

**For discussion
on 8 February 2021**

**Legislative Council
Panel on Information Technology and Broadcasting**

Update on Smart City Development

Purpose

This paper briefs Members on the contents of the *Smart City Blueprint for Hong Kong 2.0*.

Background

2. The Government published in December 2017 the *Smart City Blueprint for Hong Kong*, setting out 76 initiatives under six smart areas (viz. “Smart Mobility”, “Smart Living”, “Smart Environment”, “Smart People”, “Smart Government” and “Smart Economy”) with a view to addressing city management challenges and improving people’s livelihood through innovation and technologies (I&T). Among them, more than 40 initiatives are completed or under completion in stages.

Progress

3. In the past three years, various bureaux/departments and related organisations have been taking steps to implement these initiatives, and take forward new initiatives. For example, the launch of the all-in-one mobile application “HKeMobility”; the expansion of free public Wi-Fi hotspots coverage across the territory; and the adoption of various smart solutions at the airport. Besides, we also launched the Faster Payment System in September 2018, and have recorded around 6.9 million registrations with a transaction volume of over HK\$2 100 billion since its launch. In regard to promoting Smart Government, we introduced a new “pro-innovation government procurement policy” and established the “Smart Government Innovation Lab” in April 2019 to facilitate government departments to expedite their adoption of information technology (IT) solutions for improving the quality and efficiency of public services; thereby creating more business opportunities for local start-ups and small and medium-sized enterprises. In respect of digital infrastructure, we have invested over \$900 million in the past three years in taking forward a number of projects. The

Next Generation Government Cloud Infrastructure and the Big Data Analytics Platform commenced operation in September 2020, whilst the “iAM Smart” one-stop personalised digital services platform was launched in December 2020.

4. For the implementation of the “Multi-functional Smart Lampposts” Pilot Scheme (Pilot Scheme), in light of concerns over the privacy in the society, the Office of the Government Chief Information Officer (OGCIO) established the Smart Lampposts Technical Advisory Ad Hoc Committee (Ad Hoc Committee) in August 2019 to review the privacy protection technologies and measures of relevant lamppost applications. The Ad Hoc Committee submitted a report to the Government in March 2020, which agreed that smart lampposts are important infrastructure for promoting smart city development and facilitating 5G mobile network development, and recommended the Government to continue to take forward the Pilot Scheme.

5. OGCIO briefed the Kwun Tong District Council on the implementation of the Pilot Scheme in Kwun Tong in mid-2020, and have actively explored more privacy-friendly technology solutions and stepped up publicity and public engagement per the Ad Hoc Committee’s recommendations, to enhance public confidence in the Pilot Scheme. We are also exploring the use of LiDAR to replace cameras in detection of vehicle speeds and identification of different types of vehicles, and will conduct road tests within this quarter. Subject to satisfactory testing results and development of the local epidemic, it is expected that pilot installations could take place on existing smart lampposts in mid-2021. In addition, we will also organise an online public exhibition on smart lampposts this quarter to facilitate the public’s understanding of the smart devices and their applications on the smart lampposts.

Smart City Blueprint for Hong Kong 2.0

6. The Government released *Smart City Blueprint for Hong Kong 2.0* (Blueprint 2.0) on 10 December 2020 setting out over 130 smart city initiatives (see **Annex**). The goal is to bring benefits and convenience to members of the public so that they can better perceive the benefits of smart city and I&T in their daily lives. These initiatives include those that are under implementation or of an ongoing nature, such as open data and on-street parking meters supporting remote payment, etc., and there are over 60 new initiatives that were launched after the Blueprint was published in end 2017, including:

(a) Smart Mobility

- Develop a Traffic Data Analytics System to enhance traffic management and efficiency;
- Set up the Smart Traffic Fund to promote research and application of vehicle-related innovation and technology;

(b) Smart Living

- Use the “iAM Smart” Platform to streamline Transport Department’s licensing services;
- Explore the use of telehealth, video-conferencing and remote consultation in Hong Kong;

(c) Smart Environment

- Launch the “smart toilet” pilot programme and explore application of technologies in public toilets;
- Improve pest control using technologies such as Internet of Things technology;

(d) Smart People

- Implement the IT Innovation Lab in Secondary Schools programme;
- Continue to implement the STEM Internship Scheme;

(e) Smart Government

- Develop the Electronic Submission Hub for processing building plans;
- Implement e-licensing services under “Be the Smart Regulator” Programme to digitise most licensing applications before mid-2022, and reform government services involving applications and approvals under the “Streamlining of Government Services” Programme;

(f) Smart Economy

- Develop an online platform to provide efficient and cost-effective online dispute resolution and deal-making services; and
- Develop eMPF Platform for administration of the Mandatory Provident Fund schemes.

7. Moreover, the Blueprint 2.0 has also put forth the idea of exploring smart village pilots in rural areas. The pilots explore the use of I&T and smart devices in addressing the specific environmental and daily life issues faced by residents living in rural and more remote areas, such as enhancing telecommunications coverage, detecting illegal dumping, wild animals and flooding etc.. The Government will liaise with the Heung Yee Kuk New Territories to implement certain pilot projects based on the actual situation of different locations, such as installing necessary facilities to provide free Wi-Fi services at suitable rural locations (such as rural and village offices). We will also participate in the Heung Yee Kuk New Territories' mobile exhibitions to showcase different smart technologies, including applications of the smart lampposts.

