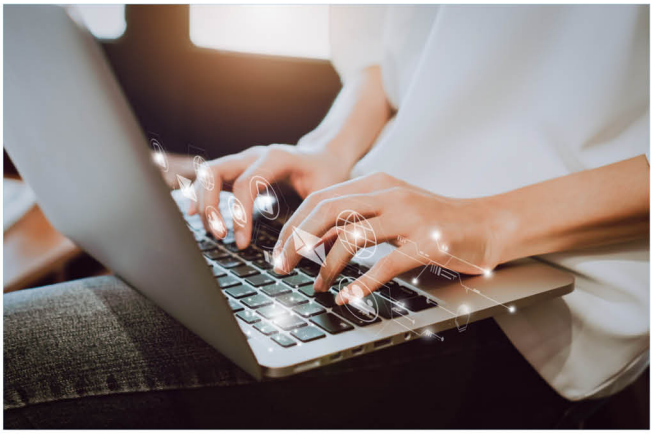
智慧城市基礎建設

屋宇署正開發電子資料呈交及處理系統，以接收、處理建築圖則和相關申請，加強各部門與申請人的溝通。已落實的措施涵蓋建築物高度限制、綠化上蓋面積要求、園境要求、可持續建築設計指引內樓宇間距和樓宇後移的要求、地契內「設計及佈局條款」的應用，以及非建築用地的限制；同時鼓勵業界應用建築信息模擬技術，方便部門引入電腦程式，簡化私人發展項目審批程序，希望加大加快房屋供應。

智慧經濟

金融科技

為強制性公積金計劃的行政工作開發「積金易」平台，於2020年底前已批出積金易平台的標書，並2022年前賦權強制性公積金計劃管理局設立全資附屬公司開展



restrictions on non-building sites. The industry is encouraged to use building information modelling technology to facilitate the introduction of computer programmes by the department to streamline the approval process for private development projects and accelerate the supply of new housing.

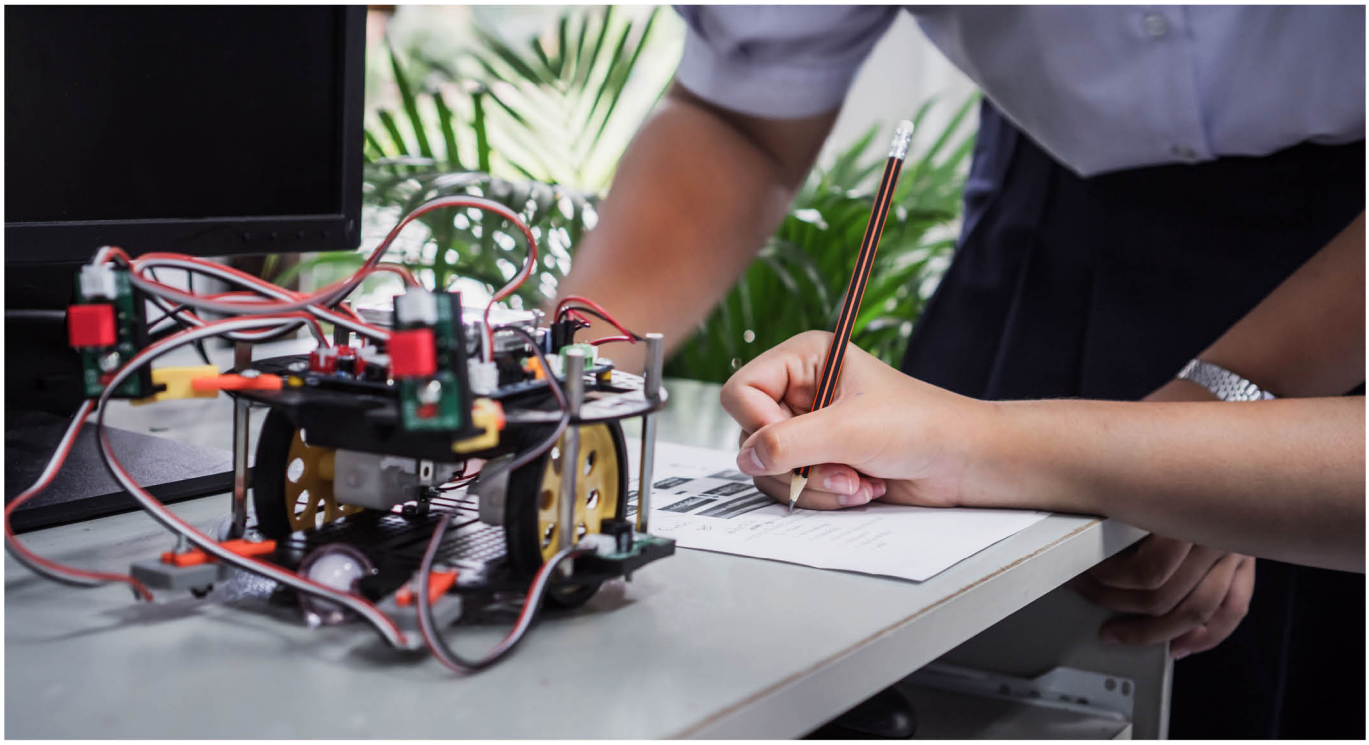
Smart Economy

FinTech

An eMPF Platform for administrating the Mandatory Provident Fund Schemes (MPF) will be developed. At the end of 2020, the Government awarded tender of the eMPF Platform. It aims to set up a wholly owned subsidiary for putting in place the eMPF Project, complete the second phase legislative work and the development of the eMPF Platform by 2022.

LawTech

In June 2020, eBRAM International Online Dispute Resolution Centre, an independent and not-for-profit organization, launched its online platform. The organization will further develop, enhance and operate its online platform to provide a cross-border one-stop dispute resolution and deal-making services to enterprises worldwide.



積金易項目，完成第二階段的立法工作及積金易平台的開發工作。

法律科技

2020年6月，政府在獨立非牟利的一邦國際網上仲裁和調解服務（eBRAM）中心設立網上平台，進一步發展、提升及營運其網上平台，以期為世界各地的企業提供便捷、具成本效益的一站式跨境爭議解決和交易促成的網上服務。

楊文銳先生指出，《藍圖2.0》較少提及跨境及跨地域的機遇。他建議政府應花更多時間思考如何在金融及法律基礎下，推動企業給個人消費者（B2C）的轉數快、跨境支付等的試驗，並把中港兩地的成功模式推廣到鄰近地區，帶動區內發展。

此外，《藍圖2.0》提出嶄新構思，包括智慧鄉村先導計劃，利用科技解決鄉郊地區居民日常生活面對的問題；又增加一個「善用創新科技應對疫情」的新章節。詳情如下：

智慧鄉村先導計劃

《藍圖2.0》提出於鄉村引入智慧科技，為居住在偏遠地區的長者提供遙距醫療服務。智慧鄉村先導計劃包括在鄉公所設置相關設施及使用電子付款，為當地長者提供遙距醫療及Wi-Fi服務；而透過提升電訊覆蓋，有助偵察非法傾倒、野生動物行蹤和水浸，以及加強鄉村保安、利用智能交通系統改善某些路段的路面情況、運用機械人及人工智能協助偵測郊野公園山火。此外，開展這

Mr. Gary Yeung pointed out that *Blueprint 2.0* rarely put emphasis on cross-border and cross-regional opportunities. He suggested that the Government should spend more time thinking about how to promote B2C Faster Payment System and cross-border payments on the basis of finance and law. The successful experience in China and Hong Kong can be copied to neighboring areas to drive the new economy there.

Blueprint 2.0 also proposes the concept of a Smart Village Pilot project, which explores the use of technology to solve the day-to-day issues faced by residents in rural or remote areas, and adds a new chapter on "I&T In Combating COVID-19", including:

Smart Village Pilots

Blueprint 2.0 proposes to introduce smart technology such as telemedicine services for the elderly in rural areas. Smart Village Pilot initiatives include installing relevant facilities at village offices and using e-payment for provision of telehealth services for the elders living in remote areas, together with public Wi-Fi services. The enhanced telecommunication coverage and capacities can help detect illegal dumping, wild animals and flooding, and strengthen security in rural villages. While smart traffic system for certain roads can improve traffic, the use of robotics and artificial intelligence can assist in early detection of hill fire in the country parks. Moreover, these rural intelligence projects may provide more employment and development opportunities for local people, increase the attractiveness to young people, promote the sustainable development in rural areas, and make rural development more dynamic.

I&T in Combating COVID-19

The world has been hit hard in 2020 by the COVID-19 pandemic, which has changed our daily lives and business operation modes dramatically.

些鄉村建設，可為當地居民提供更多就業和發展機會，增強對年輕人的吸引力，促進鄉村地區可持續發展，使鄉村發展更有活力。

善用創新科技應對疫情

2019冠狀病毒病肆虐全球，改變了不少生活和營商模式。善用創新科技應對疫情涵蓋已推行及策劃中的工作，包括推行「居安抗疫」家居檢疫系統、推出「安心出行」感染風險通知及流動應用程式、於公眾街市推廣使用非接觸式付款、設立「2019冠狀病毒病網上爭議解決計劃」等等，致力利用科技支援防疫抗疫的工作，減少人與人之間的接觸結合到政府的恆常工作，並為企業和公眾提供快捷和具成本效益的網上爭議解決服務，以應對疫後的新常態。

政府亦就多個民生範疇推出「互動地圖儀表板」，透過互動圖表和地圖展示有關環境天氣、交通運輸、公共設施及服務和整體城市概況的數據，透過開放數據，有助數據提供者和公眾就進一步集思廣益，鼓勵更多智慧城市發展的創新應用。

總結

聯盟認為，香港作為一個開放城市，必須為市民提供真正便捷和全方位的市政服務，為公共服務電子化，讓大眾生活更方便，也節省各部門的資源消耗，做到真正高效、智慧、便民。同時，我們期望《藍圖2.0》讓企業可利用香港友善的營商環境，促進創新，同時妥善關顧長者及青年人，並優化市民生活及城市發展，構建一個世界聞名、經濟蓬勃及優質生活的智慧香港。

The Government has made good use of innovative technology to respond to the epidemic in works that have been implemented and planned. They include home quarantine system "StayHomeSafe", exposure notification system and mobile app "LeaveHomeSafe" for different trades and premises, promotion of contactless payments in wet markets, establishment of the COVID-19 Online Dispute Resolution Scheme, and more. The Government is also using science and technology to support epidemic prevention and control, reducing human-to-human contact in the government's regular work, and providing fast and cost-effective online dispute resolution services for enterprises and the public.

Various interactive map dashboards have been introduced to inform the public at a glance on environment, weather, traffic, public services through charts and maps. The dashboards also help stimulate data providers and the public to brainstorm for more ideas on open data and new innovative applications for smart city development.

Conclusion

SCC believes that as an open city, Hong Kong must provide citizens with truly assessable, efficient, intelligent, and digitalized public services to make life more convenient for the public, and reduce ineffective use of resources in various departments. We hope that *Blueprint 2.0* will capitalize on Hong Kong's renowned business-friendly environment to foster innovation, to provide better care for the elderly and youth. By optimizing the lives of citizens and urban development, we are able to develop a community with a stronger sense of belonging, and build a world-famous, prosperous and smart Hong Kong with a high-quality of life.

善用電子健康憑證互認機制
重啓跨境商貿 復甦本地經濟 保護個人私隱

"eHealthPass" Sharing Mechanism to
Restore Cross-border Business Activities

世界衛生組織（世衛）估計，新冠病毒將與人類長期共存，各地政府在全力防控的同時，亦在積極尋找儘快重啓經濟活動及商務旅遊的方案。哪個地區能在疫情受控下成功安排跨境活動，便能在危難中突圍而出。目前，國際上普遍認為疫苗是經濟復甦的關鍵，但疫苗接種籌備和群體免疫也需時，遠水不能救近火，因此疫苗方案仍未能惠及很多中小企及跨境商貿活動。

According to the World Health Organization (WHO), the new coronavirus is expected to coexist with humans for some time. While local governments are making every effort to prevent and control the disease, they are also actively looking for solutions that can help restore economic activities and business travel as soon as possible. The regions which can overcome the difficulties on cross-border activities under the control of the pandemic will be ahead of others in the crisis. At present, the international community generally believes that vaccines are the key to economic recovery, but vaccination takes time to prepare, and herd immunity takes a certain period to take effect. Therefore, many small and medium enterprises and cross-border businesses have very passive attitude towards vaccination.

疫情爆發以來，香港政府與市民共同抗疫，成功克服了一波又一波的疫情。當局推出「安心出行」，通過自願性的出行紀錄方式，在需要時向部分群眾進行病毒檢測，從而恢復了社會上一定的商業運作，並且鼓勵消費來紓緩經濟下行的壓力。然而疫情反覆是世界各地的普遍現象，香港以服務業為主的經濟結構在疫情的衝擊下自然受到重創，飲食、零售、旅遊業等多個行業因為社交隔離措施的限制而進入冰河期，失業率亦上升到16年來的新高。

如何安全地開放境內外出行成為恢復經濟的重點之一，因此智慧城市聯盟（聯盟）、亞洲公匙基建聯盟（APKIC）及香港公匙基建論壇（HKPKIF）通過與本地專家學者的深入研究，結合國際社會目前的通行做法，認為在疫情得到完全控制之前，應當採用電子健康憑證互認機制，積極利用數碼科技的跨地域、高效率、低成本的優勢，主動突破目前的困局，促進商業活動正常開展，緩解疫情帶來的經濟困局。

國際上以科技突破跨境活動障礙

世衛於今年3月19日發出「智能疫苗接種證書」（Smart Vaccination Certificate）的初步指引，建議依靠各地政府的公匙基建（PKI）的電子健康憑證作為跨境互認的基礎，而由國際航空運輸協會（International Air Transport Association，簡稱IATA）推出的Travel Pass（國際航協旅行通行證）也是值得參考的例子。

Since the outbreak of the pandemic, the Hong Kong Government and the citizens have worked together in the anti-epidemic work and successfully overcome consecutive outbreak of the pandemic. The authorities introduced LeaveHomeSafe, through voluntary travel records, to test local people for viruses when needed, so as to maintain or restore certain commercial operations in society and distribute cash to citizens to relieve economic retrograde pressure. However, repeated outbreak of the pandemic is a common phenomenon all over the world. Hong Kong's service-oriented economic structure has been hit hard by the impact of the pandemic. Various industries such as catering, retail, and tourism have entered an ice age due to social distancing measures. Unemployment rate has also reached a new high in 16 years.

How to safely resume domestic and overseas travel has become one of the key points for restoring economic stability. Therefore, the Smart City Consortium (SCC), Asia PKI Consortium (APKIC) and Hong Kong PKI Forum (HKPKIF) have conducted in-depth research with local experts and scholars. Combining the current practices of the international community, it is believed that before the pandemic is fully controlled, the mutual recognition mechanism of electronic health certificates should be the way forward, and the advantages of digital technology in cross-regional, high efficiency and low cost should be used to break through the current barriers, promote commercial activities and alleviate the current economic contradictions caused by the pandemic.

