For discussion
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Legislative Council
Subcommittee on Matters Relating to the Development of Smart City

Updates on Smart City Development of Hong Kong

PURPOSE

This paper briefs Members on the latest progress of the Government in promoting Hong Kong's smart city development.

SMART CITY BLUEPRINT FOR HONG KONG

2. The Government released the Smart City Blueprint for Hong Kong in December 2017, setting out over 70 initiatives under six smart areas, with a view to addressing the challenges of city management and improving people's livelihood through adoption of innovation and technology (I&T). The Smart City Blueprint for Hong Kong 2.0 (Blueprint 2.0) released subsequently in 2020 further put forth over 130 initiatives.

3. Since the release of the Blueprint 2.0, bureaux/departments (B/Ds) have been committed to promoting and implementing the relevant smart city initiatives. Currently, the majority of which have been completed or are ongoing (see **Annex 1**). To facilitate citizens' understanding of the work in developing Hong Kong into a smart city, we have organised seasonal roving exhibitions in various districts and set up pavilion at the InnoEX. We also provide updates on the latest progress of various initiatives through our dedicated Smart City Portal (www.smartcity.gov.hk) and at meetings of the relevant Panels of the Legislative Council (LegCo).

Annex 1

HONG KONG INNOVATION AND TECHNOLOGY DEVELOPMENT BLUEPRINT

4. The Hong Kong Innovation and Technology Development Blueprint (I&T Blueprint) promulgated in December 2022 has established a clear development path and a systematic strategic planning for Hong Kong's I&T development, and charted Hong Kong in moving full steam towards the vision of an international I&T centre. Along the four development directions, the I&T Blueprint has set out eight major strategies with a total of 42 recommendations focusing on 16 objectives. Among them, under the development direction of "to promote digital economy development and develop Hong Kong into a smart city", the I&T Blueprint has put forth six recommendations, which are:

(i) to expedite the building of a smart government to enhance the efficiency of government services;
(ii) to facilitate spatial data applications;
(iii) to accelerate the development of new digital infrastructure;
(iv) to expand the application of I&T to promote smart living;
(v) to accelerate the development of financial technology; and
(vi) to build a secure cyber environment.

5. The strategies and priorities of smart city development in the I&T Blueprint lay the foundation and provide a clear direction for our ongoing efforts in promoting the Hong Kong's smart city development. The following sections briefly describe the progress of work in each major smart city areas.

WORK PROGRESS

To expedite the building of a smart government to enhance the efficiency of government services

6. B/Ds have already achieved the target of digitalising all licensing and government services involving application and approval by mid-2024. On the other hand, we are pressing ahead with the full adoption of "iAM Smart" by all departments by end-2025 to provide citizens with the option of one-stop electronic services, thereby providing "single portal for online government services".

7. On the other hand, the Government has completed e-government audit on a total of 73 B/Ds to review the information technology (IT) systems

and their services, and recommended digital government initiatives that could leverage technologies to enhance public services. B/Ds will launch over 110 digital government and smart city initiatives progressively from 2024 to 2025 (see **Annex 2**), including:

Annex 2

(i) application of artificial intelligence and chatbot technologies to improve government hotline services;
(ii) application of data analytics, geospatial analysis and visualisation dashboard technologies to improve service management;
(iii) use of blockchain technology to issue and verify certificates or licences electronically; and
(iv) adoption of "iAM Smart" and "Consented Data Exchange Gateway" to achieve "single portal for online government services" and facilitate data sharing among B/Ds, etc..

To facilitate spatial data applications

8. The Geospatial Lab established by the Development Bureau (DEVB) has opened to public since July 2021. So far, over 400 activities such as competitions, workshops and talks have been organised, to harness the creation, analysis and application of spatial data. DEVB has also launched the Common Spatial Data Infrastructure Portal (CSDI Portal) (www.csdi.gov.hk). As of June 2024, the CSDI Portal provides around 900 spatial datasets from over 60 government departments for free downloading and use by the public.