Use of I&T in Combating COVID-19

8. The world has been hard hit by the COVID-19 pandemic, and this has changed some aspects of our daily lives and business operations. Our anti-epidemic and preventive work over the past year has brought about some insights in taking forward I&T development, including transforming the conventional service modes with an innovative mindset and addressing the “new normal” by wider adoption of technologies. We will strive to incorporate the need for reducing contacts among people under the anti-epidemic “new normal” into the Government’s recurrent work. As such, a new chapter “Use of I&T in combating COVID-19” is added to the Blueprint 2.0, covering work implemented or being planned, including:

- (a) Continue to deploy home quarantine system “StayHomeSafe” to support home quarantine for people arriving in Hong Kong;
- (b) Encourage wider application of anti-microbial technology in public transport;
- (c) Deploy the exposure notification system and mobile app “LeaveHomeSafe”;

- (d) Continue to promote use of contactless payments in public markets;
- (e) Continue to expand the functions of Hospital Authority's "HA Go" mobile app to provide remote consultation using video conferencing technology / prescribe clinical information for specific groups of patients, in addition to online booking of clinic appointments and payment; and
- (f) Established the COVID-19 Online Dispute Resolution Scheme to provide businesses and the public with speedy and cost-effective online dispute resolution services.

We will continue to use I&T to support our anti-epidemic and preventive work, such as adding the "Electronic Vaccination Record" enquiry services onto the "iAM Smart" Platform. Members of the public could connect to the Electronic Vaccination and Testing Record System and download electronic vaccination records upon confirming their identities on "iAM Smart".

9. The Blueprint 2.0 has been uploaded to the dedicated smart city portal (www.smartcity.gov.hk). It will be updated from time to time on the progress of individual initiatives. Members of the public can learn about the progress of these smart city initiatives through the dedicated portal and obtain the latest information via the real-time city dashboards. They can submit their views and suggestions on different initiatives and topics via the portal and other channels.

10. Bureaux/Departments will continue to report progress of relevant smart city initiatives in the Blueprint 2.0 to the public or the respective panels of the Legislative Council.

Advice sought

11. Members are invited to note the content of the Blueprint 2.0 and give their views.

**Innovation and Technology Bureau
Office of the Government Chief Information Officer
February 2021**



Hong Kong Smart City Blueprint 2.0



Foreword

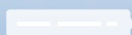
This is the second edition of *Smart City Blueprint for Hong Kong (Blueprint 2.0)*.

The Government published the *Smart City Blueprint for Hong Kong* in December 2017, setting out 76 initiatives under six smart areas, namely “Smart Mobility”, “Smart Living”, “Smart Environment”, “Smart People”, “Smart Government” and “Smart Economy”. Among them, the digital infrastructure projects and other major initiatives have been implemented as planned in the past three years, for example, the Faster Payment System, installing free public Wi-Fi hotspots, and the “iAM Smart” one-stop personalised digital services platform.

Blueprint 2.0 puts forth over 130 initiatives which continue to enhance and expand existing city management measures and services. The new initiatives aim to bring benefits and convenience to the public so that residents can better perceive the benefits from smart city and innovation and technology (I&T) in their daily lives. Examples are application of “Building Information Modelling”, enhancement of smart tourism platforms, establishment of the LawTech Fund, development of the Traffic Data Analytics System, and Smart Village pilots, etc. In addition, our work in combating the epidemic in 2020 has given us some insights on promoting I&T development. In particular, the adoption of an innovative mindset to transform established service modes and the wider adoption of technology to combat the “new normal”. *Blueprint 2.0* has also included a new chapter on “Use of I&T in Combating COVID-19”, which covers measures already undertaken and being planned, such as the “StayHomeSafe” system to support home quarantine, deploying the “LeaveHomeSafe” exposure notification mobile app, development of health codes to facilitate cross-boundary travel, etc.

The Smart City portal (www.smartcity.gov.hk) serves as a bridge of communications between the Government and members of the public. We will update regularly the progress of these smart city initiatives and provide real-time city data dashboards. Members of the public can also submit their views and suggestions on different initiatives and subjects.

Innovation and Technology Bureau
December 2020



Vision

Embrace innovation and technology to build a world-famed Smart Hong Kong characterised by a strong economy and high quality of living

Mission

- To make people happier, healthier, smarter and more prosperous, and the city greener, cleaner, more livable, sustainable, resilient and competitive
- To enable the business to capitalise on Hong Kong's renowned business-friendly environment to foster innovation, transform the city into a living lab and test bed for development
- 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
- To consume fewer resources and make Hong Kong more environmental friendly, while maintaining its vibrancy, efficiency and livability



USE OF I&T IN COMBATING COVID-19

Continue to deploy home quarantine system "StayHomeSafe" to support home quarantine for people arriving in Hong Kong NEW



Develop health codes to facilitate orderly resumption of travel between Hong Kong and other places NEW



Encourage wider application of anti-microbial technology in public transport NEW



Deploy the exposure notification system and mobile app "LeaveHomeSafe" for different trades and premises NEW



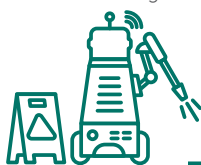
Adopt technologies in public markets to enhance environmental hygiene NEW



Continue to promote use of contactless payments in public markets NEW



Use of robots for airport terminal patrol, baggage handling, cleansing, disinfection and environmental monitoring NEW



Introduce new or streamlined e-forms to further digitise health declaration processes NEW



Continue to expand the functions of Hospital Authority's "HA Go" mobile app to provide remote consultation using video conferencing technology and to prescribe clinical information for specific groups of patients, in addition to online booking of clinic appointments and payment NEW



Established the LawTech Fund of \$40 million to encourage and support the legal sector to adopt technologies NEW

Develop Common Spatial Data Infrastructure and Establish Geospatial Lab

Enhance "iAM Smart" applications to promote wider use of digital payments and remote on-boarding in the financial and other industries NEW

Established the COVID-19 Online Dispute Resolution Scheme to provide businesses and the public with speedy and cost-effective online dispute resolution services NEW



SMART MOBILITY

Current Status



Over **12 million**

passenger journeys on public transport every day with railway being the backbone (2019 figure)

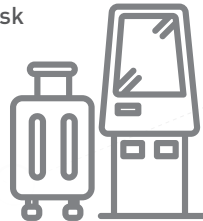
Over **95%** of Hong Kong people using Octopus cards to travel, shop and dine without the hassle of cash