How to Make Good Use of Technology to Break Through Barriers for Cross-border Activities in the World

The WHO issued an interim guideline for a Smart Vaccination Certificate on 19 March this year. It recommended to rely on the public key infrastructure of local governments as the basis for cross-border mutual recognition of electronic health certificates. In addition, the Travel Pass launched by the International Air Transport Association (IATA) is also an example worthy of reference.

The mobile app Travel Pass helps travelers in meeting governments requirement on COVID-19 testing and vaccine information with ease. The app encrypts and stores the traveler's "credential", where the relevant information is stored only on the mobile phone without any centralized network storage. The credential will only be presented at the time of boarding, entry and exit within the valid time duration under the authorization of the user.

Travel Pass是一個流動應用程式，因應不同政府對COVID-19測試或疫苗接種的要求，協助旅客輕鬆及安全地提供相關資訊。應用程式採用去中心化的區塊鏈技術，加密儲存受檢測者的數碼病毒檢測憑證(credential)，而且相關資料只儲存於當事人的手機；資訊設有期限，檢測資訊亦需在當事人授權下，才會於登機及出入境時出示。

HKPKIF主席陳婉華女士稱，IATA Travel Pass的設計讓旅客可完全掌控個人的私隱資訊，自行決定共用的內容以及與誰共用，不經中心化數據庫或數據存儲庫，加上歐盟的保護個人私隱數據法律《一般資料保護規例》（EU GDPR），以最高標準保障出行者的數據私隱和安全性。

此外，由各國政府組成的國際民航組織（ICAO）亦制訂了全球認可的標準，用於核實出行者的身份，以及檢測和疫苗接種的資訊。

Ms Eva Chan, chairman of HKPKIF, said that the design of the IATA Travel Pass allows travelers to have complete control over their personal information, what is shared and whom they share with. There is no central database or data repository, and there is a highest standard of data protection laws. The EU General Data Protection Regulation (EU GDPR) guarantees the privacy and security of travelers' data.

In addition, the International Civil Aviation Organization (ICAO) uses a government-recognized global standard to verify the identity of travelers and create digital virus detection certificates on personal test and vaccine information.

President of SCC, Mr. Gary Yeung, MH said that currently the IATA Travel Pass only accepts virus test results issued by accredited laboratories and medical staff, so two technical problems must be solved:

IATA在2020年9月的一份研究，指出非接觸式流程將大受旅客歡迎，因為這不單讓出行更方便，亦可提高安全性。

- 對將護照、手提電話或登機證交給機場的航空公司職員、保安人員或政府人員，70%的旅客存有疑慮；
- 85%的旅客表示，機場的非接觸式流程會讓他們感覺更安全；
- 有44%的旅客表示為了非接觸式流程，願意分享個人資料，對比同年6月的30%，比例大幅上升。

An IATA research in September 2020 amid the COVID-19 crisis showed that contactless processes will be popular with travelers as it makes travelers more convenient and safer:

- 70% of passengers had concerns about handing over their passport, phone or boarding pass to airline agents, security personnel or government officials at the airport;
- 85% of passengers said that touchless processing throughout the airport would make them feel safer; and
- 44% of travelers expressed their willingness to share personal data for contactless process. The figure has risen sharply from 30% in June last year.

聯盟會長楊文銳表示，現時IATA Travel Pass只接受各地認可的實驗室及醫護人員發出的病毒檢測結果，因此在技術上必須解決兩個問題：

1）如何證明當事人出示的「數碼病毒檢測憑證」有效?

Travel Pass採用由國際認可Trust over IP Foundation（簡稱ToIP）的可信賴憑據架構為基礎。ToIP由政府、非牟利組織以及來自金融、醫療、企業軟件和其他行業成員組成及營運，旨在增強數碼時代中消費者和企業的安全性和隱私保護。透過制定穩健和通行的標準，讓個人和企業都能從可靠的來源獲取數據，方便他們更快速和更廣泛地互聯、互動和創新。

2）如何確認不同地區「數碼病毒檢測憑證」由認可的實驗室及醫護人員發出？

「數碼病毒檢測憑證」的認可必須與不同地區的官方監管機構（如香港醫務委員會）所定下的發牌制度掛鉤，因此Travel Pass採用了更嚴謹的法人機構識別編碼（LEI）核實簽署機構身份，確保其為可信及授權單位。

LEI編碼是由20國集團（G20）旗下的金融穩定委員會和全球眾多監管單位聯合推動、以國際標準組織制定的ISO 17442標準為基礎的一個編碼體系，相當於企業或機構的「國際網絡身份憑證」，是國際通用的主體識別編碼。截至2020年5月，LEI已覆蓋超過200個國家的160餘萬機構法人，並在多個領域廣泛使用，而香港亦是全球其中一個參與LEI的地區。

區塊鏈的分散式數碼身份及LEI編碼的國際標準將新一代的數碼世界與現實世界連接起來，促進全球數碼經濟的發展。

以LEI作為基礎，對提高實驗室或檢測機構的國際認可度和信任度，以及在政府部門的監督下對病毒檢測機構的資格進行更嚴謹地管控、支持開展國際出行至關重要，更可進一步改

1) How to prove that the "credential" presented is valid?

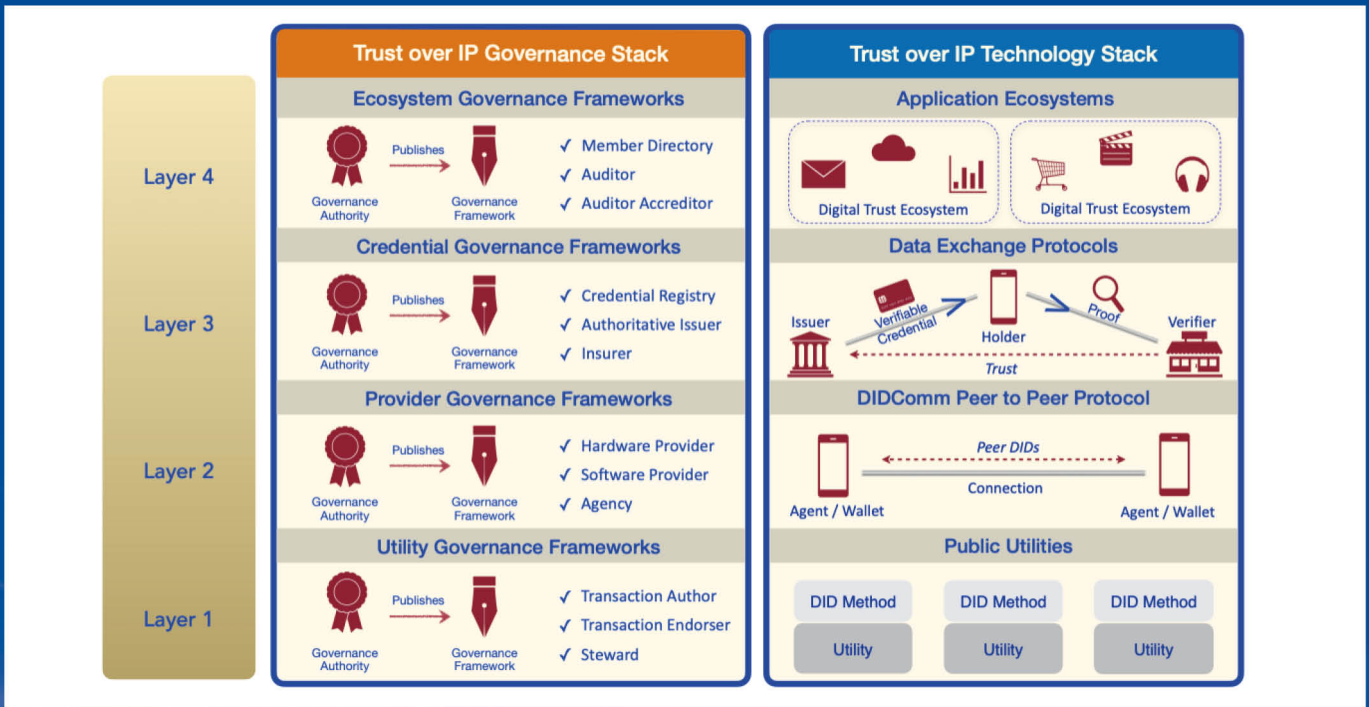
Travel Pass is based on the trusted credential structure proposed by the internationally recognized Trust Over IP Foundation (ToIP). ToIP is composed and operated by governments, non-profit organizations, and private sector stakeholders from finance, healthcare, enterprise software, and other industries to enhance the general security and privacy agreements for consumers and businesses in the digital age. It aims to develop robust and universal standards so that individuals and businesses can work on data coming from trusted sources. As a result, they can connect, interact, and innovate at an unprecedented speed and scale.

2) How to confirm the "credential" is issued by accredited laboratories and medical staff in different regions?

The recognition of "credential" must be linked to the licensing system set by the official regulatory agencies in different regions (such as the Medical Council of Hong Kong). Therefore, Travel Pass adopts a more rigorous Legal Entity Identifier (LEI) in confirming the identity of the signing agency and ensure that it is a credible and authorized unit.

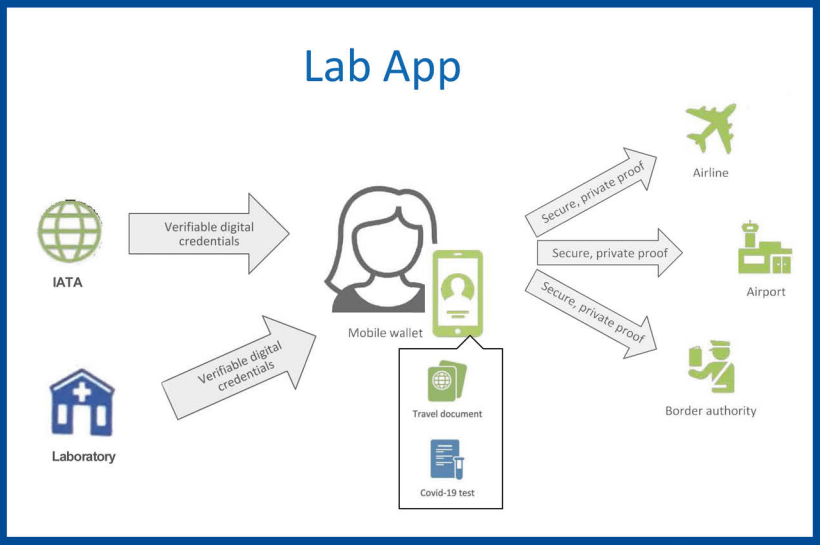
The LEI code is a coding system based on the ISO 17442 standard developed by the International Organization for Standardization, promoted by the establishment of the Financial Stability Board and many regulatory agencies around the world under the support of the Group of 20 (G20). It is equivalent to an international network credential of a company or institution, and is an internationally accepted subject identification code. As of May 2020, LEI has covered more than 1.6 million institutional legal persons in more than 200 countries, and is widely used across the globe in many fields. Hong Kong is also one of the world's participating LEIs Area.

The distributed digital identity of the blockchain and the international standard of LEI encoding connect the new generation of digital world with the physical world, and promote the development of the digitalized global economy.



善營商環境、支持多邊主義和全球化深入發展。特別是在疫情下，各國檢測或疫苗生產機構在身份確認上存在差異，採用國際認可的LEI編碼能對健康憑證資訊來源作統一確認。

可見，ToIP 結合LEI的方案能解決在疫情下跨境出行及貿易的規限和痛點。



推動在港採用電子健康憑證共用機制

聯盟、HKPKIF、APKIC及香港中華廠商聯合會與來自美國及加拿大的專家代表，分別於2021年1月12日和19日舉行國際研討會，深入討論如何善用香港本地數碼基礎建設的優勢。專家建議香港利用數碼身份技術，打造自己的數碼化健康憑證應用程式「e健行」，為本港防疫工作出一分力。

「e健行」是手機應用程式，能讓市民：

1. 接收檢測和疫苗接種證書並創建「數碼健康憑證」；
2. 驗證「數碼健康憑證」是否由可信單位簽發及是否仍然有效；
3. 在不洩漏敏感資訊的前提及得到當事人的授權下，向相關組織提供檢測或疫苗接種證書，以便出入公共場所或安排出行。

「e健行」可用於管理和驗證檢測或疫苗接種資訊，供政府、航空公司、實驗室和旅客之間安全使用。其設計理念是，全球病毒檢測機構和疫苗機構作為官方健康身份發行人，向個人簽發已驗證的數碼憑證，讓持有人憑著「隨身攜帶」的數碼健康憑證，在疫情出行時可以向各國海關和邊檢部門（驗證方）展示病毒檢測及疫苗接種紀錄。區塊鏈上不能刪改的功能完整紀錄了驗證資訊，可確保相關結果的可信度，同時提高個人數據的私隱保護。此舉有助於重新開放邊境時免除檢疫隔離措施。「e健行」更可與國際類似的IATA Travel Pass及Common Pass等相互對接，以便本地市民出行及外國旅客訪港。

On this basis, it is essential to improve the international recognition and trust of laboratories or testing institutions, to rigorously control the qualifications of virus testing institutions under the supervision of government departments, and to support international travel, which is conducive to further development to facilitate the business environment, support the in-depth development of multilateralism and globalization. Especially in the context of the pandemic, there are differences in the identification of testing or vaccine production institutions in various countries and the use of a universal LEI code can unify the identification on the source of health certificate information.

It can be seen that ToIP in combination with LEI's solution can overcome the restrictions and pain points of cross-border travel and trade under the pandemic.

Promote the Adoption of an Electronic Health Certificate Sharing Mechanism in Hong Kong

SCC, HKPKIF, APKIC, Chinese Manufacturers' Association of Hong Kong and network trust experts and privacy experts from the United States and Canada held international seminars on 12 and 19 January, 2021 respectively to have in-depth discussions. Referring to the operation on Travel Pass, experts suggested that the advantages of local digital infrastructure and digital identity technology should be used to unite and create Hong Kong's own "eHealthPass" to fight local pandemic.

eHealthPass, a mobile phone application will allow citizens to:

1. Receive testing and vaccination certificates and create a credential;
2. Verify whether the credential is issued by a trusted organization and whether it is still valid;
3. Share the test or vaccination certificate with relevant organizations and be recognized for entering and exiting public places or arranging travel under the requirement of not divulging sensitive information and being authorized by the holder.

eHealthPass will be used to manage and verify the safe use of necessary testing or vaccine information among governments, airlines, laboratories, and passengers. Its design concept allows global virus testing agencies and vaccine agencies to act as official health identity issuers to issue verified digital certificates to individuals, allowing holders to "carry" credential to enter other countries during the pandemic, and show it to customs and border inspection departments (verifiers). The public trusted ledger on the blockchain records complete verification of information, which can effectively ensure the credibility of related results and improve the protection of personal data. This will help reopen the border without taking quarantine measures. eHealthPass can also be connected with similar international apps such as IATA Travel Pass and Common Pass to facilitate local citizens to travel and foreign tourists to visit Hong Kong.