9. Meanwhile, the PSI Portal (data.gov.hk) also provides around 5 400 datasets opened up by 79 B/Ds and 39 public and private organisations, and 2 200 application programming interfaces on 19 categories, including real-time meteorological data, digital maps and real-time arrival data of all franchised bus lines, green minibuses and MTR lines for free use by various sectors.

To accelerate the development of new digital infrastructure

10. More than 380 online services provided by the Government and public and private organisations are accessible through "iAM Smart". Over 2.7 million Hong Kong residents have registered for "iAM Smart", with a daily average of over 100 000 logins to use "iAM Smart". The Government is now driving the comprehensive upgrade of the "iAM Smart" platform[1].

[1] For details, please refer to the discussion paper of the LegCo Panel on Information Technology and Broadcasting (ITB Panel) for the meeting on 8 July 2024 – "Progress on the Enhancement of 'iAM Smart'" (https://www.legco.gov.hk/yr2024/english/panels/itb/papers/itb20240708cb1-903-2-e.pdf)

The target is to provide better service integration, enhance user experience and develop more services that are convenient and beneficial to the public and businesses in phases from 2024, as well as to drive the full adoption of "iAM Smart" by all government online services by 2025 so as to realise the goal of "single portal for online government services".

11. Besides, the Office of the Government Chief Information Officer (OGCIO) will set up the "Digital Corporate Identity" Platform[2], akin to the corporate version of "iAM Smart". This platform will facilitate corporations to undergo corporate identity authentication and corporate signature verification processes when they use the e-government services or conduct online business transactions in a secure, convenient and efficient manner, simplifying the complicated procedures and accelerating their digital transformation.

12. Under the Multi-functional Smart Lampposts Pilot Scheme (Pilot Scheme), smart lampposts with smart devices have been installed in four urban locations across the territory with higher pedestrian and vehicular flow. The purpose of the installation is to collect real-time city data such as air quality and traffic flow as well as to support the development of digital infrastructure for 5G services. The Pilot Scheme was completed in December 2023. At present, over 400 Multi-functional Smart Lampposts are in operation. Smart lamppost will be a standard infrastructure in new development areas under planning or construction in future to facilitate B/Ds to install suitable smart devices and applications in accordance with their operational needs for enhancing city management and developing innovative services. As for developed areas, we will replace existing lampposts with smart lampposts in suitable urban locations according to the requirements of individual departments.

13. To provide ongoing support to the needs of smart city and related digital infrastructure, we have reserved land for I&T purpose in the San Tin Technopole, where part of it can be used for commercial development and government data centre. On the other hand, the Government invited expressions of interest for the development at the "spade-ready site" Sandy Ridge (and its nearby land with development potential) for data centres and related industries in end-June 2024.

14. Cyberport is making preparation for the establishment of the Artificial Intelligence Supercomputing Centre (AISC). The first phase of

[2] For details, please refer to the discussion paper of the LegCo ITB Panel for the meeting on 13 May 2024 – "Setting up of the 'Digital Corporate Identity' Platform" (https://www.legco.gov.hk/yr2024/english/panels/itb/papers/itb20240513cb1-552-2-e.pdf)

facility is expected to commence operation in the second half of 2024. It is expected that the AISC will be able to provide a computing power of 3 000 petaFLOPS in early-2026 at the earliest, which should broadly meet the anticipated demand for supercomputing services in the short-to-medium term.

To expand the application of I&T to promote smart living

15. As of April 2024, the Innovation and Technology Fund for Application in Elderly and Rehabilitation Care (I&T Fund) of the Social Welfare Department (SWD) has approved grants totaling about $680 million, subsidising about 1 900 eligible elderly and rehabilitation service units to procure, rent and trial over 19 000 technology products (such as ultra-low beds for medical and nursing care and intelligent anti-wandering systems). In 2024-25, the Government has injected an additional $1 billion into the I&T Fund and expanded its scope to cover gerontechnology products suitable for household use, to enable procurement of suitable technology products for lending to elderly persons, persons with disabilities and their carers for use at home. This will improve the quality of life of the care recipients and relieve the pressure of the carers.

