# 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.



## 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



Develop Common Spatial Data Infrastructure and Establish Geospatial Lab Enhance "iAM Smart" applications to promote wider use of digital payments and remote onboarding in the financial and other industries (



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





NEW New initiative after release of *Blueprint* in 2017

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## **Current Status**

**Over** 

#### **Over** passenger journeys on public transport every day

1 2

with railway being the backbone (2019 figure)

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

## **Smart Airport**

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🔆 smart check-in kiosk

🔆 self-bag drop

o e-Security Gates

o indoor wayfinding



**ó** MyTAG

Roads are dense with 🧹

licensed vehicles for every kilometre of road on average (as at end 2019)

SMART MOBILITY 5 • • • •

#### 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 Take forward the Electronic Road Pricing Pilot Scheme about 1 200 traffic detectors along major roads and all in Central strategic roads to provide additional real-time traffic information LIVE Continue to facilitate trial Encourage public transport and use of autonomous operators to introduce vehicles at suitable new electronic payment locations systems, having regard to the systems' reliability, user friendliness and efficiency Pilot the use of technology Develop the crowd to deter improper use of management system at Kai loading and unloading bays, Tak Sports Park to facilitate illegal parking and other the monitoring of people traffic offences and vehicle flows during major events ----..... Set up \$1 billion-Smart Develop a Traffic Data Traffic Fund to promote Analytics System to enhance research and application of traffic management and vehicle-related innovation efficiency 🔊 and technology 🔤

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SMART MOBILITY

## **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

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

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

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

NEW New initiative after release of *Blueprint* in 2017

Release real-time Install new on-street **Public Transport** information of franchised parking meters to support buses through information multiple payment systems Interchanges display panels at 1 300 (including Faster Payment covered bus stops or System and remote (PTIs)/Bus Stops aovernment public payment with a new mobile transport interchanges by app "HKeMeter") gradually and Parking 2021 and provide real-time parking vacancy information Continue to encourage operators of public car parks to provide real-Commission automated time parking vacancy information to facilitate motorists' search for parking system pilot projects in batches starting parking spaces; and include relevant conditions in land leases and short-term tenancy agreements requiring relevant public car parks from 2021, to pave the to provide real-time parking vacancy information 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 ໜ Conduct trials of installing Establish "bicycle-friendly" Environmental sensors at certain nonnew towns and new metered on-street parking development areas **Friendliness in** spaces to provide real-time parking vacancy information Transport by 2022 ໜ Continue to take forward Take forward the "Universal Take forward new railway 'Walk in HK", and launch Accessibility Programme" to projects to reduce a series of initiatives to retrofit barrier free access roadside air pollutants and encourage people to walk to existing public walkways greenhouse gases more with an aim to finalise and those existing walkways the overall strategy on which fulfil certain criteria walkability Pilot use of green Implement a pilot scheme technologies in local ferry for electric public light operation buses 🔤

#### 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 8

SMART MOBILITY

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

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



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

Check-in

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

Application of automation, video analytics and Internet of Things technologies to airport operation (1990)



#### **Goals and Next Steps** Upon implementation of the above, people will be able to – enjoy better traffic planning and management through enhanced plan théir journeys more use of data analytics efficiently with real-time traffic information enjoy more envýronmental friendly enjoy easy and efficient travel transport modes, including use of with smart airport cleaner fuel to improve air quality and address other environmental ćoncerns enjoy a pedestrian-friendly environment A -----

## **Looking Ahead**

We will continue to explore and formulate initiatives to –

achieve the "∑SIGMA" 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

## **Current Status**



#### free Wi-Fi hotspots Over ( (as at end Jun 2020)

Mobile subscriber penetration rate: (as at Jan 2020)

Household broadband penetration rate: (as at Feb 2020)

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

283.75%

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



HKD transactions:

#### 2018-19 Healthcare figures





Specialist Outpatient: million attendances



Electronic Health Record Sharing System was launched in Mar 2016

#### Population aged 65+

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2019 (provisional):



2.4

million (18.5% of total population, excluding foreign domestic helpers)

2039:

million (32.3% of total population, excluding foreign domestic helpers)

SMART LIVING 11 . . . . . . . . . . • • • •



#### Support for Healthcare

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

Develop genomic medicine



Recreation, Sports and Leisure, and Culture + HOSPITAL

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

Explore the use of

telehealth, video-

conferencing and remote

Develop New Intelligent

Sports and Recreation

Services Booking and

Information System 🔤

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

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consultation in Hong Kong

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

Develop Smart Library System 🐵



NEW New initiative after release of *Blueprint* in 2017



# SMART ENVIRONMEN



Achieved the target to reduce the electricity consumption of government buildings by

from 2015-16 to 2018-19







## 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**

**1 2** years' free primary and secondary education

of the half-day programmes of kindergartens joining the kindergarten education scheme are free

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



About

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

SMART PEOPLE

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**36 867** studer progra **30 580** (35%) in 201

students studying UGC-funded undergraduate programmes,

(35%) of them studied STEM-related programmes in 2019/20

students studying UGC-funded taught and research postgraduate programmes,

(48%) of them studied STEM-related postgraduate programmes in 2019/20

#### **R&D** funding

HK\$

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

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

About

civil servants attended various I&T-related training in 2019-20

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## **Strategy and Initiatives**



NEW New initiative after release of *Blueprint* in 2017

## **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 GOVERNMENT

### **Current Status**

# data.gov.hk/en 🔆

## Public Sector Information Portal: over **4 180** unique datasets,

**1 390** application programming interfaces (APIs)

. . . . . . . . . . . . . . .

0 billion

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

# www.gov.hk/en

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





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## **Goals and Next Steps**

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





# SMART ECONOMY



Strengthen the current pillars by leveraging I&T: Fintech

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

Strengthen the

leveraging I&T:

Smart Tourism

experiences through smart

City programme and smart

airport, Wi-Fi Connected

Enhance tourists'

lampposts

current pillars by

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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

> 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

Continue to implement the Banking Made Easy Initiative

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

Schemes 🔤

Develop eMPF Platform

for administration of the

Mandatory Provident Fund



Encourage the tourism trade to leverage innovation and technology for enhancing its competitiveness Enrich tourists' experiences in Hong Kong using Information and Communications Technology and virtual images

Enhance Hong Kong Tourism Board's smart tourism platforms @



NEW New initiative after release of *Blueprint* in 2017





## SMART VILLAGE PILOTS

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



# 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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