The eHealthPass can confirm one's virus infection status and easily self-certify health status through a smart phone (QR code), which greatly optimizes the process of sharing health data between citizens and related organizations, and makes health data more reliable and credible. It suits for some businesses that need to provide services at a fixed place of business, such as beauty salons and restaurants. The plan is as follows:

「e健行」可以將病毒檢測以可視化的方式，通過手機（二維碼）方便地自證健康狀況，大大優化了市民與相關機構共用健康數據的流程，並使得健康數據更加可靠、可信，特別適合需要在固定營業場所，例如美容院和食肆等提供服務的企業。方案如下：

1. 市民下載「e健行」，登錄並驗證身份。
2. 應用程式提供可信的病毒檢測機構清單供市民選擇；檢測機構都會擁有LEI編碼，確保其為香港醫務委員會認可的檢測機構。
3. 市民去認可機構進行病毒檢測、接種疫苗等活動；選擇通過連接應用程式來獲取相關健康資料。
4. 當有健康數據可用時，個人可以掃描二維碼，以添加如病毒檢測、疫苗接種紀錄等新資訊。
5. 市民向相關機構出示「數碼健康憑證」，按需要分享個人的醫療數據。
6. 相關機構驗證「數碼健康憑證」，以確認真實性和有效性。

APKIC副會長季瑞華先生指出，「e健行」採用的核心技術包括了ToIP和區塊鏈技術。通過區塊鏈驅動的分散式數碼身份及LEI編碼的國際標準，在設計上能給予用戶更多自主權和選擇權，既可靠又能保障用戶私隱等敏感資料的安全性。

掃描過二維碼後，所有的健康憑證亦只儲存在使用者的手機內，有需要時，例如聚會，可以主動地與人分享病毒檢測證明，過程中不涉及個人資料互換，只瞭解對方在過去一段時間內是否接受過檢驗並呈陰性反應。此外，程式會定期或在有需

1. Citizens download the eHealthPass, log in and verify their identity.
2. The app provides a list of credible virus testing agencies for the public to choose; testing agencies will have LEI codes to ensure that they are approved by the Medical Council of Hong Kong.
3. Citizens go to authorized institutions for virus testing, vaccination and other activities; choose to connect to the app to obtain relevant health information.
4. When health data is available, individuals can scan the QR code to add new information such as virus testing, vaccination records, etc.
5. Citizens show the credential to relevant agencies to selectively share personal medical data.
6. Relevant agencies verify the credential to confirm the authenticity and validity.

The vice president of APKIC, Mr. William Gee pointed out that the core technologies adopted by eHealthPass, including ToIP and blockchain technology, are designed to give users more autonomy in the use of distributed digital identities driven by blockchain and international standards for LEI codes. The right to choose, meet the credibility requirements and protect the sensitive information such as user's private credential data are within the user's control.

After the user scans the QR code, all health certificates are downloaded only to the user's mobile phone. When needed by a third party, the virus test certificate can be presented. The process does not involve the exchange of personal data, but only requires knowing the user's test history, such as whether the user has been tested recently with a negative response. The app can be downloaded regularly or when required to check against the visit records of confirmed patients as disseminated by the Centre for Health Protection. If one of the contacts of the user is later found to be infected, the system will issue a notification so that people who have been in contact with infected citizens can take necessary actions.

擴展大灣區一站式數碼化應用平台

Expansion of the One-stop Digital Application Platform in the Greater Bay Area

過往粵港兩地政府認證機構的粵港互認證書的安排，為粵港兩地通行互動可行性奠定了基礎。現在，透過接入「大灣區區塊鏈可信認證服務試點平台」，使「e健行」能進一步擴展為一個銜接內地與香港居民的一站式數碼化應用平台，除了實現健康資訊相互驗證以外，亦可以成為日後數碼化應用的平台，為兩地的居民提供快捷方便的政務和社會服務，利用網上認證身份等功能，提升香港居民在內地生活的便利度。

In the past, Guangdong and Hong Kong have had a mutual recognition by government certification agencies for the cross border interaction. Through the Greater Bay Area Blockchain Trusted Certification Service Pilot Platform, eHealthPass can be further expanded to a one-stop digital application platform connecting residents from both sides. In addition to realizing mutual verification of health information, it can also become the basis of future digital application platforms, providing fast and convenient access between the two places. It enables users to access government services and social services such as online identity authentication which enhance the convenience of Hong Kong residents living in the Mainland.

要時下載衞生防護中心發布的確診者出行紀錄，然後與存在個人手機內的紀錄進行比對，若其中一位接觸人士其後發現受感染，系統會向曾與該人士接觸過的市民發出通知，以便採取相應行動。

「e健行」在保障個人私隱的同時，為因疫情關閉數月的企業能順利重啟提供有利環境，舒緩經營壓力之餘，民眾也能安心進入公共營業場所，從而促進消費。

目前聯盟和HKPKIF正在積極聯絡各大商會作深入介紹，希望推動較受影響的美容業及餐飲業等先行先試，並逐步推廣至其他領域。隨著病毒檢測和疫苗接種的常規化，在保障私隱和資訊安全的前提下，跨地區共用檢測和疫苗接種相關資訊十分必要。而「e健行」與Travel Pass的對接，更可以促進健康資訊在國際間共用，協助香港重啟國際出行。

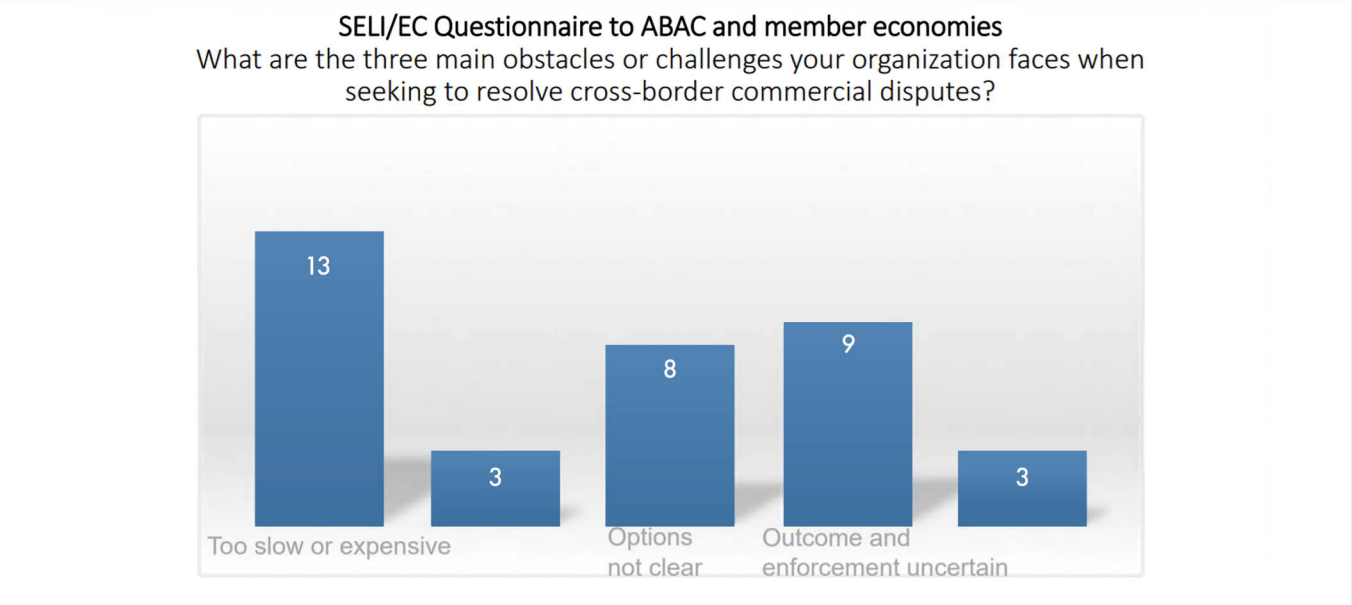
我們期望「e健行」在疫情下，以可驗證的數碼證書及ToIP的標準來管理數據及處理身份驗證，以及利用LEI來建立檢測和相關醫療機構的數碼身份驗證生態系統，一方面幫助政府以資訊科技優化抗疫工作，同時促進本地商業活動正常化，為將來國際出行應用積累實際經驗。

While protecting personal privacy, eHealthPass provides an assuring way for the smooth restart of companies that have been closed for several months due to the pandemic, relieves operating pressure, and allows people to enter public business places with peace of mind, thereby increases the willingness to spend.

Currently, SCC and HKPKIF are actively contacting the major chambers of commerce for in-depth introductions, hoping to promote to the more affected beauty and catering industry for pilot trials, and gradually extend it to other fields. With the routinization of virus testing and vaccination, under the premise of ensuring privacy and information security, it is a necessary measure to realize the cross-regional sharing of information related to testing and vaccination. The docking of eHealthPass and Travel Pass can promote the sharing of health information internationally and help Hong Kong restart international travel.

We expect eHealthPass to use verifiable digital certificates and ToIP standards to manage data and process identity verification under the pandemic, and use LEI to establish a digital identity verification ecosystem for testing and relating results from various medical institutions. On the one hand, it will help the government with information to formulate measures to optimize the anti-epidemic work. On the other hand, it can promote the recovery of local commercial activities and accumulate practical experience for future international travel applications.

網上平台解決本地及跨境爭議服務
Online Dispute Resolution Platform for Local and Cross-border Dispute Resolution Services



智慧城市聯盟名譽法律顧問及一邦國際網上仲調中心（eBRAM）副主席陳曉峰律師指出，聯合國永續發展目標（SDGs）第16條以加強法治為目標，而和平、穩定、人權和建基於法治的有效管治乃實現可持續發展的重要基礎。

eBRAM於2018年根據香港法律成立，是香港律師會、香港大律師公會及亞洲國際法律研究院有限公司成立的一家獨立及非牟利機構。eBRAM是迄今為止亞太地區最著名的法律科技公司之一，目標是提升香港作為法律科技中心及樞紐、亞太區國際法律及解決爭議服務中心地位；同時，它促進香港仲裁及調解服務向高端高增值方向發展，利用創新科技開發網上爭議解決（ODR）平台，滿足正在迅速增長的國際、本地及跨境爭議解決服務需求，從而增強國際貿易的法治精神及可持續發展，更高效解決跨境爭議，促進貿易。

早於2015年，亞太經濟合作會議（APEC）經濟委員會（EC）成立了加強經濟法律基礎設施（SELI）委員會。EC通過促進APEC內部的結構改革，消除貿易和投資障礙；SELI旨在為B2B交易中的中小微型企業開發合作ODR框架，並使用現代技術解決爭端和電子合約管理。

SELI及EC曾對APEC企業諮詢委員會（ABAC）和成員經濟體進行問卷調查，發現機構在尋求解決跨境商業糾紛時的三大主要挑戰，包括過於緩慢的流程和昂貴的費用、

Our Smart City Consortium Honorary Legal Advisor Mr. Nick Chan, MH, who concurrently serves as Vice Chairman of eBRAM International Online Dispute Resolution Centre (eBRAM), mentioned that United Nation's Goal 16 of the Sustainable Development Goals (SDGs) aims to strengthen the rule of law. Peace, stability, human rights and effective governance based on the rule of law are the essence to achieve sustainable development.

eBRAM was established under the laws of Hong Kong in 2018 as an independent and not-for-profit organization by The Law Society of Hong Kong, Hong Kong Bar Association and Asian Academy of International Law Limited. It is by far one of the most well-known LawTech company in Asia Pacific. The goal of the organization is to improve Hong Kong's reputation as a legal technology center and hub, the status as an Asia-Pacific international dispute resolution service center. It also supports the development of Hong Kong's arbitration and mediation services towards high-end and high value-added, and uses innovative technology to develop online dispute resolution (ODR) platforms to meet the rapidly growing international demand for local and cross-border dispute resolution services, which strengthen the rule of law and sustainable development of international trade, resolve cross-border disputes more efficiently, and promote trade.

As early as 2015, the Economic Committee (EC) of the Asia-Pacific Economic Cooperation (APEC) established the Committee on Strengthening Economic Legal Infrastructure (SELI). The EC promotes structural reforms within APEC to remove barriers to trade and investment while SELI aims to develop a cooperative ODR framework for micro, small and medium-sized enterprises (MSMEs) in B2B transactions, to use modern technology to resolve disputes and to manage electronic agreement.

選擇不清晰，以及模糊的結果和不確定如何確切執行調解或仲裁等。

2019冠狀病毒病疫情的出現，讓企業和市民陷入各種爭議的機會也大大增加，影響商業社會的運作。同時，傳統以會面形式的爭議解決方法亦難以於疫情期間進行。

陳曉峰指出，要處理因疫情而出現的爭議，以節省成本和時間的方式透過電子化ODR平台處理爭議對於企業繼續進行交易和解決爭議變得尤其重要。該平台提供的服務包括網上調解、網上仲裁，透過協商、調解和仲裁三個階段為各方解決爭議。

ODR平台採用包括區塊鏈、人工智慧和雲端等最新技術，透過視頻會議和個案管理系統，為爭議的當事人提供一個便利、高度保密及安全的智慧網上爭議解決平台；此外，先進的網上簽署技術可透過其安全及私有的網上平台，讓多個簽署方在不同地點同時簽署同一檔案。平台亦可供輕鬆查閱整個程式及已簽檔案，而所有資料也會儲存於香港的雲端伺服器，備受健全的香港法律保護。

政府在「防疫抗疫基金」下設立的「2019冠狀病毒病網上爭議解決計劃」於2020年6月29日展開。在該計劃下，eBRAM獲委任為中小微型企業和公眾提供快捷網上爭議解決服務。於2019冠狀病毒病網上爭議解決計劃下，爭議須符合下列情況才獲該計劃受理（除了爭議解決服務之外，還為更廣泛的受眾提供服務）：

（i） 爭議與2019冠狀病毒病有關；
（ii） 所涉申索額不多於50萬元；以及
（iii）個案的當事人其中一方須為香港居民或公司。

當事人只須各付200港元登記費，而調解員及仲裁員的費用則由政府支付，以幫助有需要的各界人士。

eBRAM希望為香港、大灣區及一帶一路沿線地區的用戶提供優質及廉宜的網上爭議解決服務，充份利用創新科技的省時及具成本效益的優點，促進香港成為亞太區法律科技中心及樞紐。有效率又容易使用，必定很快成為不同企業或個人在商業貿易、協商及網上爭議解決方面不可或缺的平台。

According to the SELI and EC questionnaires for APEC Business Advisory Council (ABAC) and member economies, the three main obstacles or challenges faced by organizations in seeking to resolve cross-border commercial disputes includes facing sluggish and pricy, unclear choices and uncertain outcome and execution of any mediation or arbitration.

Meanwhile, the outbreak of COVID-19 has greatly increased the possibilities for enterprises and citizens to encounter various disputes, affecting the operation of the society. In addition, traditional dispute resolution mechanism requiring face-to-face meetings are difficult to arrange during the pandemic.