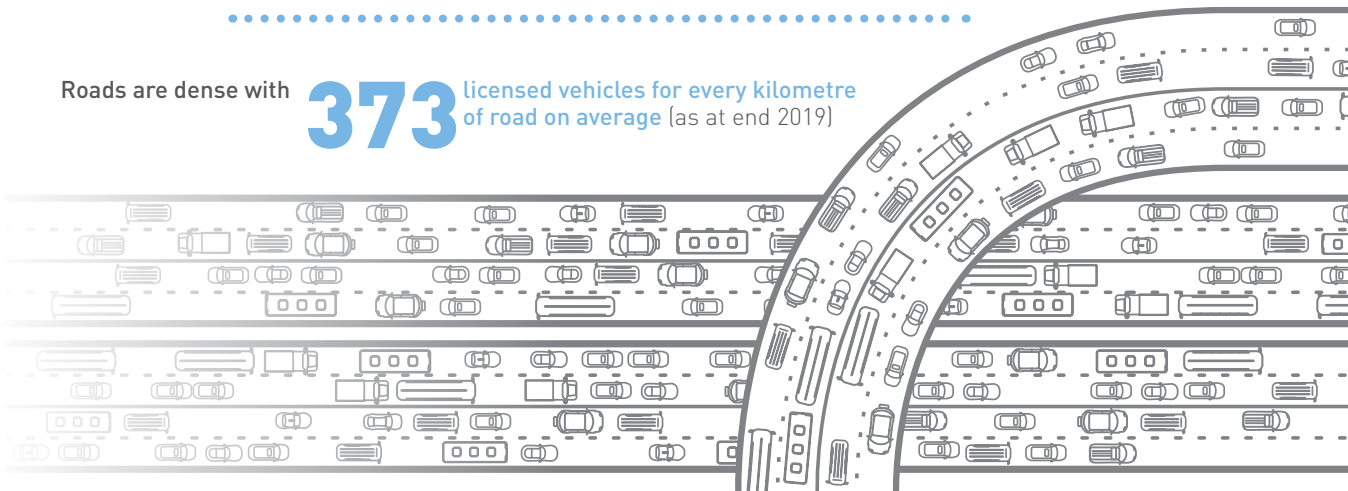
Smart Airport



- smart check-in kiosk
- self-bag drop
- e-Security Gates
- indoor wayfinding
- MyTAG



Roads are dense with **373** licensed vehicles for every kilometre of road on average (as at end 2019)



Strategy and Initiatives

Intelligent Transport System and Traffic Management

Implement a Free-flow Tolling System at government tolled tunnels and Tsing Sha Control Area by early 2024

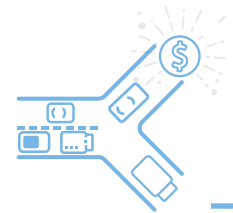


The search functions for walking paths in the all-in-one mobile app "HKeMobility" are fully released, and continue to encourage citizens to "walk more, ride less"

Complete the installation of about 1 200 traffic detectors along major roads and all strategic roads to provide additional real-time traffic information



Take forward the Electronic Road Pricing Pilot Scheme in Central



Continue to introduce pilot real-time adaptive traffic signal systems with sensors for pedestrians and vehicles at five road junctions to help optimise the green times allocated to vehicles and pedestrians



Continue to facilitate trial and use of autonomous vehicles at suitable locations

Encourage public transport operators to introduce new electronic payment systems, having regard to the systems' reliability, user friendliness and efficiency

Establish real-time arrival information system for green minibuses by 2022 and continue to encourage public transport operators to open up their data

Pilot the use of technology to deter improper use of loading and unloading bays, illegal parking and other traffic offences



Develop the crowd management system at Kai Tak Sports Park to facilitate the monitoring of people and vehicle flows during major events



Completed the trial of geo-fencing technology on vehicles, and will continue to study the feasibility of implementing the relevant technology on franchised buses to enhance bus safety



Set up \$1 billion-Smart Traffic Fund to promote research and application of vehicle-related innovation and technology



Develop a Traffic Data Analytics System to enhance traffic management and efficiency



Strategy and Initiatives

Public Transport Interchanges (PTIs)/Bus Stops and Parking

Release real-time information of franchised buses through information display panels at 1 300 covered bus stops or government public transport interchanges by 2021



Install new on-street parking meters to support multiple payment systems (including Faster Payment System and remote payment with a new mobile app "HKeMeter") gradually and provide real-time parking vacancy information

Continue to encourage operators of public car parks to provide real-time parking vacancy information to facilitate motorists' search for parking spaces; and include relevant conditions in land leases and short-term tenancy agreements requiring relevant public car parks to provide real-time parking vacancy information

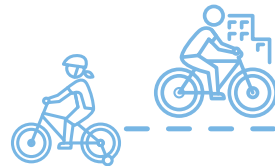
Commission automated parking system pilot projects in batches starting from 2021, to pave the way for wider application in short-term tenancy public car parks and public car parks in government premises and to encourage adoption in public car parks in private developments ^{NEW}

Conduct trials of installing sensors at certain non-metered on-street parking spaces to provide real-time parking vacancy information by 2022 ^{NEW}

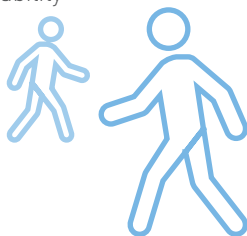


Environmental Friendliness in Transport

Establish "bicycle-friendly" new towns and new development areas



Continue to take forward "Walk in HK", and launch a series of initiatives to encourage people to walk more with an aim to finalise the overall strategy on walkability



Take forward the "Universal Accessibility Programme" to retrofit barrier free access to existing public walkways and those existing walkways which fulfil certain criteria



Take forward new railway projects to reduce roadside air pollutants and greenhouse gases



