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Panel on Information Technology and Broadcasting

Meeting on 8 April 2024

Background brief on enhancing digital infrastructure and support to the development of the artificial intelligence ecosystem

Purpose

This paper provides background information on the Administration's work in enhancing digital infrastructure and support to the development of the artificial intelligence ("AI") ecosystem. It also gives a brief account of the major views and concerns expressed by the Panel on Information Technology and Broadcasting ("the Panel") and the Subcommittee on Matters Relating to the Development of Smart City ("the Subcommittee") on the relevant issues.

Background

Digital infrastructure

2.   In the 2023 Policy Address, the Chief Executive announced that the Administration would take forward the digitalization of government services, using AI and opening up more government data to accelerate development of digital economy. The Digital Economy Development Committee, chaired by the Financial Secretary, is conducting studies on measures in relation to digital infrastructure, cross-boundary data flow, digital transformation of enterprises, human resources support, etc.

Hong Kong Innovation and Technology Development Blueprint

3.   In December 2022, the Administration published the Hong Kong Innovation and Technology Development Blueprint ("the Blueprint") setting out four broad development directions, and one of which was "to promote

digital economy development and develop Hong Kong into a smart city". According to the Administration, a smart city is the backbone of a digital economy and is conducive to promoting the development of innovation and technology ("I&T"). The Administration will speed up Hong Kong's development into a smart city by leveraging technology to enhance management efficiency of the Government and optimize city management. Measures already implemented by the Government include:

(a) launching the Next Generation Government Cloud Infrastructure Services, the Big Data Analytics Platform and a Shared Blockchain Platform to facilitate the application of advanced technologies in various government departments on all fronts;

(b) launching the "iAM Smart" platform which enables members of the public to conduct authentication and digital signing for using government services. The Government plans to fully adopt "iAM Smart" for provision of one-stop digital government services for the public by end-2025. Meanwhile, the Government is developing a business version of the "iAM Smart" platform to improve and streamline the authentication of business identities. In the 2023-2024 Budget, a sum of about $200 million has been earmarked to enhance the operation of the "iAM Smart" platform;

(c) implementing the "cross-boundary public services" initiative under which the Government will work with the cities in the Guangdong-Hong Kong-Macao Greater Bay Area ("GBA") to use "iAM Smart" to provide services;

(d) developing the Consented Data Exchange Gateway ("CDEG"), which will be linked up to the Commercial Data Interchange of the Hong Kong Monetary Authority, to enable members of the public to opt for the pilot data interchange arrangement by end-2024, as a means to facilitate verification of the identity of customers by financial institutions;

(e) developing the Common Spatial Data Infrastructure and setting up a Geospatial Lab, so as to promote the concept and benefits of common spatial data to the public and private sectors, and encourage them to share their spatial data for greater synergy; and

(f) adopting the Building Information Modelling-Asset Management/Facility Management (BIM-AM/FM) Platform

in building facility management to facilitate remote monitoring and fault diagnosis by facility management and maintenance personnel and to enhance efficiency in facility management and maintenance.

InnoHK Clusters

4.   The Government has set up two research clusters at the Hong Kong Science Park, namely Health@InnoHK which focuses on healthcare technologies, and AIR@InnoHK which focuses on AI and robotics technologies, for the purposes of bringing together leading researchers from around the world to conduct world-class and impactful collaborative research with local universities and research institutions.   So far, 28 research laboratories have been selected for admission to the Hong Kong Science Park, involving 7 local universities and research institutions as well as over 30 institutions from 11 economies.

Facilities to support innovation and technology development

5.   In order to support I&T development in Hong Kong and attract more technology companies and start-ups to establish a presence locally, the Administration has provided various facilities and made planning for future development, including:

(a)   Data centres: Currently, there are about 60 data centres in Hong Kong with a total gross floor area reaching 800 000 square metres ("sq m").   An additional 700 000 sq m of usable floor area is expected to be provided between 2022 and 2026.   The Government will consider making available more land for the development of data centres in the San Tin Technopole, etc.;