Mr. Chan pointed out that under the COVID-19 pandemic, an electronic ODR platform to deal with disputes online in a cost and time effective manner has become particularly important for businesses to continue making deals and resolving disputes. The platform services include online mediation, online arbitration, and resolving disputes for all parties through the three stages of negotiation, mediation, and arbitration.

Leveraging the latest technologies including blockchain, artificial intelligence and the cloud, the ODR platform can provide a convenient, confidential and secure intelligent online dispute resolution platform for parties through its video-conferencing and case management system. Advanced online signing technology can also be used through its secure and private online platform. Multiple signatories can sign the same file at different locations at the same time. The platform can easily access the entire program and signed files, and all data will also be stored in a cloud server in Hong Kong, which is protected by robust Hong Kong law.

The COVID-19 Online Dispute Resolution Scheme established by the Hong Kong Government under the Anti-epidemic Fund was launched on 29 June 2020. Under this scheme, eBRAM was appointed to provide fast online dispute resolution services for MSMEs and the public. Under the COVID-19 Online Dispute Resolution Scheme, eBRAM helps resolve the following disputes (on top of its usual disputes resolution work serving a broader audience):

(i) resulting from the COVID-19 pandemic;
(ii) in a claim of no more than HK$500,000; and
(iii) where either one of the parties (claimant or respondent) must be a Hong Kong resident or company.

Each party will only be required to pay HK$200 registration fee. The mediators and arbitrators are paid by the Government to help people from all walks of life in need.

eBRAM hopes to provide high-quality and cost-effective online dispute resolution services for users in Hong Kong, the Greater Bay Area and The Belt and Road Initiative regions, thereby helping Hong Kong to become a legal technology center and hub in the Asia-Pacific region with the use of innovation and technology which is both time-saving and cost-effective. Effective and easy to use as they are, it will soon become an indispensable platform for different companies and individuals in commercial trade, negotiation and online dispute resolution.

四招推動創科數碼基建成關鍵

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Data Infrastructure is Fundamental to I&T Development

Originally posted on ejinsight on 8th March 2021

就二月公布的《財政預算案》的創科部分，我認為可以着眼幾個方面：

1）人才培訓，裝備未來

「奇趣IT識多啲」計劃向每所資助小學提供40萬，令全港500多間資助小學的同學可以從小認識資訊科技世界及培養對IT的興趣；而「創科實習計劃」恒常化，資助本地理科大學生體驗創科工作。這些項目有助香港提升本地的IT素養，也為智慧城市儲備更多人才，一旦經濟回到正軌，我們便可以把握機會。

2）電子政府，便民營商

政府表格和牌照申請會全面電子化，大部分政府繳費可電子支付；而研發中的企業版「智方便」，讓企業可作電子身份認證，便利電子商務，這是方便市民生活和營商的重要舉措。

不過，電子政府雖好，但根據統計處去年公布的數字，逾49萬名、近35%的65歲以上長者沒有智能手機，因此在推動電子政府以至電子消費券時，應該考慮如何惠及這一群長者。

資助創科　　須設明確績效指標

3）投資創科，促進產業化

財政司也加大對初創的融資支援，包括向科技園、數碼港注資共5.5億；也會在未來兩年每年注資47.5億，以支持多個研發實驗室未來三年的工作。我期望這些研發計劃能促進研究成果產業化和商品化。

同時，如何量度成效也非常關鍵。兩年前我已指出：政府投入了過千億公帑，在大中小學培訓人才、投資科研、促進初創，平均每個香港市民付出萬多元，究竟回報若干？創造了多少個職位？與其他地方相比又如何？政府應為這些投資設立明確的關鍵績效指標（KPI），以量度成效，也作為當局往後制定措施的指引。

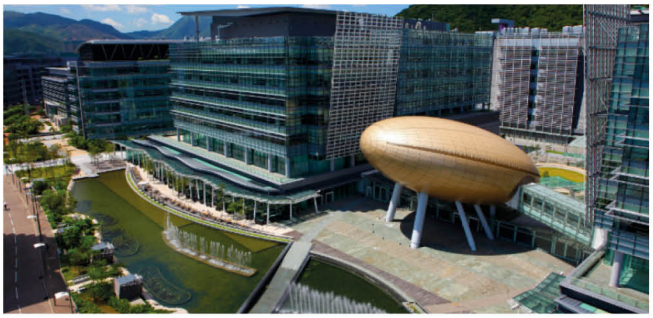
On the latest Budget, I would like to offer my view from the following aspects of the innovation and technology (I&T):

1) Nurturing I&T talent

The programs including "Knowing More About IT" for primary schools to enhance students' interests and knowledge in I&T, as well as regularising the scheme which subsidises local university students studying science and technology to enrol in I&T related internships can surely help to upgrade Hong Kong young people's IT competency and to nurture more talents for our smart city. Once the economy is back on track, we can seize the opportunity.

2) e-Government for elderly

All government forms and licence applications will be submitted electronically, and e-payment will be available for paying most government bills and licences. The business version of the "iAM Smart" digital platform for authentication of the identity of enterprises is expected to be introduced later. These measures can facilitate individual's lives and running business.



4）數碼基建，智慧之本

香港在新冠肺炎疫情下展露了積累多時的問題，例如那些沒有業主立案法團、沒有任何形式的居民組織及沒有聘用物業管理公司的大廈、俗稱「三無大廈」的污水渠管便引起廣泛關注，預算案因此預留10億資助維修工程。

但2019年的資料顯示，全港「三無大廈」超過5,300幢，優先次序如何安排？如果平均分配，每幢大廈資助僅有18萬，金額是否足夠成疑。

整合政府數據 提升管治水平

假使政府能夠把內部數據整合，例如屋宇署（樓宇狀況和年資、建築物內渠管紀錄）、渠務署（公共地方渠管紀錄）和政府統計處（劏房人口調查），結合業主的資料，便可針對性地作出改善措施。

整合政府內部數據也有助抗疫，綜合每幢大廈人口特徵，包括稅務局（住址、電話、國籍、配偶、同住父母、子女）、教育局（學童年齡、住址、父母姓名、國籍）、醫管局（住址、年齡、電話）等資料，令當局的突擊封區行動更精準、資源調動更有效率。

要便利部門之間的數據整合互通，便需一個數碼基建：空間數據共享平台（CSDI）。這個平台預期2022年才能啟用，如果能夠加快步伐，將有助提升管治水平。

我希望政府能夠繼續切實推動創科，也致力建設數據基建，令年輕一代得享更優質的就業機會之餘，也令數據發揮真正的價值，促進管治效率，成就智慧城市。

Despite the e-government is convenient to most people, we should not ignore those without access to internet. According to figures released by the Census and Statistics Department last year, more than 490,000 or nearly 35 per cent of the elderly aged 65 and over do not have a smartphone. Therefore, in promoting e-government and even electronic consumption vouchers, we have to consider how to benefit this large group of elderly people.

3) KPI for I&T investment

The Financial Secretary has also increased financial support for startups, including a total of $550 million into the Science and Technology Parks and Cyberports; $4.75 billion annually over the next two years to support the work of multiple research and development laboratories. I expect that these programs will progress to the stage of industrialization and commercialization of research eventually.

At the same time, it is essential for the government to develop key performance index (KPI) to measure the effectiveness of the investment in I&T which is well over $100 billion so far. For example, what the return of investment is and will be, how many new jobs can be created, our performance is better or at par with other places.

4) Data infrastructure key to smart city

Several long-term problems have been exposed during the Covid-19 epidemic, one of them is leaking sewer pipes in “three-nil” buildings, that is, buildings without owners' corporations, residents organizations, nor management companies which has aroused widespread concern. The Budget has therefore set aside $1 billion for maintenance works. However, according to the government record, there are more than 5,300 "three-nil buildings" in Hong Kong, which one has higher priority? If the funding is evenly allocated which is merely $180,000 each, the amount for each building is obviously inadequate.

If the government can link up its internal data, for example, from Building Department (building conditions and age, record of drainage pipes within buildings), Drainage Services Department (public drains), and Census and Statistics Department (resident details of subdivided flats) together with that on landlords, we can handle the drainage pipes issues better.

Linking up data can also be useful for epidemic containment. If we can consolidate data from the Education Bureau (age, address, name and nationality of parents); Hospital Authority (address, age, telephone); Census and Statistics Department (address, telephone no., nationality, spouse, children), the ambush lockdown operation will certainly be more efficient, and the staffing and resource mobilization more precise.

To facilitate the integration of data between departments, a shared digital platform, a common spatial data infrastructure (CSDI), is required. The platform is not expected to be launched until 2022, and if accelerated, it can help to raise the level of governance.

I hope that the Government can continue to give practical impetus to the application of science and technology, and will also strive to build a data infrastructure. By doing so, the younger generation can enjoy better employment opportunities, and the data can play a key role in promoting governance efficiency and achieving smart cities.

葛珮帆議員
Hon. Elizabeth QUAT, BBS, JP

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

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

本港須突破電子支付發展樽頸

Hong Kong must break through the bottleneck of e-payment development

現時世界已進入科技主導的年代，各國央行紛紛進行數碼貨幣研發與測試，惟本港在推動電子支付發展仍姍姍來遲，依靠八達通「食老本」，成為金融科技發展的樽頸。

政府於2017年推出首份《香港智慧城市藍圖》，大舉推展電子支付領域。金融管理局於2019年開始讓公眾以銀行流動應用程式及電子錢包繳交稅項、差餉及水費。但按政府統計，2019至2020年度，接受電子付款的政府服務中，電子繳費佔全部個案約一成，而社區上手機支付的使用率亦不高。問題固然與港人使用八達通卡、信用卡的習慣已根深蒂固，以及消費者對私隱保障和支付安全存疑有關，但筆者認為政府政策一直對八達通卡傾斜、未有做好無現金支付的配套工作，及沒有積極推動統一讀卡器與二維碼亦是主要原因。

為降低傳播新冠病毒的風險，政府去年推行「公眾街市推廣非接觸式付款資助計劃」，鼓勵街市攤檔安裝非接觸式電子支付系統。惟政府並未充分理解街市的營運模式，

Today, in the era dominated by technological advancements, central banks across the globe have conducted research, development and tests on digital currency, while Hong Kong has been lagging in pushing the development of e-payments. Local financial and technological developments have been hindered, partly due to the widespread and reliance on an old technology – the Octopus card.

The Hong Kong Government released the first Hong Kong Smart City Blueprint in 2017 to push the popularity of e-payments. Hong Kong Monetary Authority (HKMA) began to allow the public to pay taxes, rates and water bills through mobile banking apps and e-wallets in 2019. However, according to the government data, from 2019 to 2020, electronic bill payments are accounted for about 10% of all cases among the government services that accept electronic payments, while the usage of mobile payment in the community is not good either. Consumers' accustomed to using Octopus cards and credit cards may contribute to the low transactions of mobile payments in Hong Kong. Privacy and payments security are also raising more concerns than ever before. Nevertheless, I believe that the government policies' inclination towards Octopus cards and failing to actively promote unified e-payment readers and QR codes are the main obstacles of the popularity of e-payments.

To prevent the spreading of COVID-19, the Government launched the "Disbursement of subsidies under subsidy scheme for promotion of contactless payment in public markets" program last year to encourage installation of contactless payment systems in public market stalls. The program ended up with only 30% of the stalls installing the terminals, possibly a result from the government's lack of promotion, their inability to grasp the mode of business transactions between shoppers and shop owners in a typical local market, and the high maintenance and installation costs of the hardware. I believe that the Government should increase incentives and consider subsidizing administrative expenses according to the business types and conditions of the stalls.

又未加以教育推廣，加上電子支付終端機的安裝和維修成本高昂，對街市檔販支援配套不足，最終只有約三成檔販安裝。筆者認為政府應提高誘因，並考慮按檔戶的生意狀況和工種補貼行政費用。

除了街市檔戶，中小微企商戶電子支付使用量亦低，大部分中小微企業仍舊依賴信用卡交易。對比信用卡過數需時數以月計，亦需商戶繳付保證金，電子支付具到賬功能，由P+2到即時過數，可大大減低中小微企的營運成本及現金流壓力，資金「回籠」更快，業務發展及周轉彈性更大。因此，政府加強推廣電子支付的應用，能有效提升本港中小企的競爭力。

現時本港流動支付技術分別是支付卡公司以傳統基礎開發出來的系統，以及互聯網支付系統加入手機移動端兩種。由於各機構提供不同的讀卡機，欠缺統一交易平台，商販要維持多個支付系統的運作及把各讀卡器放在收銀台上有一定的難度，顧客也因使用方法不同做成混亂而減低使用的意欲。中國內地、新加坡、歐美等國家或地區早已設立電子支付統一讀卡器（UnifiedPOS），儘管本港龍運巴士公司於去年五月採用支援信用卡及電子錢包的電子支付，九巴亦於近期推出試行電子支付系統「e度嘟」，但旁邊仍設有獨立的八達通機，可見統一讀卡器仍未於本港普及。

而在本港停留在是否推動統一讀卡器之際，內地商戶已廣泛應用二維碼，檔戶把二維碼放於當眼處，消費者不論使用那一種電子錢包，皆可掃描付錢，收款語音播報功能亦會作出提示，交易過程非常方便。因此，香港政府應參考內地兩者兼容的模式，同時推動統一讀卡器及二維碼，於金融科技發展上急起直追。

創新科技包括電子支付的廣泛應用，對社會發展帶來莫大的推動力，背靠大灣區的香港必須急起直追。若政府故步自封，只會窒礙香港的金融科技發展。

The low circulation of e-payments stretches from public market stalls to small and medium-sized enterprises. Compared to credit cards which require deposits from the merchants and significant lag time for actual payment receive, e-payment allows instant transfers or within P+2, enabling greater flexibility for firms with lower operation capital and smoother cash flow. Therefore, the Government's efforts to promote the application of e-payment can effectively enhance the competitiveness of Hong Kong's SMEs.

The development of mobile payment systems at the moment is split between traditional methods and internet based with mobile capability. Lacking a unified transaction platform, customers and vendors are confused by the multiple readers and systems from various institutes, reducing the willingness to use. Other countries and regions, including Mainland China, Singapore, Europe and the United States, have long established unified e-payment readers (UnifiedPOS). Despite that the Long Win Bus Company Limited (LWB) has adopted e-payment that supports credit cards and electronic wallets since last May, and the Kowloon Motor Bus Company Limited (KMB) recently testing its e-payment system, the Octopus machine are still operating separately, showing that unified transaction platform is still playing an insignificant role in Hong Kong.

Mainland merchants have widely adopted QR codes, putting it in eye-catching spots, when Hong Kong is still struggling to promote unified card readers. Regardless of the types of electronic wallet used, they can scan to pay and receive with audio notifications. The Government should catch up on financial technologies while pushing unified e-payment readers and codes that are compatible with Mainland China's.

Innovative technologies, like the wide adoption of e-payments, have provided a tremendous push to social development with which Hong Kong should catch up. A complacent government will only hinder the development of financial technology.