Pilot use of green technologies in local ferry operation



Implement a pilot scheme for electric public light buses ^{NEW}



Strategy and Initiatives

Smart Airport

Continue to enhance seamless travel experience by using biometrics technology in check-in, boarding pass checkpoint and boarding



Provide hassle-free travel experience for passengers by expanding mobile check-in services to off-airport locations, such as theme parks, hotels, convention centres, transport hubs, etc., and providing baggage pick up services



Facilitate the use of autonomous vehicles in certain places, such as restricted areas



Establish a "Digital Twin" of Hong Kong International Airport to provide a 3D airport model in virtual reality to enable more effective facilities and construction planning as well as better operation management NEW

Apply 5G technologies to provide an independent and reliable wireless network NEW



Commission an automated parking system at the Hong Kong Port of the Hong Kong-Zhuhai-Macao Bridge for private cars from Guangdong and Macao NEW

Application of automation, video analytics and Internet of Things technologies to airport operation NEW



Goals and Next Steps

Upon implementation of the above, people will be able to –



Looking Ahead

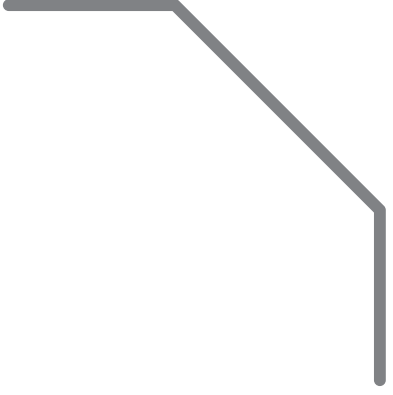
We will continue to explore and formulate initiatives to –

achieve the “ΣSIGMA” vision to bring overarching benefits to the sustainable development of our transport system -

- Safe: Reduces the risk of traffic fatality or injury;
- Informative: Provides useful information to road users;
- Green: Promotes the use of environmentally-friendly modes of transport;
- Mobile: Moves people and goods expeditiously and efficiently, meeting the needs of both users and operators; and
- Accessible: Delivers easily-reachable and reliable transport services

facilitate the achievement of technology advancement and industry development in vehicle-to-everything (V2X) and autonomous vehicles (AVs) and ultimately introduction of connected AVs

enhance walkability and pedestrian wayfinding system



SMART LIVING

Current Status



Over **37 000** free Wi-Fi hotspots
(as at end Jun 2020)

Mobile subscriber penetration rate:
(as at Jan 2020) **283.75%**

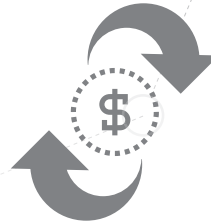
Household broadband penetration rate:
(as at Feb 2020) **93.7%**

Smart Phone Penetration Rate of
persons aged 10 and over:
(2018) **89.8%**

Faster Payment System (FPS) (as at end May 2020)

Registrations: **5 million**

Average daily value of HK\$
HKD transactions: **3 billion**



2018-19 Healthcare figures



Accident & Emergency:
2.16 million
attendances

Specialist Outpatient:
7.9 million
attendances

Primary Care:
6.37 million
attendances

Electronic Health Record Sharing System was launched in Mar 2016

Population aged 65+

2019 (provisional): **1.33** million (18.5% of total population,
excluding foreign domestic helpers)

2039: **2.47** million (32.3% of total population,
excluding foreign domestic helpers)

Strategy and Initiatives

Wi-Fi Connected City

Continue to implement the "Wi-Fi Connected City Programme" to provide free public Wi-Fi service



Implement a pilot project for providing Wi-Fi services at welfare service units ^{NEW}



Digital Payment

Continue to promote the use of Faster Payment System



Implemented a common QR code standard to continue to promote the wider use of mobile retail payments and bring greater convenience to customers and merchants



eID/"iAM Smart" Applications

Introduce an "iAM Smart" one-stop personalised service platform to facilitate residents to use digital government services and conduct commercial transactions

Use the "iAM Smart" to streamline Transport Department's licensing services ^{NEW}

Support for the Elderly and Person with Disabilities

Continue to implement the \$1 billion Innovation and Technology Fund for Application in Elderly and Rehabilitation Care to support trial use, rental or procurement of technology products by elderly and rehabilitation service units



Strategy and Initiatives

Support for Healthcare



Launched the Big Data Analytics Platform under the Hospital Authority's Data Collaboration Lab for facilitating healthcare-related research, and continue to adopt smart hospital initiatives by phases in Hospital Authority hospitals

Commission the Stage Two of the Electronic Health Record Sharing System. Stage Two will expand the sharable scope by including Chinese Medicine information and radiological images, develop sharing restriction features and a Patient Portal as Hong Kong's public health portal, and enhance the system's core functionalities and security/privacy protection

Develop genomic medicine in Hong Kong **NEW**



Explore the use of telehealth, video-conferencing and remote consultation in Hong Kong **NEW**



Explore the use of blockchain technology to enhance traceability of pharmaceutical products, identify sectorial patterns and seasonal patterns on the supply of medicines, and facilitate efficient and effective recalls of medicines **NEW**



Recreation, Sports and Leisure, and Culture

Develop New Intelligent Sports and Recreation Services Booking and Information System **NEW**



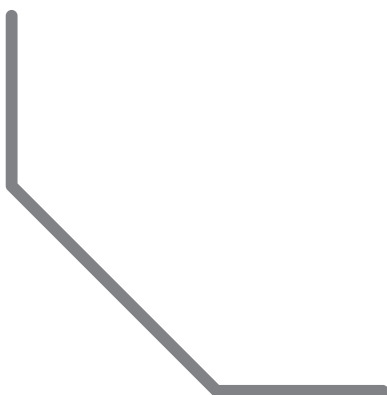
Develop Smart Library System **NEW**



Launch a trial scheme on the application of technology in enhancing location tracking of hikers at remote areas of weak or no mobile network coverage **NEW**