16. Besides, SWD extended the scope of Community Care Service Voucher in September 2023 to cover rental of assistive technology products, allowing eligible frail elderly persons to rent such products, including aids for daily living, aids for walking or mobility transfer, and aids for bathing or toileting, from Recognised Service Providers.

17. To further promote digital inclusion, the Social Innovation and Entrepreneurship Development Fund (SIE Fund) would allocate $100 million to implement a territory-wide digital inclusion programme for the elderlies by batches in the coming three years to set up community-based helpdesks at suitable locations to provide regular and fixed-point training on digital technologies and technical support to elderlies aged 60 or above, particularly the singleton or doubleton elderlies. Besides, OGCIO has launched the Information and Communications Technology Outreach Programme for the Elderly (Outreach Programme) since 2014. Non-profit-making elderly services organisations commissioned by OGCIO have made visits to elderly people across the territory and organised various activities to enable the elderly to experience digital living and encourage them to use more digital technology. Since 2021, the Outreach Programme has set up mobile outreach service stations on a pilot basis at various community locations frequently visited by the elderly, and proactively introduce to the elderly useful mobile apps and answer their questions about using

smartphones. Having regard to the situations of online and mobile phone scams, special efforts have also been made to introduce anti-fraud information and provide safety tips for using smartphones to the elderly.[3]

To accelerate the development of financial technology

18. Since the launch of the Faster Payment System (FPS) in September 2018, the FPS has recorded 14.7 million registrations and over 1 706 million transactions so far, which worth around HK$15,000 billion and RMB 370 billion.

To build a secure cyber environment

19. The revised Government IT Security Policy and Guidelines promulgated by OGCIO in April 2024 strengthened security control measures in various areas including the incident reporting mechanism. To effectively protect the Government's information systems and data assets, classified protection of IT security was also enhanced to mandate all B/Ds to adopt a risk-based approach to assess the classifications of their information systems and implement corresponding tiered security control measures according to the classifications.

20. Apart from that, OGCIO will enhance B/Ds' usual security risk assessment and audits for information systems, regular network monitoring, spot checks, compliance audits and staff training, so as to strengthen the abilities to monitor and safeguard for government information systems. Besides, OGCIO will take the lead in organising cyber security attack and defence drills in to test and strengthen the information systems security of Government departments and public bodies.

21. On the other hand, the Government announced in early-July 2024 the proposed legislative framework for enhancing protection of computer systems of critical infrastructures, and will introduce the bill into the LegCo within this year, for the purpose of requiring critical infrastructure operators to fulfil statutory obligations and take appropriate measures to strengthen the security of their computer systems, thereby enhancing the overall computer system security in Hong Kong.

[3] For details, please refer to the discussion paper of the Legislative Council Panel on Information Technology and Broadcasting on 3 June 2024 – "Promoting Digital Inclusion" (https://www.legco.gov.hk/yr2024/english/panels/itb/papers/itb20240603cb1-669-3-e.pdf)

CONTINUE TO OPTIMISE SMART CITY DEVELOPMENT

22. As mentioned above, we have been actively promoting the development of smart city in Hong Kong from different areas through multi-pronged policies and measures. According to the Smart City Index 2024 survey [4] published in April this year by the International Institute for Management Development (IMD) in Lausanne, Switzerland, a "smart city" is defined as "an urban setting that applies technology to enhance the benefits and diminish the shortcomings of urbanisation for its citizens". Hong Kong has ranked the 20th out of the 142 cities globally, and 6th among the Asian cities. See **Annex 3** for the top 20 cities in the Smart City Index 2024. Overall speaking, Hong Kong received an "A" rating in the "Smart City Rating", with "AAA" and "BBB" ratings in the "Technologies" and "Structures" pillars respectively.