Applying Robots from Industrial Automation to Smart City

由工業自動化領域走進智慧城市的機械人

OMRON創辦人立石一真先生認為：「人應該專注做只有人才能做到的事情，機器能做的事情應該全部交給機器去做」。OMRON一直致力發展工業自動化系統，並不斷努力對業界和社會作出貢獻。近年隨著機械人在工業界廣泛應用，業界已掌握到不少先進技術並應用在生產上。這些技術不但大大提高了生產力，還不斷為社會創造價值。

同時，這些技術也有無限潛力轉化並應用在智慧城市上。香港地少人多、空間狹窄，在應用上需要靈活變通，使用不同範疇和領域的技術，從而解決社會的問題和需要。

香港作為一個國際城市，應為未來技術的先驅，一個多功能並能提供24小時服務的機械人正是這個城市所需。在管理上，能遙距管理、具備自我運作及同時操控多台機械人的管理系統（FMS），對機械人團隊而言，是一個不可或缺的重要部分。

我們深信一個良好的機械人必須具備以下條件，才能有效地發揮作用：

Mr. Kazuma Tateisi, the founder of OMRON, believes that "humans should enjoy the creative parts; machines should take care of routine work." OMRON has committed to developing innovative automation technologies and continuously strives to make contributions to society. The growing use of intelligent robots across all fields has greatly enhanced productivity and created values for society.

The new technologies have unlimited potential to drive the evolution of a smart city. Hong Kong, a dynamic small city, has a large population but limited land supply. The adoption of new technology needs to be appropriate, and capable to be applied in different fields and industries, thereby solving social challenges and demands.

Hong Kong, as an international city, should demonstrate itself as a pioneer of future technologies. Only multi-functional robots serving on a 24-hour basis can fulfil the needs of the ever-bright city. Robots equipped with a self-operating system and a fleet management system (FMS) enabling users to manage different robots simultaneously will maximize cost-efficiency and benefits of the robot team.

We believe that a good intelligence robot must be equipped with the followings to accomplish its role:

傳感與控制+思考
Sensing & Control + Think

Autonomous mobile robot (AMR)	+	Sensors	+	AI program	=	Application function
自主移動機械人AMR	+	傳感器	+	AI程式	=	應用功能

社會應用

人口老化

人口老化是香港未來的重要議題之一。一些需要依賴勞動力的工作，因為人口老化問題而人手短缺，這無疑對本港的社會經濟發展構成很大壓力。針對一些需要大量人手的服務性行業，例如護老服務、夜間工作和厭惡性工作等，發展智慧型機械人是一個有效的解決方案。

消毒

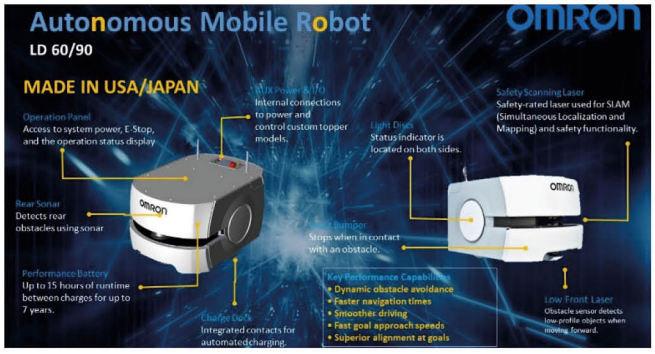
適逢2020年疫情的爆發，消毒已變成了一種常態。但人手消毒過程中，消毒人員很有可能被二次感染。OMRON為了對疫情作出貢獻，針對以上問題不斷尋找不同的合作夥伴，努力研發一個智慧型機械人，以減低感染和傳播的風險。

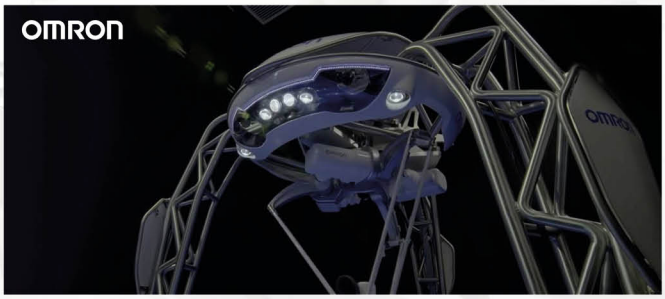
在應用上，機械人須攜帶消毒器進入每一個樓層進行消毒。對機械人作出準確的指令，程式開發和人工智能是一個不可或缺的關鍵，例如通過狹窄的通道、乘搭升降機、面對不同樓層複雜的地面結構，機械人都要獨立分析各種環境因素，從而決定消毒流程。此外，監控管理系統亦可讓使用者實時了解多台機械人的位置、行程路徑和設定工作要求，確保得到最大的效益。

物業管理/酒店管理

清潔、保安、維修、安全是物業管理很重要的環節。智慧型機械人可輕易到達每一個樓層和每一條走廊，沿途巡邏及同時為地面進行消毒清潔。透過傳感器和空氣監測系統，數據會自動傳送給機械人以作分析，並判斷是否需要作出不同的跟進。而一些安裝在機械人上的識別系統更可以幫助分析物業內的異常情況，例如可疑物品或有需要維修的設施等等。

OMRON 會繼續努力創新，為香港智慧城市發展作出貢獻。





Social Applications

Ageing population

The ageing population is one of the growing challenges that Hong Kong faces. The pace of population ageing will be more pronounced in the future. The declining labour force for manual labour jobs will undoubtedly pose pressure on the economy. The development of intelligent robots is an effective solution to serve its ageing population, such as offering manpower for elderly and nursing service, in night work as well as offensive works and industries.

Disinfection

Due to the global outbreak of Covid-19 last year, disinfection has become a norm to achieve certain hygiene standards. However, there is a risk of developing secondary infections during the process of manual disinfection. OMRON continues to work with partners on research and development, hoping to deploy a technology that contributes at the time of pandemic. A fully autonomous robot can be a safe and effective way to face the challenge.

The robot is equipped with a sterilizer to carry out disinfection processes to every floor. The indispensable keys to delivering accurate instructions without human supervision are program development and artificial intelligence, for example, in passing through narrow passages and elevators, the robot can analyze complex ground conditions and the environmental factors of each floor to determine its disinfection process. Besides, the built-in monitoring and management system allows users to recognize multiple robots' location, travel paths and work requirements in real-time, in order to maximize efficiency.

Property /Hotel Management

Hygiene, security, maintenance and safety are essential elements in property management. The intelligent robot is capable of carrying out disinfection processes throughout each floor. Data will be collected through sensors and the air monitoring system and sent back to robots of which the intelligence will analyze these data and determine whether follow-up action is necessary. Besides, the robot can detect abnormal conditions, for example, suspicious objects or facilities that need maintenance with its built-in recognition system.

OMRON will continue to innovate and contribute to the development of Hong Kong's smart city.

Chinachem Group Embraces Digital Transformation
華懋集團開展數碼轉型

畢馬威中國於上年初發表《全球地產科技調查》報告，58%的受訪企業表示正實踐數碼策略，比2018年的52%為高；調查訪問了188家來自歐洲、美洲、亞洲和其他地區的房地產公司，其中95%的受訪企業表示他們有專人負責企業數碼轉型及創新方案。而本港房地產業界亦已洞悉這股大趨勢，紛紛啟動數碼轉型，運用科技發展業務，提升競爭力，為打造智慧城市作出貢獻。促進企業文化的變革對於成功推動數碼轉型至關重要，正因如此，華懋集團成立了數碼轉型部門，把核心業務流程數碼化，並促進使用房地產科技（PropTech）。該集團也在上年七月與智慧城市聯盟（聯盟）簽署諒解備忘錄，共同推動智慧城市發展，目前正籌劃首個IoT設備網絡安全標準。

今期《智城》邀請了華懋集團數碼轉型總監胡達明先生（Damien），就地產商如何落實數碼轉型以提升營運效率和加強競爭力作深入探討。作為數碼轉型及推動創新的領頭人，Damien亦身兼多個職務，包括聯盟PropTech委員會主席、香港科學園顧問、物流及供應鏈多元技術研發中心顧問。

有關華懋集團

自1960年，華懋集團一直是香港主要的地產商，除酒店業務和物業管理服務外，還包括用於投資及出售的住宅、工商和零售項目。該集團以三個「P」作為信念，即同時顧及對人（People）、繁榮（Prosperity）及環境（Planet）帶來的裨益，三者並重。

According to KPMG's Global PropTech Survey announced in early 2020, real estate companies are increasing their engagement with digital, with 58% stating they have a digital strategy in place, up from 52% in 2018. Out of a total of 188 companies from Europe, America, Asia and other regions participated in the survey, approximately 95% of them said they have plans to undergo a digital transformation. In response to this trend, Hong Kong's property developers have accelerated their digital transformation plans to improve their competitiveness while contributing to the building of smart cities. Fostering change in corporate culture is critical to the success of driving digital transformation, which is why Chinachem Group ("Chinachem") has created a digital transformation department to digitalise its core business processes and promote the use of property technology (PropTech). Chinachem also signed a Memorandum of Understanding (MoU) with the Smart City Consortium (SCC) in July 2020 to promote the development of smart cities and to sponsor the development of a set of cyber security standards for the deployment of IoT devices in smart buildings.

This issue of Smart Vision invited Mr. Damien Wu, Director of Digital Transformation, Chinachem Group to share their views on how developers embrace digital transformation which improves an organisation's operational efficiency and helps it move up the value chain. As an evangelist for innovation, Damien is also the Chairman of SCC's PropTech Committee, and an advisor for various organizations such as the Hong Kong Science and Technology Park (HKSTP) and the Logistics and Supply Chain MultiTech R&D Centre (LSCM).

About Chinachem Group

Since 1960, Chinachem Group has been a leading property developer in Hong Kong, with a portfolio covering residential, commercial, retail and industrial buildings for sales and

培養創新文化與變革思維

數碼轉型要成功，難以單靠一兩個部門成事，變革思維才是關鍵。因此，數碼轉型不只是科技上的創新，還需要員工思維的改革。集團要視改變為核心價值，員工也須擁抱創新，數碼轉型才會成功。

Damien負責制定和執行華懋集團的數碼轉型策略，以增強該集團業務和營運的表現，他還研究和物色能為公司帶來增長的新業務和收入來源。

例如為了鼓勵員工創新，數碼轉型部門與人力資源部合作，推出Innovation Ambassador 計劃，期望藉此帶動企業文化轉變。Damien坦言未加入集團前，也猶豫過一間擁有60年歷史的傳統企業，會否抗拒新的嘗試，但結果發現是過慮。

「香港人向來不抗拒創新，也樂於接受新挑戰，舉例說，疫情期間，我們成立了跨部門小組，一起研究如何用科技抗疫，由洗手液到人工智能體溫量度裝置，同事們都落力研究及討論；其中一間酒店更決定引入機械人提供房間送餐服務，甚至正在研究使用人工智能方式派送行李，這些都是新嘗試。」

investment, in addition to operating hotels and property management services. Chinachem actively seeks to make a positive contribution to the society through its adherence to the Triple Bottom Line, a commitment that its activities will benefit People, bring Prosperity to the community and preserve the Planet.

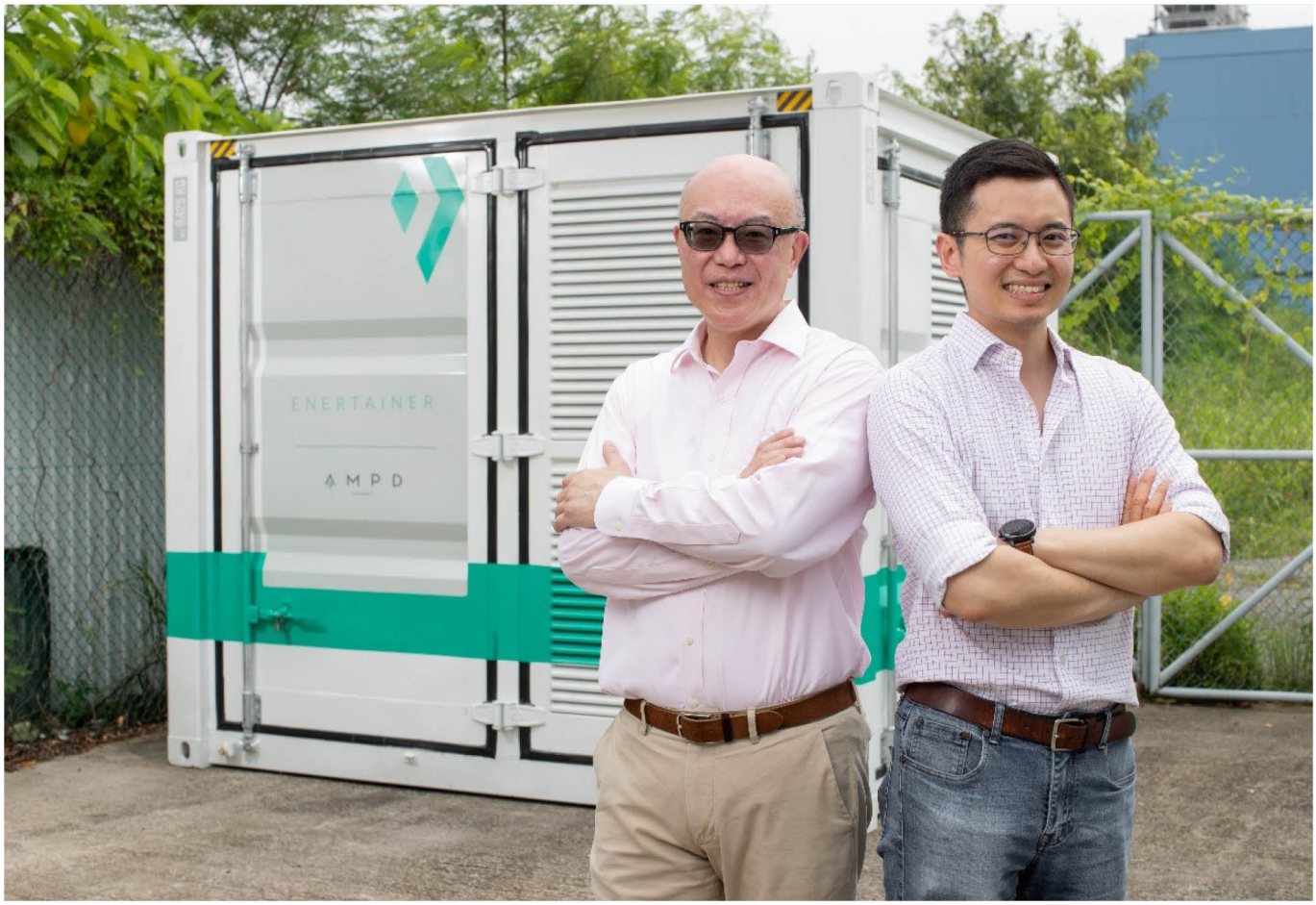
Fostering an innovative culture and mind-set

For digital transformation to be successful, it is difficult to rely on one or two departments alone; it requires cultural change as well. Hence, digital transformation is not confined to technological innovation; rather, it requires a radical mind-set shift among employees. It can only succeed when an organisation perceives change as a core value and, likewise, with employees embracing innovation.