NEW New initiative after release of *Blueprint* in 2017



Goals and Next Steps

Upon implementation of the above, people will be able to –



Looking Ahead

We will continue to explore and formulate initiatives to promote –

wider use of digital identity across the public and private sectors and in the community

wider use of mobile payments and bring greater convenience to customers and merchants

healthy living and ageing in different settings, including hospitals, care homes and ultimately in the community



SMART ENVIRONMENT

Current Status

2018: **66%** of carbon emissions are from electricity generation

2018: Carbon intensity had been reduced by **↓36%** compared with 2005



2018: **1.78 million** tonnes municipal solid waste recovered



Achieved the target to reduce the electricity consumption of government buildings by **↓5%** from 2015-16 to 2018-19

Strategy and Initiatives

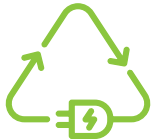
Climate Action Plan 2030+

Implement various decarbonisation measures to reduce carbon intensity by between 65% and 70% by 2030 compared with the 2005 level, strive to achieve carbon neutrality before 2050 ^{NEW}



Phase down coal-fired electricity generation gradually and replace with natural gas and non-fossil fuel sources. Coal as a proportion of the fuel mix will be reduced

Apply renewable energy on a wider and larger scale based on mature and commercially available technologies with the public sector taking the lead



Further promote energy efficiency and conservation in the community with particular focus on buildings



Implement other measures to achieve carbon emission reduction by phases

Green and Intelligent Buildings, and Energy Efficiency

Promote retro-commissioning and building-based smart/IT technologies

Install LED lamps in public lighting systems progressively under the LED Public Lighting Replacement Programme starting from 2017-18 and encourage retrofitting LED lighting for existing government buildings



Continue to include requirements, such as green building design, provision of smart water meter system, electric vehicle charging facility and real-time parking vacancy information for new land sale sites in Kowloon East, with a view to developing a green and smart community



Implement a pilot subsidy scheme to promote installation of electric vehicle charging-enabling facilities in car parks of existing private residential buildings ^{NEW}



Adopt advanced sludge pre-treatment technology for turning waste to energy ^{NEW}

^{NEW} New initiative after release of *Blueprint* in 2017

Strategy and Initiatives

Waste Management

Implement a pilot programme on smart recycling system for enhancement of community recycling **NEW**



Pollution Monitoring

Use remote sensing devices to monitor air pollution



Use unmanned vessels to monitor water quality in reservoirs **NEW**



Alleviate noise impact affecting new residential units by incorporating noise mitigation designs through preventive planning **NEW**

Undertake pilot project of real-time phytoplankton taxa monitoring system **NEW**



Environmental Hygiene

Explore the use of new facilities, such as smart lampposts, or application of technologies for enhancing environmental hygiene



Launch the "smart toilet" pilot programme and explore application of technologies in public toilets **NEW**



Launch a rodent control trial scheme using Internet of Things sensors and explore application of technologies to improve pest control **NEW**

Goals and Next Steps

Upon implementation of the above, people will be able to –

- live in greener buildings with various smart and energy saving features
- use technology applications in efficient power consumption and energy conservation
- enjoy better indoor and outdoor air quality
- reduce daily waste at home and workplace



Looking Ahead

We will continue to explore and formulate initiatives to –

adopt new green technologies when they become commercially available

create a low carbon, more sustainable environment for the people

optimise use of city resources, including waste reduction, reuse and recycling



SMART PEOPLE

Current Status

12 years' free primary and secondary education

About **90%** of the half-day programmes of kindergartens joining the kindergarten education scheme are free

60% of senior secondary students studied one or more STEM-related elective subjects in 2019/20 and all have to study Mathematics as a core (i.e. compulsory) subject

8 public universities funded by Government through the University Grants Committee (UGC)

86 867 students studying UGC-funded undergraduate programmes,
30 580 (35%) of them studied STEM-related programmes in 2019/20

11 251 students studying UGC-funded taught and research postgraduate programmes,
5 412 (48%) of them studied STEM-related postgraduate programmes in 2019/20



R&D funding

Gross domestic expenditure on R&D (GERD) in 2018:

HK\$ **24,497 million**

[+ 10% when compared with 2017 (HK\$22,213 million)]

About **62 000** civil servants attended various I&T-related training in 2019-20



Strategy and Initiatives

Nurturing Young Talent

Organised trainings on science, technology, engineering and mathematics (STEM) education for curriculum coordinators, and continue to encourage them to implement more STEM-related classes and activities

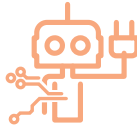
Provide enhanced information technology (IT) training to secondary school students outside normal curriculum through provision of funding for all publicly-funded secondary schools to implement the IT Innovation Lab in Secondary Schools programme NEW

Enhance research and development capability through collaboration with renowned institutions in other jurisdictions



Encourage industry to hire science, technology, engineering and mathematics (STEM) graduates for research and development through the "Research Talent Hub"

Attract and retain more I&T professionals, especially in technological areas such as biotechnology, data science, artificial intelligence, robotics and cyber security etc.