(b)   Cross-boundary cooperation: The Administration has joined hands with the Shenzhen Government in promoting the development of the Shenzhen-Hong Kong I&T Cooperation Zone formed by the Hong Kong Shenzhen I&T Park ("HSITP") in the Lok Ma Chau Loop and the Shenzhen I&T Zone, while proactively participating in the development of Nansha by stepping up collaboration with Nansha on scientific research, with a view to enhancing the development of the industry chain of I&T in GBA.   Moreover, the Government has developed the Shenzhen-Hong Kong Modern Service Industry Cooperation Zone in Qianhai to promote the development of modern service industries including technological services and emerging industries through the expanded regulatory interface and mechanism connectivity with Hong Kong and Macao;

(c) InnoParks: The Hong Kong Science and Technology Parks Corporation ("HKSTPC") has repositioned its three industrial estates as "InnoParks". Meanwhile, the Government has invited HKSTPC to explore the development of the second Advanced Manufacturing Centre at the Tai Po InnoPark, with expected project completion by 2027. The Microelectronics Centre in Yuen Long InnoPark is also planned to be commissioned within 2024;

(d) Expansion of Cyberport: Cyberport has planned to build Cyberport 5 at an existing waterfront site of approximately 1.6 hectares with a gross floor area of around 66 000 sq m. Facilities to be provided include office, co-working space, a data services platform, a multifunction hall and ancillary facilities. The construction works, which commenced in 2021, are expected to be completed in 2025 at the earliest; and

(e) Development of Lau Fau Shan: As announced by the Chief Executive in the 2023 Policy Address, the Government and Cyberport will commence a planning study on the development of Lau Fau Shan as a digital technology hub through the provision of new I&T facilities, so as to capitalize on the opportunities brought by Qianhai and promote technological development of modern services industry.

Cyberport's support for the development of artificial intelligence ecosystem

6. According to the Blueprint, a vibrant I&T ecosystem hinges on the comprehensive development of and positive interaction among the upstream, midstream and downstream sectors, with the AI industry being one of the focused area of development. Through the introduction of various measures, Cyberport has continuously promoted the development of the AI ecosystem, accelerated I&T application and proactively attracted strategic enterprises for talent acquisition and investment.[1]

7. As announced by the Chief Executive in the 2023 Policy Address, Cyberport will establish an AI supercomputing centre ("AISC") in phases, with a view to supporting the huge demand for computing power from research and development ("R&D") and relevant sectors and promoting industry development. The first phase of development is expected to come into operation in 2024 at the earliest. AISC will strengthen R&D capabilities in areas including life and health technology, AI and data science,

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[1] Information extracted from Cyberport's press release issued on 28 February 2024.

advanced manufacturing and new energy technology while laying the foundation for developing cutting-edge technologies including generative AI and semiconductor core technology.

8.   Cyberport has gathered over 190 start-ups specializing in R&D of AI.   It has also signed Memorandum of Understandings with several leading companies to foster collaborative exchanges, with a view to creating a comprehensive ecosystem for the development of AI technology and industries.   In the 2024-2025 Budget, $3 billion has been earmarked for the launch of a three-year AI Subsidy Scheme with the major objective of supporting local universities, research institutions and enterprises in leveraging computing power.[2]

Previous discussions

9.   At the meetings of the Panel on 13 February, 8 May, 13 November and 12 December 2023 and of the Subcommittee on 31 January and 25 April 2023, the Administration briefed members on various issues relating to the development of digital infrastructure and the AI ecosystem.   Major views and concerns expressed by members are summarized in the ensuing paragraphs.

Digital infrastructure

10.   Members were of the view that given the considerable scale of the infrastructure associated with I&T, the cost might create a huge burden on the public coffer if it was fully funded by the Administration.   Members asked whether the Administration would consider encouraging the private sector to participate in developing the infrastructure.   The Administration advised that it was expediting the development of I&T-related infrastructure projects and exploring enhancements to the relevant proposals to encourage renowned local, Mainland and overseas I&T enterprises as well as research institutions or universities to participate in the work of the Hong Kong-Shenzhen I&T Park Limited in the Lok Ma Chau Loop.