Being responsible for the formulation and execution of Chinachem's digital transformation strategies and enhancement of the group's existing businesses and operations, Damien is also investigating and identifying new business models and revenue streams that may deliver future growth for the company.

For example, Damien has worked with Chinachem's human resources department to launch a program known as Innovation Ambassador in order to encourage employees to innovate and drive change in corporate culture. He confessed that before joining the Group, he thought that digital transformation might be difficult in a traditional organisation like Chinachem, which has a long-running history of success. It turns out his worries were unfounded.

"Hongkongers are never afraid of innovation. For instance, during the pandemic last year, we set up an inter-departmental task force to fight the COVID-19 using technology. From hand sanitizer to thermometers, the task force's members were immersed in up-to-the-moment research and discussions," said Damien. "One of



搜尋合適的商業方案

除了在內部運作加速數碼轉型，如財務及人力資源部門相繼啟用企業資源規劃軟件SAP，華懋集團也銳意成為PropTech應用的行業先驅，並成為香港首家發展商在單一項目同時應用建築資訊模型（BIM）、Aconex及Novade系統，此舉有助推動建築業數碼化。此外，該集團亦致力促進本地初創生態圈，因此籌辦了多個加速器活動，鼓勵初創開發尖端解決方案，協助行業應對挑戰，滿足房地產市場的多樣化需求。

談及未來發展，Damien指公司將於稍後啟動SAP 的第二期工程，引入文件管理和工作流程管理系統，以及為現有的租務系統升級，以進一步提升工作效率。

與初創企業共同成長

Damien透露，該集團亦將積極聯絡本地及海外創科的不同持份者，讓他們知道華懋渴求及歡迎創新。例如該集團與粒子創投加速器（ParticleX）及香港科技園聯合舉辦了「粒子創投加速器房地產科技初創與企業共贏計劃2020」，讓入選的初創企業可以得到所需資金以落實方案，積累經驗，促進成長。透過不同項目，建立起一個網絡，令相關初創主動尋求合作；另一方面，也聯絡本地創投基金，物色合適及具潛力的初創項目，與他們一起「共投」（co-invest），讓整個初創生態圈知道華懋銳意創新的取向，一起開拓更多可能。

our hotels decided to use robots for room service. We even studied the feasibility of using AI-enabled robotics to transport luggage to different rooms. All these were new approaches for us."

Finding the right business solution

Running on the fast-track to digitalisation, Chinachem and its finance and human resources departments are using System Applications and Products (SAP). Chinachem is also the first Hong Kong company to use Building Information Modelling (BIM), Aconex and Novade together to help digitalise the construction industry. At the same time, Chinachem actively supports the local startup ecosystem. It works with accelerators to encourage startups to create innovative solutions, thereby enabling the industry to address specific challenges and meet a variety of new demands.

With regards to future development, Damien explained that Chinachem would begin the second phase of deployment of SAP to centralise and streamline the Group's business processes and information flow and upgrade its existing leasing management system.

Grow with startups

Chinachem will also connect with local and overseas stakeholders to let them know that the Group is eager to embrace innovation. For instance, Chinachem recently co-organized a PropTech Global Challenge 2020 in conjunction with Particle X and HKSTP, where selected startups will have the opportunity to receive investment for work with Chinachem & Particle X and be incubated at HKSTP. "We hope to make us part of the larger tech ecosystem so that startups will approach us. We also look for opportunities to co-invest in startups with venture capital funds. In this way, the entire startup ecosystem is aware of our commitment to digital transformation and by doing this, we will create a better future," said Damien.

該集團應用於安達臣道地盤的淨能櫃電池系統，正是一個和初創合作的例子。Damien說：「當中的痛點在於很多地盤位處偏遠位置，拉電並不容易，迫不得已要用柴油發電機。採用淨能櫃不單能大幅降低柴油發電機所發出的噪音，亦不會因燃燒柴油而排放黑煙，從而減少碳排放85%，推動工地採用潔淨能源。」其他的例子還有很多，如集團成為首個引入香港生產力促進局的kNOw Touch「無觸按鈕」電梯面板的私人地產商等。

無論對初創或轉型中的企業來說，都要學習如何面對失敗，Damien對此有獨到的看法：「對於初創來說，失敗時有發生，所以他們要有既定開發程序，懂得引入諸如最低可行性產品（minimum viable product, MVP）等概念，一旦發現有問題就停下來反省、修改、再出發。傳統企業並沒有培養這套思維，因此要常常提醒大家，所有事情不會一步到位，就算失敗也未必是壞事，最重要是過程中的學習，以及要先擬定好後備計劃，萬一遇上事故也可及時應對。」

One recent example of Chinachem's work is the introduction of the Enertainer, a battery-storage system created by a local startup, for the construction site at Anderson Road. "Traditional diesel generators are the most usual power source for remote construction sites because connecting to the grid is extremely difficult. By using the Enertainer, we were able to run all equipment without fumes or noise of diesel generators on site and reduce carbon emissions by 85%. This is one of the reasons we promote the use of clean energy wherever possible in our site works," Damien explained. There are more examples. For instance, the Group was the first private sector company to introduce the 'kNOw Touch' contactless lift control panel developed by the Hong Kong Productivity Council.

"For startups and companies undergoing digital transformation alike, it is common that some of the initiatives will fail, but those who fail fast tend to succeed faster," said Damien. "Therefore, there must be a procedure, or what is known as minimum viable product (MVP), to allow them to review, correct, and restart. Traditional organisations do not have this mind-set or culture, but we often remind our colleagues that Rome wasn't built in a day. Sometimes it's not a big deal to fail, but the most important thing is we learn from our mistakes. Have a plan B, so that we can cope with uncertainty and respond timely with agility."

HKT Accelerates Smart City Development in Hong Kong with Emerging Technology

香港電訊以新興科技推動香港智慧城市的發展

香港政府於2020年12月公布《香港智慧城市藍圖2.0》（《藍圖2.0》）進一步將香港打造成智慧城市。《藍圖2.0》提出超過130項智慧城市措施，當中覆蓋六個智慧範疇，包括「智慧出行」、「智慧生活」、「智慧環境」、「智慧市民」、「智慧政府」及「智慧經濟」。新措施旨在利用創新科技去提升市民的生活質素，並構建一個更方便及宜居的智慧城市。

為配合《藍圖2.0》，香港電訊為不同的企業及政府部門推行大型智慧項目，並利用更多新興技術，包括5G、物聯網、大數據分析及雲端服務，加速企業實現數碼轉型及致力推動香港智慧城市的發展。

In December 2020, the Hong Kong Government released its second blueprint for turning Hong Kong into a "Smart" City. Smart City Blueprint for Hong Kong 2.0 ("Blueprint 2.0") outlined more than 130 smart initiatives in different areas including mobility, living, environment, people, government, and economy. The new initiatives aimed to raise the overall living standard of the population and create a more convenient, livable and efficient city through innovation and technology (I&T).

In line with Blueprint 2.0, HKT is currently implementing a few large-scale commercial and Government smart projects leveraging on different emerging technologies such as 5G, IoT, data analytics and cloud computing, aiming to help enterprises go digital and assist Hong Kong's transformation into a smart city.

推動智慧出行計劃

新停車收費錶協助駕駛者能更快捷尋找空置泊車位

香港電訊及Flowbird聯營公司作為業界知名泊車方案供應商很榮幸成為運輸署新停車收費錶系統之服務營辦商，新停車收費錶系統是「香港智慧城市籃圖」下「智慧出行」的其中一個主要項目。運輸署已於2021年1月20日分批安裝約12,000台新停車收費錶取代現有收費錶，並預計於2022年上半年完成更換全部現有收費錶。

新收費錶支援多種付費方式，包括透過運輸署新的流動應用程式「入錶易」遙距繳費。此外，新收費錶配備車位感應器，提供實時資訊協助駕駛者透過「入錶易」尋找空置泊車位，令駕駛者更容易找到車位，從而提升泊車體驗到更高層次。有關感應器只能偵測停車位是否被佔用，不會收集任何個人資料、車輛型號或車輛登記號碼。

專線小巴實時到站資訊系統方便乘客計劃行程

香港電訊亦獲得運輸署批出「採購連管理、營運及維修專線小巴實時到站資訊系統」合約並將為全港專線小巴提供及安裝定位設備，以偵測小巴實時的位置及其他相關數據。項目覆蓋港島、九龍及新界逾600條專線小巴路線共約3,300輛小巴。專線小巴實時到站資訊系統已經在三條香港島專線小巴路線第69、69A及69X號線作試行，運輸署計劃於2021年3月進一步發放約70條專線小巴的預計到站時間，餘下路線的預計到站時間將會分階段發放，計劃於2022年全面覆蓋所有專線小巴路線。

(From left) Mr. Ricky Ho, Chief Engineer of Smart Mobility Division, Transport Department, Mr. Michael Law, Assistant Commissioner of Technical Services Branch, Transport Department, Mr. Tom Chan, Managing Director, Commercial Group, HKT, and Mr. Daniel Ng, SVP of Commercial Sales, Commercial Group, HKT, at the signing ceremony.

圖為運輸署助理署長/技術服務羅慶新先生(左二)、香港電訊商業客戶業務董事總經理陳紀新先生(右二)、運輸署總工程師/智慧出行何偉基先生(左一)，及香港電訊商業市場營銷高級副總裁吳健文先生(右一)在簽約儀式上合照。

The Transport Department (TD) held a media briefing on January 18 to introduce the new parking meters.
運輸署於1月18日媒體簡介會介紹新停車收費錶

Deploying Smart Mobility Initiatives

The new generation parking meter system will help motorists finding vacant metered parking spaces

HKT and Flowbird Joint Venture, a renowned parking system solution provider, is honored to be the contractor of the Transport Department ("TD") for the new generation of parking meter system. This project is one of the key "smart mobility" initiatives in the HK Government's Smart City Blueprint. The TD has commenced the installation of about 12,000 new parking meters in phases since 20 January 2021 to replace the existing ones, and it is anticipated that the replacement of all existing parking meters will be fully completed in the first half of 2022.

The new parking meters support multiple payment means, including remote payment of parking fees using TD's new mobile app "HKeMeter". The new parking meters are also equipped with space sensors, which could detect whether the parking space is occupied, and the real-time information of meter occupancy status will be disseminated to motorists for reference through HKeMeter to assist motorists in finding vacant parking spaces more easily, taking parking convenience to the next level. The space sensors are only capable of detecting the occupancy status of parking spaces and will not collect any personal information, details of vehicle types or vehicle registration numbers.

The Real-time Arrival Information System for Green Minibuses will facilitate passengers' trip planning

HKT has also been awarded the contract for procurement and management, operation and maintenance of the Green Minibus (GMB) Real-time Arrival Information System ("the System") by the Transport Department (TD). HKT is providing and installing location detection devices on GMBs for detecting their real-time locations, and disseminating their real-time arrival information phase-by-phase. The project involves approximately 3,300 GMBs covering more than 600 routes on Hong Kong Island, in Kowloon and the New Territories. A test launch for system is currently being conducted on three Hong Kong Island GMB routes: 69, 69A and 69X. The TD plans to further disseminate the real-time arrival information of about 70 GMB routes in March 2021, followed by that of the remaining GMB routes by phases, with a view to achieving full implementation in 2022.

Passengers are able to check the estimated time of arrival the next three GMBs through TD's mobile application "HKeMobility" to facilitate their trip planning and reduce long waiting time. HKT will also provide a 24x7 hotline service for general enquiries from public users and

乘客可透過運輸署的流動應用程式「香港出行易」，查閱未來三班專線小巴的實時到站資訊，方便計劃行程及縮短等車時間。香港電訊亦會提供24 X 7服務熱線，解答大眾的一般查詢，及為專線小巴營運商提供技術支援及系統維修。

促進智慧建築項目

為南豐集團及裕華國貨締造綠色建築及可持續發展

綠色建築是全球的新趨勢，香港電訊為南豐集團及裕華國貨提供綠色建築方案，助他們實現綠色發展的目標及可持續的未來。

香港電訊將為南豐集團的旗艦發展項目 AIRSIDE 提供資訊及通訊科技基建，度身訂造智能 Wi-Fi 平台及人工智能影像分析系統，以配合發展商的智能及綠色建築發展並為訪客提供更好的體驗。AIRSIDE呈獻一種嶄新的「和而為一」（Wholeness）都市生活風格，並將成為香港最新的地標。

在另一項目上，香港電訊為裕華國貨於尖沙咀的國際大廈進行翻新並引入能源管理系統，以改善大廈的能源效益及為公司實現可持續發展的目標。

Mr. Tom Chan, Managing Director of Commercial Group, HKT (right); Mr. Chung Chi-hung, Head of Property Management, Hong Kong, JLL (center); and Mr. Samson Leung, Group CEO of WEC, launched Hong Kong's largest IoT-powered PropTech deployment.

(右起) 香港電訊商業客戶業務董事總經理陳紀新先生、仲量聯行香港物業管理部主管鍾志雄先生及環球行政商務有限公司董事總經理梁善為先生，推出香港最大規模物聯網地產科技項目。

為仲量聯行旗下逾200個管理物業提升營運效率，為租戶提供更佳體驗

香港電訊致力透過物聯網及新興科技協助各行各業踏上數碼轉型之路。香港電訊非常榮幸與專為物業管理者提供專業服務的環球行政商務有限公司（WEC）攜手合作，為仲量聯行（JLL）構建全港最大規模的物聯網地產科技（PropTech）項目。

是次項目為仲量聯行旗下逾200個遍佈全港的管理物業內，安裝超過4,000個物聯網感應器，其中包括甲級寫字樓、購物商場、工業大廈及住宅項目等。

物聯網感應器方便監控物業的溫度、濕度、空氣質素、保安或漏水情況，所收集的數據會清晰呈現於一個中央數碼管理平台上，讓仲量聯行進行大數據分析，從而調整及讓管理流程自動化，提升營運效率，為租戶提供更佳體驗及減省物業的能源消耗。

隨著香港電訊於去年四月正式推出5G服務，我們深信物聯網及其他新興科技將為地產行業相關服務創造全新機遇。

technical support to the GMB operators and maintenance of the System.

Assisting in Smart Building Projects

Speeding up green building development and sustainability for Nan Fung Group and Yue Hwa Chinese Products

Eco-friendly "Green Building" is a global trend right now and HKT has been selected by the Nan Fung Group and Yue Hwa Group to provide green building solutions to help them realize their green visions and achieve sustainable futures.

For the Nan Fung Group, HKT provides a solid ICT infrastructure, smart Wi-Fi and a video analytics system to enable them to develop a smart and green building, and uplift the visitors' experience of the Group's new flagship project - AIRSIDE. This will be Hong Kong's newest landmark and embrace Nan Fung's new urban lifestyle concept – Wholeness.