Support the pilot of a common on-line platform by the Joint Universities Computer Centre using blockchain technology to facilitate verification of tertiary education qualifications NEW

Provide Youth Internship Programme in I&T Industries in the Guangdong-Hong Kong-Macao Greater Bay Area NEW

Innovation and Entrepreneurial Culture

Provide financial and non-financial support to young entrepreneurs and start-ups to build a stronger I&T culture



Expand incubation programmes at Hong Kong Science Park and Cyberport Smart-Space



Attract venture capital fund to support the development of I&T start-ups in Hong Kong



Continue to implement the STEM Internship Scheme NEW

Continue to strengthen training on application of technology for civil servants



Goals and Next Steps

Upon implementation of the above, Hong Kong will be able to –



Looking Ahead

We will continue to explore and formulate initiatives to –

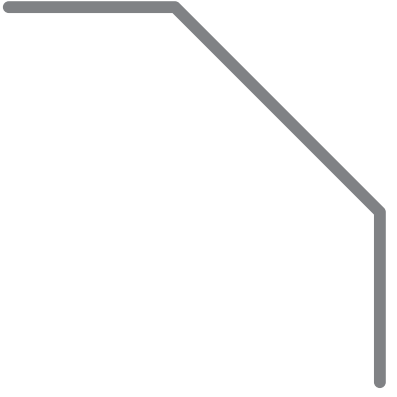
nurture a highly adaptive population to embrace changes in technology, especially among the younger generation

build a knowledge-based society to support future development of I&T

SMART PEOPLE

21





SMART GOVERNMENT

Current Status

data.gov.hk/en 

Public Sector Information Portal:

over **4 180** unique datasets,

1 390 application programming interfaces (APIs)

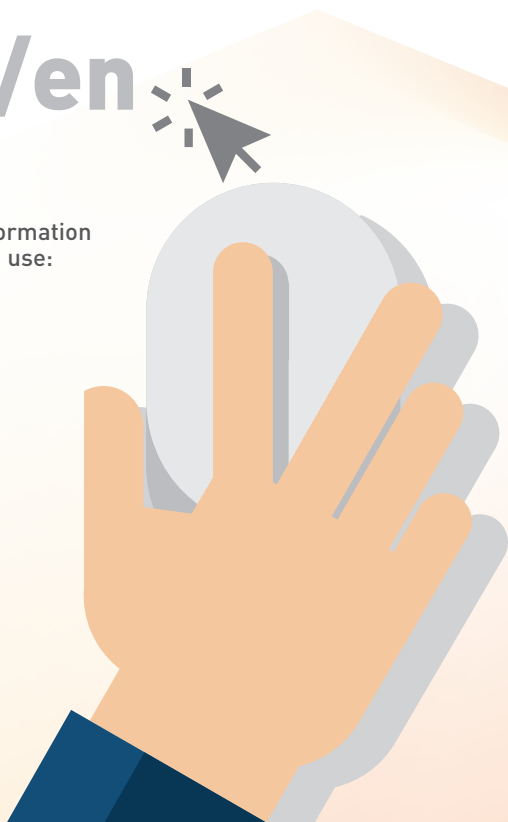
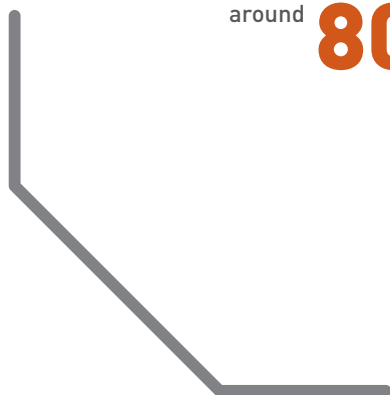
2018-19 government information and communications technology (ICT) expenditure estimate **HK\$ 10 billion**

www.gov.hk/en 

GovHK

the one-stop portal of the Government making information and services of the public sector easier to find and use:

around **800** e-Services



Strategy and Initiatives

Open Data

Continue to promote the opening up of data from public and private sector under the open data policy announced in 2018



Smart City Infrastructure

Gear up Hong Kong for commercial launch of the fifth generation (5G) services and applications in 2020



Adopt "iAM Smart" Platform common login and enhance e-services with the help of artificial intelligence, chatbot and big data analytics



Implement the Multi-functional Smart Lampposts pilot scheme to facilitate collection of real-time city data to enhance city management and other public services



Use a new big data analytics platform for real-time data transmission and sharing among government departments

Adopt public cloud services for government departments to deliver efficient and agile e-services



Revamp the government cloud infrastructure platform to enable digital government services delivery through collaboration and partnership among government departments, IT service providers and other third party entities

Develop the Electronic Submission Hub for processing building plans NEW



Enhance the Government's cyber security capability to address new security risks, facilitate collaboration among stakeholders to promote awareness and incident response capability in the community



Develop a Government Wide Internet of Things Network (GWIN) based on various Low Power Wide Area Network (LPWAN) technologies to enhance city management NEW



NEW New initiative after release of *Blueprint* in 2017

Strategy and Initiatives

Adoption of Technology

Continue to promote the Smart Government Innovation Lab to invite technology solutions and product suggestions from IT sector for enhancing public services and addressing city challenges ^{NEW}



Launch City I&T Grand Challenge ^{NEW}



Continue to promote E&M InnoPortal to facilitate matching of pain-points and needs of the Government with I&T solutions from start-ups and research and development institutes ^{NEW}

Continue to promote adoption of technology by government departments to improve public services through dedicated funding

Implement e-licensing for all licensing applications under the "Be the Smart Regulator" Programme, to digitise most licensing applications before mid-2022, and reform government services involving applications and approvals under the "Streamlining of Government Services" Programme ^{NEW}



Promote digitisation of works supervision system to strengthen supervision and management of capital works projects ^{NEW}

Mandated the adoption of Building Information Modelling (BIM) in major government capital works projects starting from 2018, develop BIM standards and continue to provide assistance to the construction industry on BIM adoption

Employ Building Information Modelling - Asset Management/Facility Management (BIM-AM/FM) Platform for improvement of building facility management ^{NEW}

Apply smart water supply initiatives, including Water Intelligent Network to monitor water loss in the fresh water distribution network and Automatic Meter Reading system to enhance customer services, etc. ^{NEW}

Introduce smart elements in prisons, using innovation and technology to modernise correctional facilities ^{NEW}

Employ innovation and technology to enhance customs clearance efficiency, law enforcement effectiveness, trade facilitation and foster economic development through "Smart Customs Blueprint" ^{NEW}