"iAM Smart" platform

11.   Members were concerned whether the development of e-Government in Hong Kong could keep pace with the relevant developments in the Mainland.   According to the Administration, CDEG was being developed.   This, together with the full adoption of "iAM Smart" to achieve "single portal for online government services", would enable data

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[2]   The funding for the initiative is sought in the context of the Appropriation Bill 2024.

to be exchanged and shared among different departments, thereby complementing the country's development of Digital China.   At present, most of the data sharing initiatives could be implemented through administrative arrangements and technological options.

12.   Members asked whether the Administration would allow data exchange in the digital infrastructure of Hong Kong and Guangdong through CDEG, and how the Administration would ensure the protection of the privacy of members of the public in tandem with promoting cross-boundary data flow.   The Administration informed members that the two governments were conducting tests on the interface between the digital infrastructure of Guangdong and Hong Kong, and hoped to launch the relevant services as soon as possible to enable Hong Kong residents to use "iAM Smart" when registering on the "Unified Identity Authentication Platform of Guangdong Province" and using the government services of Guangdong Province.

13.   On the protection of privacy, the Administration advised that members of the public could opt to share a part or all of their data through CDEG.   The Administration would consult the Privacy Commissioner for Personal Data to ensure that the protection of the public's personal data complied with the requirements of the Personal Data (Privacy) Ordinance (Cap. 486).   Efforts would also be made to ensure that the information security and the personal data of the public would be adequately protected. Members suggested that the Administration should draw reference from the Data Security Law and Personal Information Protection Law enacted by the Mainland as well as Singapore's Digital Government Blueprint to achieve the goal of data sharing among departments.   The Administration was open-minded as to whether there was a need for enacting laws to regulate matters such as data collection and usage, and relevant legislation would be amended at an appropriate juncture to facilitate the development of e-Government services.

14.   Members enquired how the Administration would encourage more government departments as well as public and private organizations to adopt "iAM Smart" to provide their online services.   The Administration remarked that the Office of the Government Chief Information Officer ("OGCIO") was in the process of launching a sandbox programme in collaboration with Cyberport, enabling public and private organizations to conduct Proof-of-Concept tests through the sandbox programme.   OGCIO would progressively extend the sandbox programme to more sectors such as culture and sports, in order to drive the development of more innovative online services by different industries by leveraging "iAM Smart".

Developing artificial intelligence technology

15.   Members commented that in order to develop AI technology and take forward digital government services, it was crucial for the Administration to enhance the Copyright Ordinance (Cap. 528).   However, the limited number of talent specializing in the relevant legal areas who were also conversant with AI technology might hamper the work of promoting digital government.   The Administration remarked that the Government had all along adhered to the Personal Data (Privacy) Ordinance, the Guidance on the Ethical Development and Use of Artificial Intelligence published by the Office of the Privacy Commissioner for Personal Data, as well as other relevant laws, administrative measures and industry guidelines in the collection and use of data, including personal data, where appropriate. Experts would be invited to advise on guidelines applicable to the development and application of generative AI in Hong Kong, and the Commerce and Economic Development Bureau would also explore the enhancement to the Copyright Ordinance regarding protection for AI technology development, with a consultation exercise to be conducted in 2024.

Hetao Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone

16.   Regarding the Hong Kong Park of the Hetao Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone, i.e. HSITP, members noted that the first three buildings of the first phase development would be completed gradually from the end of 2024 onwards.   Members suggested that the Administration should develop a headquarters economy in HSITP, with the goal of contributing greater economic benefits to Hong Kong.   The Administration advised that the preliminary planning for the first phase of the Hong Kong Park had been completed and the work on the second phase was expected to commence as soon as possible in 2024.   Meanwhile, an interface mechanism between Shenzhen and Hong Kong would continue to be put in place.   On the development of a headquarters economy, the authorities had endeavoured to drive the development of headquarters economy from the perspective of attracting businesses and investment, and many enterprises aiming to establish a presence in Hong Kong had plans to set up their regional headquarters of Greater China in the city so as to further expand their business to the Mainland.