For Yue Hwa Group, HKT will introduce an energy management system in their Yue Hwa International Building in Tsim Sha Tsui to improve energy efficiency and achieve the company's sustainability goals.

Optimizing operations and enhancing occupant experiences for more than 200 properties managed by JLL

HKT has been driving digital transformation with IoT and other emerging technologies for different vertically integrated industries. HKT was honored to collaborate with Worldwide Executive Ltd (WEC) to deliver Hong Kong's largest IoT-powered PropTech deployment for JLL.

Under the collaboration, HKT will install more than 4,000 IoT sensors at over 200 properties managed by JLL across Hong Kong, including Grade A commercial buildings, shopping malls, industrial buildings and residential complexes.

The IoT sensors are designed to monitor and capture data on weather, air quality, security, and water leakage. The data is then visualized in a centralized digital dashboard which allows JLL to re-engineer and automate processes and significantly enhance their operational efficiency in areas such as improving their service to tenants and optimizing energy consumption.

With the launch of 5G service by HKT in April 2020, we truly believe that IoT and other emerging technologies will create new opportunities for services offered in the real estate sector.

Improving the efficiency in Smart construction with innovative technologies

5G is currently transforming the way the construction industry does business. It is helping to speed up construction and make it smarter, safer, and more efficient.

As a result of the high bandwidth capabilities of 5G, data-heavy information such as videos of actual conditions on site can be uploaded and stored instantly to provide up-to-the-minute information to project teams. Technical support can be done remotely and monitored visually in real-time to reduce dependence on technicians.

Detailed visual inspections are critical to ensure proper building maintenance. For example, drones can be equipped with 5G high-resolution cameras to spot potential risk or maintenance problems on the exterior of a building which would otherwise be almost impossible to spot.

Robot patrol "dogs" can be equipped with sensors in high-risk areas to send out live streaming video for inspection. Surveillance system with AI installed on the robots can transmit images to the security guard or directly to a foot patrol officer's tablet.

以創新科技提升建築業效率

5G 正革新建築業的運作模式，不但加快業務發展，並使建築業變得更智能、安全及有效率。

憑藉高速的5G網絡，團隊可利用穩定的網絡傳輸大量數據，如工地現場環境的影像可快速上傳到雲端，為技術支援團隊提供最即時的資訊並有效協助遙距管理，減低對技術人員的依賴。

細緻影像檢查是確保樓宇建築安全的關鍵。例如無人機配備超高清鏡頭可捕捉及清晰檢測樓宇外牆較難被發現的裂縫或存在的風險。而機械巡邏狗可配備檢測器於工地危險區域進行實時錄像檢測。此外，人工智能監察系統亦可安裝在機械巡邏狗，以方便擷取有關巡邏影像並傳送至保安人員或其他巡邏員的平板電腦。

推廣智能長者護理服務

推廣樂齡科技支援智能安老及社會創業在香港的發展

香港電訊亦積極參與樂齡科技發展，與嶺南大學簽署諒解備忘錄，共同推廣樂齡科技，並於「嶺大賽馬會樂齡科技體驗館」展示專為長者護理中心而設的創新樂齡科技，增進公眾人士對樂齡科技的認識。

香港電訊與嶺南大學將與不同的持份者交流經驗，以進一步探討樂齡科技及智能安老的應用，亦會為「社會企業智活平台」提供諮詢服務。

作為香港領先的創新者，香港電訊擁有最頂級的固網及流動通訊網絡，配備卓越的Wi-Fi及5G傳輸，我們會繼續夥拍不同的樂齡科技服務供應商提供智能安老應用方案。

香港電訊商業客戶業務董事總經理陳紀新先生表示：「香港電訊一直致力推動企業的數碼轉型及加速香港智慧城市發展。我們很榮幸成為運輸署的智慧城市夥伴，有效推動智慧城市管理及為香港市民帶來一個全新的路面泊車體驗；而專線小巴實時到站資訊系統為大眾帶來更大的便利。」

陳先生續稱：「除了發展智慧出行項目外，我們很榮幸能與仲量聯行及WEC合作，令智能物業管理於技術及效率方面均更上一層樓。再加上5G是綠色建築技術的強大驅動力，我們深信香港電訊領先的固網及流動通訊網絡，以及結合全面的物聯網生態圈，可協助全港不同行業的企業實現可持續發展的目標。

除了物業管理，我們致力利用5G科技去革新建築業。透過不同的5G基建、應用及其他新興科技去推動建築業並令行業變得更安全、更智能及更有效率。

樂齡科技是將人口老化轉為創新機遇的關鍵，不但可改善長者的生活素質，亦可減輕護理中心員工的工作負擔。我們很高興能與嶺南大學合作，為長者社群帶來更好的生活。

我們會繼續推動香港的智慧出行、智慧建築項目及智能長者護理服務，並為香港智慧城市的發展作出貢獻。」

Accelerating smart services for the elderly

Promoting gerontechnology in support of smart ageing and socialpreneurship development in Hong Kong

HKT also actively participates in gerontechnology development. By signing a Memorandum of Understanding (MoU) with Lingnan University (LU), we help to promote gerontechnology to the public by showcasing a wide-array of innovative solutions for elderly care centers at the LU Jockey Club Gerontech–X Lab.

Both HKT and LU exchange experience with various stakeholders to encourage the exploration of gerontechnology and smart ageing technology, as well as providing consultancy services for the Social Enterprise Intelligent Hub (SEI Hub).

As a leading innovator in Hong Kong, HKT has the best-in-class fixed and mobile networks with superior Wi-Fi and 5G connectivity and is dedicated to working with different gerontechnology partners to provide smart ageing solutions.

Mr. Tom Chan, Managing Director, Commercial Group, HKT, said, "HKT has been driving digital transformation for enterprises and smart city development in Hong Kong. We are honored to be a smart city partner of the Transport Department and delighted that HKT is enabling effective smart city management and bringing a new on-street parking experience to Hong Kong people, and provide greater convenience for the public with real-time arrival information on Green Minibuses."

Mr Chan added, "In addition to smart mobility initiatives, we are glad to collaborate with JLL and WEC to bring the intelligence and efficiency of smart building management to the next level. Also, 5G is a super enabler of green building technologies and we believe that our leading fixed and mobile networks and comprehensive IoT ecosystem can help realize the sustainability goals of enterprises across many industries in Hong Kong.

Besides property management, we strive to revolutionise the construction industry with 5G development. Through 5G infrastructure, applications and other emerging technologies, we aim to speed up construction and make it safer, smarter and more efficient.

Gerontechnology is also the key to turning ageing population into innovative opportunities to improve the quality of life of the elderly and reduce the workload and burden on caregivers in care centers. We are glad to collaborate with Lingnan University to better serve the elderly community.

We will continue to develop smart mobility, smart building projects and smart technologies for the elderly in Hong Kong, and contribute to the development of Hong Kong's smart city."

Mr. Dennis Wong, Senior Vice President, Emerging Technologies, Commercial Group, HKT (left); and Prof. Joshua Mok Ka-ho, Vice President of LU, announced a collaboration to promote smart elderly care services in Hong Kong.
香港電訊商業客戶業務新興科技高級副總裁黃港生先生（左）及嶺南大學副校長莫家豪教授宣佈合作，攜手推廣香港的智能長者護理服務。

Picture 2: Exhibition booth
圖2：會展攤位

iAngel Uses Positioning Technology to Help Find Missing Elders
iAngel以定位科技協助尋找走失長者

「黃生，我是五期管理處，我們見到你媽媽一個人坐在公園，好像走失了，你快過來接她回家好嗎？」

「對不起，我正在公司開會，無法前來，我會致電教會朋友，請他/她去五期管理處接她，謝謝！」

這是我常常有的經驗……

我媽媽幾年前開始患上腦退化症（圖1），常常走失，幸好她還未曾試過離開屋苑，否則，我真的不知道往哪裡尋找這位慈愛的媽媽！

Picture 1: The author and mother
圖1：筆者和媽媽

"Mr. Wong, this is the Phase 5 Property Management Office. We find your mother who seems to have got lost and is sitting in the park alone. Will you come and bring her back home?"

"I can't make it, I'm having an important meeting. My friend will pick her up at Phase 5, thanks for the call."

It's typical.

My mother started suffering from dementia a few years ago, and she often gets lost. Fortunately, she hasn't left the estate, otherwise there's nowhere to begin searching for my loving mother. (Picture 1)

According to the Hong Kong Population Projection 2020-2069 published by the Census and Statistics Department, currently one out of six Hong Kong people are elders aged 65 years or above. The data from the Hospital Authority in 2017 showed that 5% to 8% of elders will suffer from dementia, and the prevalence will increase with age to between 20% and 30% for the 80+ years old.

The Smart City Blueprint for Hong Kong 2.0 ("Blueprint 2.0"), released by the Government on 10th December 2020, has more than 130 initiatives with the goal to bring convenience to the citizens through innovations and digitalization of a smart city. One of the missions of the Blueprint 2.0 is "to provide better care for the elderly and youth and foster a stronger sense of community. To make the business, people and Government more digitally enabled and technology savvy".

Lik On Security Limited, in order to cooperate with the Government's announcement of the Smart City Blueprint for Hong Kong ("Blueprint 1.0") in December 2017, soft launched our "iAngel" project on 7th December 2017. (Picture 2)

根據政府統計處出版的《香港人口推算2020-2069》，現時每六個香港人就有一個是65歲或以上的長者；而根據醫院管理局2017年的資料顯示，其中患有腦退化症的，估計佔5%至8%，80歲或以上長者的患病比率，更估計達20%至30%。

政府在2020年12月10日公布《香港智慧城市藍圖2.0》，提出超過130項智慧城市措施，目標是要讓市民更能感受智慧城市及創新科技為日常生活帶來裨益。其中一個目標，就是「更妥善關顧長者及青年人，令大眾對社會更有歸屬感，同時令工商界、市民和政府進一步數碼化和更通曉科技」。

力安科技有限公司為配合政府在2017年12月公布的首份《香港智慧城市藍圖》，於2017年12月7日，軟啟動我們的「iAngel」項目。（圖2）

我們想透過定位科技，像「天使」24小時「保護」患有腦退化症長者，以便大大減輕家人的壓力，也可以協助他/她們全天候照顧長者。

iAngel是一隻智能手錶，內置GPS（全球定位系統）功能、通話功能及連接著我們中央控制中心（Central Control Room）的系統。患有腦退化症長者，只需佩戴iAngel智能手錶，GPS功能便能為長者定位，並在我們中央控制中心的系統顯示其位置。（註：家人需簽名同意開放長者的位置）

安全區 / 危險區的設定

用戶可以為患有腦退化症長者，設定安全區（安全活動範圍）及危險區（不應進入的範圍，如邊境）。當手錶偵測到長者離開了預設的安全區或進入了預設的危險區時，系統會即時收到提示，這時候我們中央控制中心職員，便會立即通知其家人，並且尋求進一步的指示。（圖3）

室內定位功能

患有腦退化症長者有時候會進入室內如商場，這時候GPS便告失效，為此，我們為iAngel加入如ESRI ArcGIS Indoors的室內定位功能，追蹤長者在戶內位置，直至尋回。（圖4）

輕微腦退化症長者

iAngel智能手錶內置的通話功能，可提升患有輕微腦退化症長者單獨外出時的安全。當手錶偵測到長者離開了預設的安全區或進入了預設的危險區時，我們中央控制中心職員便會立即致電給長者，並指引他/她回家。

人工智能

我們系統會收集患有腦退化症長者的日常行走路線數據，並且作出分析，推算他/她們出門後的行走方向（如向左或向右）之機率。即使有日這位長者忘記佩戴iAngel智能手錶，系統也可以過去的數據推算其位置，有助盡快尋回。

Picture 3: Outdoor Association Search
圖3：室外協尋

We want to look after dementia patients 24/7 like "angels" to assist and reduce the pressure on their family members.

iAngel is a smart watch with built-in GPS (global positioning system) and call functions with system connection to our Central Control Room. It can be worn by the elderly with dementia and their location will be shown in our central control center via GPS. (Note: Signature and consent must be granted by family members to enable the locating function.)

Safety Zone / Dangerous Zone Setting

Users can set safety zones (that is, safe areas of activity) and dangerous zones (areas that should not enter, such as beyond the borders) for the elderly with dementia. When the smart watch detects the elderly has left the preset safety zone or entered the dangerous zone, the system will immediately alert our central control center staff to notify their family members and seek further instructions. (Picture 3)

Indoor Positioning Function

Since GPS would fail indoors, like shopping malls, iAngle integrates indoor tracking functions with ESRI ArcGIS Indoors to track patients for finding them. (Picture 4)

Elderly with Mild Dementia

Elderly with mild dementia can go out alone with an iAngel smart watch which has a built-in call function. When the watch detects that the elder has left the preset safe zone or entered the preset dangerous zone, our central control center staff will call the elder immediately and guide him/her home.

Artificial Intelligence

Our system will collect patient's data, like their daily routine and their usual paths (such as likelihood of going left or right after leaving home). Even if he/she leaves behind the watch, the system can predict their location based on previous data for a quicker search.

Picture 4: Indoor Association Search
圖4：室內協尋

2020

28 NOVEMBER

Exchanged Views with Heads of Buildings Department, Lands Department and EMSD at panel discussion

與屋宇署、地政總署及機電工程署署長交流意見

Dr. Winnie Tang, Founder and Honorary President of Smart City Consortium, attended the Hong Kong Institute of Surveyors Annual Conference on 28 November 2020. Themed "Beyond 2020 - The Trend of Surveying", and the Conference invited Dr. Tang to be the moderator of a panel discussion. She exchanged views on the trend of development for the surveying profession with the heads of Buildings Department, Lands Department, as well as Electrical and Mechanical Services Department. All participants expected Hong Kong to be further developed into a more livable and international smart city.

香港測量師學會於2020年11月28日舉行周年會議，主題是「Beyond 2020 - The Trend of Surveying」。支持機構之一的智慧城市聯盟的創辦人兼榮譽會長鄧淑明博士獲邀主持一個討論環節，與屋宇署、地政總署及機電工程署署長，於台上共同探討測量專業的發展趨勢，而與會者都期望香港能進一步發展為更宜居、更國際化的智慧城市。

2020

28 NOVEMBER

"Integrating Knowledge of New Technology into Service Development"

「新科技知識與服務發展的融合」

Smart City Consortium Vice President Ms. Rosana Wong attended the 5th Asian Pacific Problem Gambling and Addiction Conference organized by the Tung Wah Group of Hospitals on 28 November 2020 to share how the applications of advanced technology including IoT-enabled devices, sensors, 5G, AI and robotics can improve access to care, quality of care, reduction in the total cost of care as well as moving ahead in the new normal. Actually, IoT has proven to be helpful in the current Covid-19 situation where it has enabled prediction and monitoring mapping to alert the public of the outbreak situation. Ms. Wong also introduced the integration of the advanced technology in other areas, for instance, double ageing community and barrier-free smart mobility.