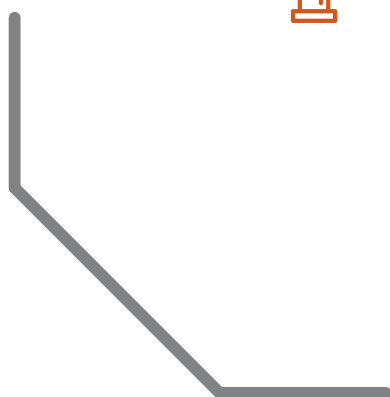


CUSTOMS



Enhance core immigration services with the Next Generation Application and Investigation Easy Systems ^{NEW}

Enhance emergency ambulance service through streamlining the handling, replenishment and procurement process of dangerous drugs with the use of Radio-Frequency Identification tracking system and Internet of Things ^{NEW}





Wider use of advanced technologies for investigation of water seepage in buildings ^{NEW}

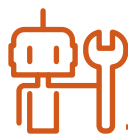


Implement smart sewerage monitoring system ^{NEW}

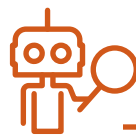


Develop an automated system for concrete cube testing ^{NEW}

Apply robotics technology to facilitate the maintenance of underground drainage system ^{NEW}



Apply robotics technology to facilitate in-line inspection of water mains ^{NEW}



Adopt smart robotic underwater vehicle for ensuring safe and effective maintenance of wet wells at sewage treatment plants ^{NEW}



Adopt new technologies for signboard control with a view to protecting public safety ^{NEW}

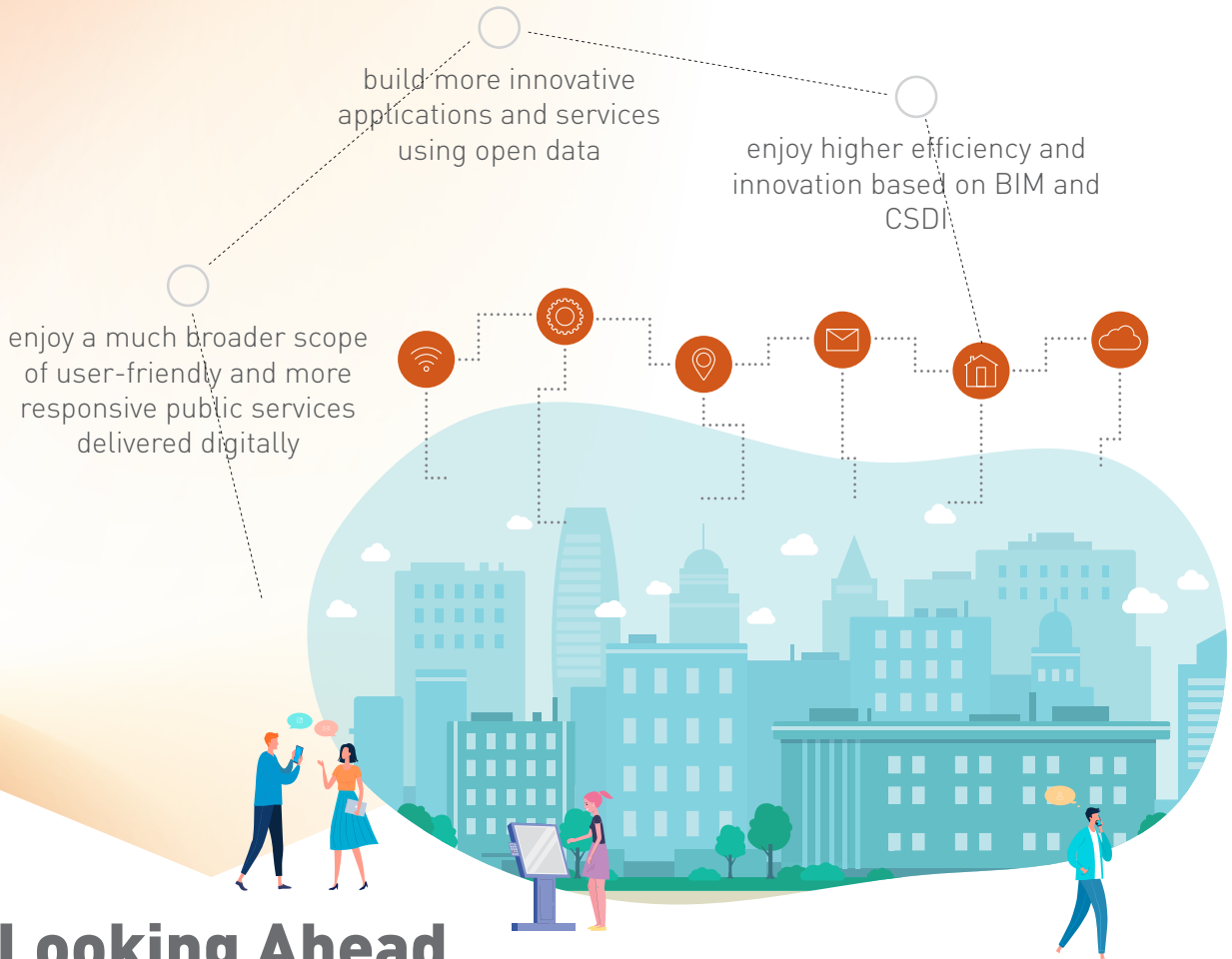
Develop an information management system to maintain and facilitate possible future uses of the data collected under the Cash Payout Scheme ^{NEW}



NEW New initiative after release of *Blueprint* in 2017

Goals and Next Steps

Upon implementation of the above, people will be able to –



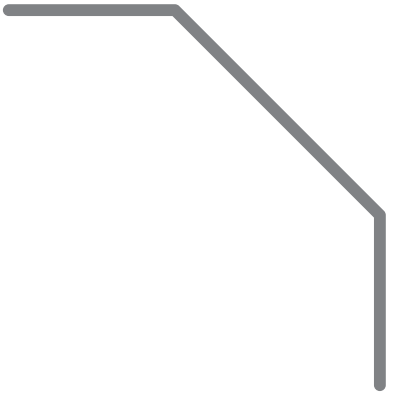
Looking Ahead

We will continue to explore and formulate initiatives to –

encourage open data in public and private sectors

improve public services through adoption of technology, including local innovations and products