Artificial intelligence supercomputing centre

17.   Members expressed their views about the high cost of AISC and asked whether Cyberport would be capable enough to operate AISC; and whether there would be difficulties in respect of purchasing relevant

hardware and software as well as recruiting manpower in the wake of the import/export restrictions imposed by overseas places. The Administration advised that taking into account the views of the consultant, together with the issues relating to the hardware and software requirements as well as procurement, the authorities were of the view that Cyberport was well-positioned to establish AISC, and hence Cyberport was invited to set up and operate AISC. While AISC would be operated on a commercial basis in the future, the Government would continue to support the development of the AI industry ecosystem.

18. The Administration added that it had earlier established a new InnoHK Centre specializing in the development of generative AI technology, with the participation of five local universities in the relevant initiative and the Hong Kong University of Science and Technology ("HKUST") taking up the leading role. The Administration explained that the development of generative AI technology hinged on the availability of computing infrastructure of a reasonable scale. HKUST had set up a small supercomputing centre and committed to shouldering part of the expenses. As for the future computing power, the Administration would draw up relevant strategies across multiple fronts.

Questions raised at Council meetings

19. Members had raised questions relating to digital infrastructure, development and application of AI, and enhanced AI-related cooperation between Shenzhen and Hong Kong at various Council meetings. Details of the questions and the Administration's replies are given in the hyperlinks in the **Appendix**.

Latest development

20. The Administration will brief the Panel on the latest work progress of enhancing digital infrastructure and support to the development of AI ecosystem on 8 April 2024.

Relevant papers

21. A list of relevant papers is set out in the **Appendix**.

Council Business Division 1 and Public Complaints Office
Legislative Council Secretariat
28 March 2024

Enhancing digital infrastructure and support to the development of the artificial intelligence ecosystem

List of relevant papers

Committee	Date of meeting	Papers
Panel on Information Technology and Broadcasting	13 February 2023	[Agenda](#) Item III: Hong Kong Innovation and Technology Development Blueprint [Minutes of meeting](#) [Follow-up paper](#)
Panel on Information Technology and Broadcasting	8 May 2023	[Agenda](#) Item III: Work progress update of Cyberport [Minutes of meeting](#) [Follow-up paper](#)
Panel on Information Technology and Broadcasting	13 November 2023	[Agenda](#) Item III: Briefings by the Secretary for Innovation, Technology and Industry, the Secretary for Commerce and Economic Development and the Secretary for Culture, Sports and Tourism on the Chief Executive's 2023 Policy Address [Minutes of meeting](#)
Panel on Information Technology and Broadcasting	12 December 2023	[Agenda](#) Item III: Facilitating data flow and safeguarding data security [Minutes of meeting](#) [Follow-up paper](#)
Subcommittee on Matters Relating to the Development of Smart City	31 January 2023	[Agenda](#) Item I: Update on the implementation of Smart Government [Minutes of meeting](#) [Follow-up paper](#)
Subcommittee on Matters Relating to the Development of Smart City	25 April 2023	[Agenda](#) Item I: The next stage of work on smart city development [Minutes of meeting](#)

Council meeting	Paper
23 February 2022	Question 13: Development of digital economy
11 May 2022	Question 6: Development of innovation and technology and advanced industries
8 June 2022	Question 5: The "iAM Smart" platform
13 July 2022	Question 8: Shenzhen-Hong Kong Innovation and Technology Cooperation Zone
15 February 2023	Question 2: Promoting the development of innovation and technology
22 February 2023	Question 10: Measures to complement the nation's establishment of a data base system
19 April 2023	Question 5: Expediting the development of innovation and technology in Hong Kong
26 April 2023	Question 9: Promoting the development of e-Government services
10 May 2023	Question 19: Artificial intelligence chatbot ChatGPT
10 May 2023	Question 10: Protecting personal data when developing and using artificial intelligence
31 May 2023	Question 10: Regulating contents generated by artificial intelligence technology
28 June 2023	Question 14: Hong Kong enterprises' investment in the fields of innovation and technology on the Mainland
1 November 2023	Question 12: Impact of the United States executive order on Hong Kong's innovation and technology industry Question 14: Promoting the synergistic development of Shenzhen and Hong Kong in science and technology innovation

Council meeting	Paper
6 December 2023	Question 12: Synergistic development of Shenzhen and Hong Kong in science and technology innovation
24 January 2024	Question 18: Development and application of artificial intelligence
31 January 2024	Question 5: Developing artificial intelligence