智慧城市聯盟副會長黃慧敏女士應邀出席東華三院於2020年11月28日舉辦的第五屆亞太區問題賭博及成癮問題研討會，以「新科技知識與服務發展的融合」為題發表演講。她指出應用物聯網、傳感器、5G、人工智能和機械人等先進技術，可以令更多需要護理服務的人受惠，同時，服務質素和成本也可改善，並促使社會在疫情後的新常態中向前邁進。在疫情下，已證明物聯網有助於預測和監察疫情，並可提醒公眾注意最新發展。黃女士亦介紹了其他領域的先進技術，例如雙老化社區和無障礙智慧出行等。

2020

30 NOVEMBER

Visit CUHK Medical Centre
參觀中文大學醫院

CUHK Medical Centre commenced its service on 6 January 2021. Smart City Consortium's core members including Honorary Presidents, President, Vice Presidents and Technical Advisors in health sectors visited the CUHK Medical Centre on 30 November 2020. They also held a meeting with the Executive Director and CEO Dr. Fung Hong.

香港中文大學醫院於2021年1月6日正式投入服務正式投入服務，智慧城市聯盟榮譽會長、會長及跟醫護服務有關的副會長及顧問，於2020年11月30日參觀該醫院，並與該院執行董事及行政總裁馮康醫生會面。

2020

01 DECEMBER

SCC signed MoU with an Indonesian developer at Belt and Road Summit
智慧城市聯盟於「一帶一路高峰論壇」與印尼地產集團簽署合作備忘錄

The 5th Belt and Road Summit, jointly organized by the HKSAR Government and the Hong Kong Trade Development Council (TDC), took place virtually from 30 November to 1 December 2020. Indonesian President Mr. Joko Widodo was invited to give a keynote speech and HKSAR Chief Executive Ms. Carrie Lam delivered an opening speech. Witnessed by Belt and Road Commissioner Mr. Denis Ip and TDC Deputy Executive Director Mr. Patrick Lau, Mr. Gary Yeung, MH, President of Smart City Consortium signed a memorandum of understanding (MoU) with an Indonesia-based enterprise, PT Graha Buana Cikarang on 30 November, with an aim to apply Hong Kong's smart city technology to Southeast Asia. According to the MoU, both parties agreed to collaborate in research in smart mobility, electronic healthcare, disaster prevention and environmental energy.

Mr. Yeung also attended the Belt and Road Global Forum Annual Roundtable online together with 70 members from 19 countries and regions on 1 December.

由香港特別行政區政府及貿易發展局（TDC）主辦的「一帶一路高峰論壇」於2020年11月30日起一連兩天於網上舉行，印尼總統維多多應邀作主題演講，行政長官林鄭月娥致開幕辭。在政府「一帶一路」專員葉成輝先生及貿易發展局副總裁劉會平先生見證下，智慧城市聯盟會長楊文銳先生於11月30日中午與印尼企業PT Graha Buana Cikarang透過網上平台簽署合作備忘錄。雙方同意在智慧出行、電子醫療、防災、環境能源等方面研究合作。

楊文銳先生並與70位來自19個國家和地區的與會者，一同參加了在12月1日的「一帶一路」年度圓桌會議。

2020

03 - 05 DECEMBER

TSF 工商機構支援基金 Trade and Industrial Organisation Support Fund

HK Smart City Pavilion @ China Smart City Expo in Beijing

中國智博會「香港智慧城市展館」

Smart City Consortium set up a Hong Kong Smart City Pavilion (HK Pavilion) in China Smart City Expo (Expo) held at the Beijing Exhibition Hall on 3-5 December 2020 to promote Hong Kong's smart city services to mainland users and officials.

At the HK Pavilion, 26 Hong Kong companies in IoT, FinTech and information security sectors showcased their products or services. Through the large screen of the HK Pavilion, Mr. Gary Yeung, MH, SCC President, provided an overview of Hong Kong's smart city development to government officials, businesses and visitors.

The HK Pavilion was sponsored by the Trade and Industrial Organisation Support Fund from the Trade and Industry Department of HKSAR Government, with Cyberport, Hong Kong Software Industry Association, and Hong Kong Information Technology Joint Council as Collaborating Organizations.

由國家發展和改革委員會指導、中國城市和小城鎮改革發展中心及智慧城市發展聯盟舉辦的「中國智慧城市博覽會」（智博會）於2020年12月3至5日在北京展覽館舉行。

智慧城市聯盟（聯盟）在會上設置「香港智慧城市展館」，向內地官員及企業展示26家香港公司的物聯網、金融科技、信息安全服務。聯盟會長楊文銳先生透過「香港智慧城市展館」現場的大屏幕，向進場的領導、企業和參觀人士介紹香港智慧城市的概況。

「香港智慧城市展館」獲工業貿易署「工商機構支援基金」撥款資助；香港數碼港、香港軟件行業協會、香港資訊科技聯會為合作機構。

2020

10 DECEMBER

Bay-Era Inno-Smart Entrepreneur Awards

灣時代「 創智 」企業家評選活動

The Bay-Era Inno-Smart Entrepreneur Award, was jointly organized by the Smart City Consortium (SCC) and the Shenzhen Outbound Alliance. It aims to identify more potential and promising young entrepreneurs, and innovative enterprises with strong growth potential for the better development of both Shenzhen and Hong Kong.

The launch ceremony was held in Shenzhen on 10 December 2020. SCC Honorary Treasurer Mr. Sam Fan introduced the content of the event to government officials of Shenzhen, representatives of foreign institutions and business leaders.

「灣時代『創智』企業家評選活動」是由智慧城市聯盟（聯盟）和深圳市走出去戰略合作聯盟共同主辦，旨在為深港地區的合作發展挖掘更具潛力的青年企業家、甄選最具潛力的青年創業領袖，以及挖掘增長強勁、具有創新精神的優秀企業。

活動的啓動儀式於2020年12月10日在深圳舉行，聯盟名譽司庫范家珩先生代表主辦單位向出席的深圳各級領導、外國機構代表以及商界領袖介紹活動內容。

2020

23

31

DECEMBER

SCC Booth and CSDI Seminar @ Virtual InnoCarnival 2020

SCC展覽及講座@網上創新科技嘉年華2020

Smart City Consortium (SCC) staged a pavilion to promote the concept of geographic information system (GIS) and common spatial data infrastructure (CSDI) at the Virtual InnoCarnival 2020 organized by the Innovation and Technology Commission from 23-31 December 2020. Dr. Kenneth Tang, Chairman of SCC SDI Committee, gave a speech titled "The Roles of Modern Technologies in Smart City Development" to the audience of the virtual exhibition.

由創新科技署主辦的創新科技嘉年華2020（網上）於12月23-31日舉行。智慧城市聯盟（聯盟）是參展單位之一，除了介紹聯盟的宗旨和活動外，又向公眾講解地理資訊系統（GIS）技術及空間數據共享平台（CSDI），並舉行網上講座，由聯盟空間數據基礎設施委員會主席鄧兆星博士主講，題為「現代科技在智慧城市發展中所扮演的角色」。

2021

12

19

JANUARY

Trust Over IP highlighted at HKPKIF

香港公匙基建論壇研討會介紹ToIP

The two-day Hong Kong Public Key Infrastructure Forum Conference 2021 took place on 12 and 19 January 2021 respectively. Themed "Evolution and Localization of Public Key Infrastructure and Digital Identity – Digital Trust Ecosystem", the Conference was organized by the Hong Kong Public Key Infrastructure Forum Limited (HKPKIF). The Conference invited government officials, scholars of eKYC and data science, financial and business leaders from Hong Kong, as well as scientific and technological experts from the United States, Canada and Europe, to share views on the opportunities and potential of promoting self-managed digital authentication through blockchain technology, personal data management and global legal entity identification coding (LEI) standards in Hong Kong. Smart City Consortium was a Knowledge Partner of the event. Mr. Gary Yeung, MH, SCC President, was invited to share his views at the 12 January panel.

由香港公匙基建論壇（HKPKIF）主辦的「可信數碼認證生態系統」的國際研討會分別於2021年1月12日和19日舉行。是次國際論壇邀請了香港的政、商、學界專家，及美國、加拿大及歐洲等科技專家，暢談推動透過區塊鏈技術的自我管理數碼認證技術、私隱數據管理及全球法人機構識別編碼（LEI）的標準在香港的發展機遇及潛力。 智慧城市聯盟是活動的Knowledge Partner，會長楊文銳先生也於1月12日研討會上分享其見解。

2021

14 JANUARY

Smart City Blueprint 2.0 Webinar

《香港智慧城市藍圖2.0》網上論壇

The Smart City Consortium (SCC) has supported and promoted the development of smart city development in Hong Kong. That's why right after the Government releasing the Smart City Blueprint for Hong Kong 2.0 (Blueprint 2.0) with more than 130 smart city initiatives in December 2020, SCC has organized and engaged in a number of activities on this subject.

Following a press release in last December, SCC organized a Smart City Blueprint 2.0 Webinar jointly with Cyberport on 14 January 2021, at which the Secretary for Innovation & Technology Mr. Alfred Sit introduced more details about the Blueprint 2.0. Government Chief Information Officer Mr. Victor Lam, Cyberport CEO Mr. Peter Yan and SCC President Mr. Gary Yeung, MH, exchanged views at the panel discussion. More than 300 members of the public were attracted to watch the Webinar.

智慧城市聯盟（聯盟）一直關心香港智慧城市發展，因此政府於2020年年底公布《香港智慧城市藍圖2.0》（藍圖2.0），提出逾130項智慧城市措施後，聯盟隨即回應，包括發放新聞稿，及聯同數碼港於2021年1月14日舉行「香港智慧城市藍圖2.0網上論壇」。

創新及科技局局長薛永恒先生在論壇上介紹《藍圖2.0》的重點，而政府資訊科技總監林偉喬先生則參加隨後的討論環節，數碼港行政總裁任景信先生及聯盟會長楊文銳先生也就《藍圖2.0》如何加快香港的智慧城市發展，及可以如何幫助我們應對未來的挑戰進行熱烈討論，是次論壇共吸引了超過300名公眾線上觀看。

2021

29 JANUARY

香港董事學會
The Hong Kong Institute of Directors
FOUNDED 1997

Global Directorship Programme 2020

Smart City Blueprint 2.0

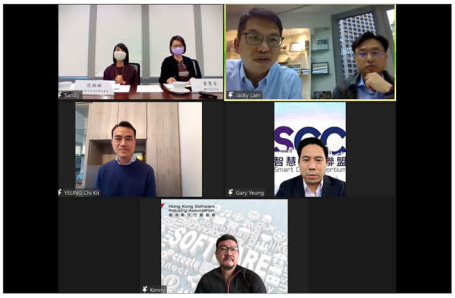
智慧城市藍圖2.0

Upon the newly announced Smart City Blueprint for Hong Kong 2.0, Smart City Academy Executive Director and Smart City Consortium Vice President Mr. Daniel Chun gave a speech titled "Roadmap and Development of Smart City in Hong Kong" under Hong Kong Institute of Directors Global Directorship Programme on 29 January.

就著《香港智慧城市藍圖2.0》，智慧城市學院執行總監兼智慧城市聯盟（聯盟）副會長秦仲宇先生於1月29日應邀在香港董事學會的Global Directorship Programme上，就香港智慧城市的發展和路線圖，以及聯盟的建議講解分析。

2021

04 FEBRUARY



SCC, iProA and HKSiA support GBA Youth Employment Programme

香港創科業界三個協會支持政府大灣區青年就業計劃

In January 2021, the Government announced the launch of the Greater Bay Area Youth Employment Scheme ("the Scheme") to encourage and support Hong Kong young people to work and pursue their careers in the Greater Bay Area. To support the Scheme, Smart City Consortium, together with Internet Professional Association (iProA) and Hong Kong Software Industry Association (HKSiA), have issued a joint press release pledging to offer about 100 job vacancies.

The three associations also held a joint webinar on 4 February with government officials.

政府於一月初宣布推出大灣區青年就業計劃（「計劃」），資助港資企業聘請本地畢業生。香港創科業界三個協會包括智慧城市聯盟、互聯網專業協會及香港軟件行業協會發表聯合新聞稿，宣布推動會員公司參與計劃，預期三個協會可提供合共100個創科職位。

ADVANTAGE AUSTRIA WKO

AUSTRIAN TECHNOLOGY DAYS

奧地利科技日

2021

25 - 27 MAY

ADVANTAGE AUSTRIA Hong Kong, in partnership with the Smart City Consortium (SCC), the Business Environment Council (BEC) and the Construction Industry Council (CIC) presented at the Austrian Technology Day and met Austria's best technology providers for smart city as well as urban tech solutions virtually.

On 25th May, Ir. Dr. KF Tsang, SCC Vice President shared his views about water & sewage systems. Mr. Simon Ng, Policy & Research Director of BEC and Ir. Thomas Tong, General Manager of Innovation and Technology Development, CIC discussed about smart mobility and construction on 26th and 27th May respectively.

ADVANTAGE AUSTRIA Hong Kong與智慧城市聯盟（聯盟）、商界環保協會（BEC）和建造業議會（CIC）合作，於奧地利科技日與奧地利技術商進行網上會面，討論有關智慧城市和城市科技的解決方案。

活動名為AUSTRIAN TECH FOR HONG KONG，在5月25日與聯盟副會長曾劍鋒博士工程師在網上討論有關供水及污水處理系統問題；而BEC政策及研究總監吳家穎先生及CIC創新及科技發展總經理唐耀南工程師分別於5月26及27日參與有關「智慧出行」及「智慧建築」的討論。

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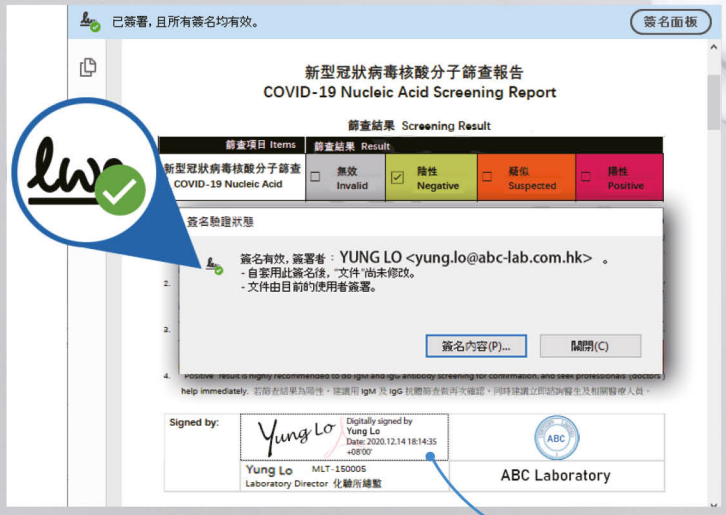

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智慧城市聯盟的《智城》每季出版一次，以IT社群為對象，派發地方包括政府相關部門、數碼港、香港科學園、啟迪科技園、生產力促進局以及各大專院校校園。查詢刊登廣告事宜，請致電3480–4230或電郵至info@smartcity.org.hk與智慧城市聯盟秘書處聯絡。

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