Annex 3

23. Local residents who participated in the Smart City Index 2024 survey generally considered that Hong Kong performed excellent in the "Technologies" aspects and were very satisfied with the availability of technology-related services and facilities; among the 20 indicators, 18 received scores higher than the average or even close to the maximum score (such as internet speed and free WiFi service, online accessibility to jobs and public service information). Respondents were more concerned about the penetration of applications such as bike-sharing, car-sharing and online voting. On the "Structures" aspects, respondents were more concerned about issues such as Hong Kong's development of green spaces, expansion of cultural activities, provision of affordable housing, and air pollution.

24. We will take into account the valuable opinions from the stakeholders and continue to join hands with relevant B/Ds, to further make good use of I&T to improve various aspects of lives, such that our residents can better perceive the benefits brought about by I&T and smart city in their daily lives.

CONCLUSION

25. Promoting smart city and digital government development in Hong Kong is one of the priorities of the current-term Government. We will

[4] The Smart City Index surveyed local residents of a city to evaluate the city's performance in five key areas under the two pillars of "Technologies" and "Structures", namely health and safety, mobility, activities, opportunities (work and school), and governance.

continue to implement more smart city initiatives to facilitate the public and businesses in accordance with the development strategies, objectives and recommendations set out in the I&T Blueprint.

ADVICE SOUGHT

26. Members are invited to note the content of this paper.

Innovation, Technology and Industry Bureau
Office of the Government Chief Information Officer
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Annex 1

Progress of Smart City Initiatives in Smart City Blueprint for Hong Kong 2.0

(As of end-June 2024)

- Smart City Blueprint for Hong Kong 2.0 (Blueprint 2.0) has set out over 130 smart city initiatives under six smart areas, namely "Smart Mobility", "Smart Living", "Smart Environment", "Smart People", "Smart Government" and "Smart Economy". Blueprint 2.0 has also included a chapter on "Use of I&T in Combating COVID-19" and has put forth the idea of smart village pilots.

- Various B/Ds have been actively pursuing and implementing the initiatives, the majority of which have been completed or are ongoing. The details are tabled below[5]:

Smart areas	Smart initiatives completed or ongoing	Smart initiatives in progress	Total
Smart Mobility	28	4	**32**
Smart Living	15	1	**16**
Smart Environment	20	0	**20**
Smart People	12	0	**12**
Smart Government	31	0	**31**
Smart Economy	20	0	**20**
Total	**126**	**5**	**131**
Use of I&T in Combating COVID-19	**13**	**0**	**13**

- Smart initiatives in progress include: taking forward the Electronic Road Pricing Pilot Scheme in Central, developing the crowd management system at Kai Tak Sports Park, pilot use of green technologies in local ferry operation, commissioning an automated parking system at the Hong Kong-Zhuhai-Macao Bridge Hong Kong Port Island for private cars from Guangdong and Macao and developing Smart Library System. These initiatives are under implementation as planned, and are expected to be completed progressively from end-2024 onwards.

[5] The four smart initiatives under Smart Village Pilots have been subsumed into the relevant smart areas.

Annex 2

Details of Digital Government and Smart City Initiatives Categorised by Major Application Technologies

Major Application Technologies		Number of Digital Government Initiatives	B/Ds Involved
Big data analytics / AI	Adoption of chatbot to provide more interactive and round-the-clock services for public enquiries.	About 25	Innovation, Technology and Industry Bureau, Efficiency Office, Independent Commission Against Corruption, etc.
	B/Ds to obtain big data of relevant business operations more easily through descriptive analysis to improve operational efficiency; B/Ds to assess future trends more accurately through predictive analysis to facilitate management decisions; and To monitor and project the operational condition of government facilities, so as to assist B/Ds to timely figure out predictive maintenance measures for more effective maintenance of relevant facilities and enhancement of their safety.	About 15	Hong Kong Observatory, Buildings Department, Food and Environmental Hygiene Department, etc.