SMART ECONOMY

Current Status

GDP in 2018: HK\$ **2,843 billion**

GDP per capita in 2018: HK\$ **381,544**

GDP

Value added of the Four Key Industries in 2018

Trading and logistics (21.2%) HK\$ **571.0 billion**

Financial services (19.7%) HK\$ **532.8 billion**

Professional services and other producer services (12.0%) HK\$ **322.8 billion**

Tourism (4.5%) HK\$ **121.0 billion**

Credit cards

In 2019, each Hong Kong citizen had on average **2.6** credit cards



2.3 million (HK\$2.1 billion) daily transactions in 2019

Regulators have introduced regulatory sandboxes to qualified corporations to try out Fintech innovations

Internet Banking

14 million accounts as of 31 Dec 2018

over HK\$ **9 trillion** monthly transactions in 2018

Strategy and Initiatives

Strengthen the current pillars by leveraging I&T: Fintech

Continue to promote Fintech, including the applications of Distributed Ledger Technology in different areas, such as trade finance, cross-border connectivity and insurance policy authentication



Continue to keep in view the operations of virtual banks after they commence business, the response of customers and the impact of virtual banks on the stability of the local banking system



Continue to monitor the development and adoption of Application Programming Interface (API) by the banking sector and technology companies

Review the operation of Fast Track, which provides a dedicated queue for new authorization applications from applicants using solely digital distribution channels, in light of implementation experience and industry development

NEW

Develop eMPF Platform for administration of the Mandatory Provident Fund Schemes **NEW**



Continue to implement the Banking Made Easy Initiative



Strengthen the current pillars by leveraging I&T: Smart Tourism

Extend the tourist facilitation landing pages to other boundary control points progressively



Enrich tourists' experiences in Hong Kong using Information and Communications Technology and virtual images



Enhance tourists' experiences through smart airport, Wi-Fi Connected City programme and smart lampposts



Encourage the tourism trade to leverage innovation and technology for enhancing its competitiveness

Enhance Hong Kong Tourism Board's smart tourism platforms **NEW**

Strategy and Initiatives

Strengthen the current pillars by leveraging I&T: LawTech

Develop an online platform to provide efficient and cost-effective online dispute resolution and deal-making services ^{NEW}



Develop new economic pillars: Promote R&D and re-industrialisation

Plan for the setting up of key technology collaborative platforms and bring in internationally-renowned universities, research and development institutes and I&T companies

Provided enhanced tax deduction for qualifying expenditure incurred by enterprises on research and development (R&D) since 2018-19 to incentivise companies to increase investment in technological R&D



Monitor implementation of the pro-innovation government procurement policy

Completed Data Technology Hub in Tsueng Kwan O Industrial Estate; and complete the Advanced Manufacturing Centre by 2022

Collaborate with Shenzhen to develop the Hong Kong-Shenzhen Innovation and Technology Park at Lok Ma Chau Loop for I&T enterprises, universities and research and development centres from Hong Kong, overseas and the Mainland. Strive to complete the first research and development building by end 2024



Facilitate the Development of Innovation and New Economy

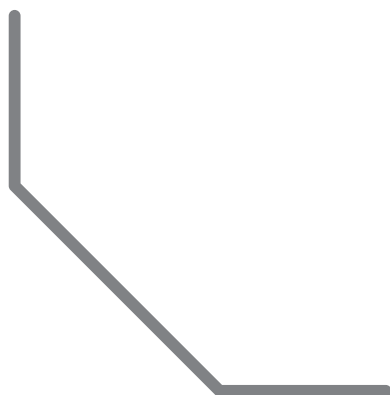
Review existing legislation and regulations so as to remove or update provisions that impede innovation and new economic development

Encourage local enterprises/organisations to adopt technological services or solutions to enhance operational efficiency through the Technology Voucher Programme ^{NEW}



Explore the use of new technologies and emerging standards to facilitate identification and verification of companies ^{NEW}

^{NEW} New initiative after release of *Blueprint* in 2017



Goals and Next Steps

Upon implementation of the above, Hong Kong will be able to –

become a preferred location for consideration of technology investment

be perceived as an innovative and technologically advanced tourist destination

position itself as a viable and attractive location to fully develop innovative business ideas



Looking Ahead

We will continue to explore and formulate initiatives to –

enhance the overall digital transformation in the business community, particularly in areas of the technology-driven economy like Fintech and re-industrialisation

further develop our I&T ecosystem to attract more start-ups and investors from other jurisdictions

attract more leading talents and investments to enhance our city's economic vibrancy



SMART VILLAGE PILOTS

We will explore the following smart village pilot initiatives in the rural areas:

install relevant facilities at village offices and use of e-payment for provision of telehealth services for the elderly living in remote areas **NEW**

provide public Wi-Fi services, enhance telecommunication coverage and capacities for detecting illegal dumping, wild animals and flooding, and strengthening security in rural villages **NEW**

use smart traffic system for certain roads to improve road situation **NEW**

use robotics and artificial intelligence to assist in early detection of hill fire in country parks **NEW**



NEW New initiative after release of *Blueprint* in 2017

GOVERNANCE

The high-level, inter-departmental Steering Committee on Innovation and Technology chaired by the Chief Executive has been set up and holds regular meetings to steer development of innovation and technology and smart city projects, and review progress of relevant initiatives. Members of the Steering Committee include the Chief Secretary for Administration, Financial Secretary, most of the Directors of Bureau and relevant Permanent Secretaries and Heads of Departments.

The Innovation and Technology Bureau set up a Smart City Office for coordinating smart city projects across different government departments and public and private organisations, and monitoring project progress and effectiveness.

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December 2020