Major Application Technologies		Number of Digital Government Initiatives	B/Ds Involved
	Adoption of video/image analysis to assist B/Ds to obtain real-time situation of the venue effectively so as to enhance venue management and operational efficiency.	About 10	Marine Department, Information Services Department, Radio Television Hong Kong, etc.
	Others (e.g. to reduce manual procedures for enhancing operational efficiency through speech-to-text and Natural Language Processing (NLP) technologies, etc.)	About 10	Department of Health, Planning Department, Transport Department, etc.
Blockchain (e.g. issuing and verifying licences and certificates electronically)		About 10	Fire Services Department, Correctional Services Department, Independent Commission Against Corruption, etc.
Geospatial analytics (e.g. to assist B/Ds to understand the needs in different geographic locations by analysing and displaying the distribution of specific data in different geospatial to make corresponding decisions)		About 10	Home Affairs Department, Hong Kong Police Force, Civil Aviation Department, etc.
Others	Adoption of "iAM Smart" to enhance service processes, so as to enable the public to access and use e-services more conveniently.	About 10	Education Bureau, Food and Environmental Hygiene Department, Auxiliary Medical Service, etc.

Major Application Technologies		Number of Digital Government Initiatives	B/Ds Involved
	To develop data dashboard for B/Ds to obtain and understand relevant statistical information more conveniently and assist them to enhance decision-making capabilities and operational efficiency with data-driven approach. Data dashboard can also enhance data dissemination effectiveness and enable the public to obtain and understand relevant statistical information more easily.	About 15	Constitutional and Mainland Affairs Bureau, Highways Department, Hong Kong Police Force, etc.
	To collect real-time data (such as environmental data) through Internet of Things to assist in monitoring and assessing the business situation and enhancing management efficiency; Adoption of Building Information Modelling technology to assist in accelerating decision- making and enhancing management efficiency of construction projects in planning, design, construction and delivery processes; and Adoption of Robotic Process Automation technology to automate B/D's relevant business processes so as to minimise human errors and enhance service efficiency.	About 10	Health Bureau, Drainage Services Department, Agriculture, Fisheries and Conservation Department, etc.

Annex 3

Top 20 Cities in the Smart City Index 2024 by the International Institute for Management Development

Ranking	City	"Technologies"	"Structures"
1	Zurich, Switzerland	AA	AAA
2	Oslo, Norway	A	AA
3	Canberra, Australia	A	AAA
4	Geneva, Switzerland	AA	AAA
5	Singapore	A	A
6	Copenhagen, Denmark	A	AA
7	Lausanne, Switzerland	A	AA
8	London, United Kingdom	AA	BBB
9	Helsinki, Finland	A	AA
10	Abu Dhabi, United Arab Emirates	BB	BB
11	Stockholm, Sweden	A	A
12	Dubai, United Arab Emirates	BB	BB
13	Beijing, China	BB	BB
14	Hamburg, Germany	BBB	BBB
15	Prague, Czech Republic	A	A
16	Taipei, China	A	BBB
17	Seoul, Republic of Korea	AAA	BBB
18	Amsterdam, The Netherlands	A	BBB
19	Shanghai, China	BB	BB
20	Hong Kong, China	AAA	BBB

Note: The cities participated in the evaluation are distributed into four groups based on their Human Development Index[6] scores. Within each group, cities are assigned a "rating scale" based on the perception score of a given city compared to the scores of all other cities within the same group, from the highest AAA-AA-A-BBB-BB, A-BBB-BB-B-CCC, BB-B-CCC-CC-C to the lowest CCC-CC-C-D.

[6] Human Development Index is an indicator introduced by the United Nations Development Programme to evaluate the standards of health, education and living of a country/economy.