Innovation & Technology

Overview

With opportunities brought by the National 14th Five-Year Plan and the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), Hong Kong can capitalise on its advantages in research and development (R&D) capabilities, technology infrastructure, legal system and intellectual property to act as a strategic bridge for innovative companies looking to access the Mainland market, thereby developing into an international innovation and technology (I&T) centre.

The Hong Kong Special Administrative Region Government (HKSAR Government) promulgated the Hong Kong Innovation and Technology Development Blueprint (the Blueprint) in December 2022 to establish a clear development path and formulate systematic strategic planning for Hong Kong's I&T development over the next five to 10 years, charting Hong Kong in moving full steam towards the vision of an international I&T centre. The Government has formulated the Blueprint from the perspective of top-level planning and design, and will take forward the Blueprint under four broad development directions, namely "to enhance the I&T ecosystem and promote 'new industrialisation' in Hong Kong"; "to enlarge the I&T talent pool to create strong impetus for growth"; "to promote digital economy development and develop Hong Kong into a smart city"; and "to proactively integrate into the overall development of the country and consolidate our role as a bridge connecting the Mainland and the world".

I&T stakeholders

- **Hong Kong Science and Technology Parks Corporation (HKSTPC)** provides infrastructural and one-stop support services to over 1,500 technology companies.
- **Cyberport** is Hong Kong's digital technology flagship and incubator for entrepreneurship with over 2,000 members including over 900 onsite and close to 1,100 offsite start-ups and technology companies.
- **Hong Kong-Shenzhen Innovation and Technology Park (HSITP)** is being developed in the Lok Ma Chau Loop (the Loop) to provide about 1 million square metres gross floor area under phase 1 development. The first three buildings will be completed in phases starting from end-2024.
- Five research centres established by the Government, namely the **Automotive Platforms and Application Systems R&D Centre**, **Hong Kong Applied Science and Technology Research Institute**, **Hong Kong Research Institute of Textiles and Apparel**, **Logistics and Supply Chain MultiTech R&D Centre**, and **Nano and Advanced Materials Institute**, drive applied R&D in selected focus areas and foster commercialisation of R&D outcomes and technology transfer.
- The **Hong Kong Academy of Sciences** and the **Hong Kong Young Academy of Sciences** advise the Government on research and technology-related policies.

- ➤ The **Massachusetts Institute of Technology** set up its first overseas Innovation Node in Hong Kong in 2016.
- ➤ **Karolinska Institutet** (Sweden) opened a research facility at the Hong Kong Science Park in 2016 to strengthen research into regenerative medicine.
- ➤ The **Fraunhofer Institute for Production Technology of Germany** and the Hong Kong Productivity Council jointly set up the Invention Centre Hong Kong in 2018 to support Hong Kong enterprises in adopting innovative industrial technologies, promoting new industrialisation.
- ➤ **Hong Kong-Mainland collaboration**: There are currently 16 State Key Laboratories in Hong Kong and six Hong Kong Branches of Chinese National Engineering Research Centres. The Innovation and Technology Commission has doubled the maximum annual funding for each of these institutions to $20 million starting from 2022-23 financial year to strengthen support for R&D activities and promote further co-operation and exchanges with overseas and Mainland institutions.
- ➤ The **Ministry of Science and Technology (MOST)** and the HKSAR Government launched the Mainland-Hong Kong Joint Funding Scheme in April 2019 to support and encourage R&D collaboration in Hong Kong and the Mainland. In March 2023, the MOST and the HKSAR Government signed the "Arrangement between the Mainland and Hong Kong on Expediting the Development of Hong Kong into an International Innovation and Technology Centre".
- ➤ The **Chinese Academy of Sciences (CAS)** and the HKSAR Government signed the "Memorandum of Understanding on Establishing Affiliated Institution by the CAS in Hong Kong" in November 2018. The Hong Kong Institute of Science & Innovation, CAS Limited was set up in Hong Kong in April 2019 to promote the development of scientific research, technological innovation and education.

Digital economy
- ➤ The **Digital Economy Development Committee** put forward 12 core recommendations to the Government in early 2024 with a view to promoting digital economy development on five major fronts.
- ➤ The **Policy Statement on Facilitating Data Flow and Safeguarding Data Security in Hong Kong** was published in end-2023, outlining the Government's data governance philosophy at a macro level and setting out 18 specific action items in five categories to lay a foundation for the furtherance of high-quality development of I&T, digital economy and smart city in Hong Kong.
- ➤ A **Digital Policy Office**, to be established by consolidating the existing Office of the Government Chief Information Officer and the Efficiency Office, will be responsible for formulating policies on digital government, data governance and information technology, promoting the opening up of data and fostering development of more digital and user-centric services.
- ➤ Hong Kong collaborates with the Guangdong Provincial Government to develop the **Digital Bay Area**, covering efforts such as promoting the **"Cross-boundary Public Services"** initiative, under which Hong Kong residents can log into the Guangdong Government Service Network with "iAM Smart", while Guangdong and Hong Kong residents can use the self-help kiosks instead of seeking government services in person.

➢ The **"iAM Smart" platform** is being enhanced to provide the public with more convenient one-stop digital government services and improved user experience.

➢ A **"Digital Corporate Identity"** platform is being planned for implementation progressively from end-2026 to enable authentication of identity and verification of signature of enterprises using electronic government services or conducting online business transactions in a secure, convenient and efficient manner.

➢ A **Digital Transformation Support Pilot Programme** has been launched by Cyberport, under which subsidies will be provided on a matching basis to assist small and medium enterprises (SMEs) in adopting ready-to-use basic digital solutions to expedite their digital transformation.

➢ The **Technology Voucher Programme**, which is widely received by industries, has supported over 32,000 applications from local enterprises and organisations as of end-February 2024 so that they can use technologies to enhance productivity and upgrade or transform their business processes.

➢ The Hong Kong Productivity Council's **Biz Expands Easy** launched in September 2022 one-stop online platform helps enterprises develop and/or upgrade digital support facilities by consolidating information of relevant government funding schemes to facilitate their research of funding schemes to support business development.

➢ A facilitation measure on **"Standard Contract for the Cross-boundary Flow of Personal Information Within the Guangdong-Hong Kong-Macao Greater Bay Area (Mainland, Hong Kong)"** was rolled out in end-2023 with a view to facilitating and streamlining the arrangements on cross-boundary flow of personal information from the Mainland cities in the GBA to Hong Kong.

I&T infrastructure

➢ The planning of the **Northern Metropolis**, particularly the San Tin Technopole, will align with the development positioning of the **Hetao Shenzhen-Hong Kong Science and Technology Innovation Co-operation Zone**, and fully integrate with the strategy on enhancing Hong Kong's I&T competitiveness to pave way for the future development of the Hetao Co-operation Zone in a forward-looking manner.

➢ Move full steam ahead with the construction of the **HSITP** in the Lok Ma Chau Loop.

➢ Hong Kong and Shenzhen are taking forward the joint development of the Hetao Shenzhen-Hong Kong Science and Technology Innovation Co-operation Zone (Co-operation Zone), comprising of the HSITP and the Shenzhen Innovation & Technology Zone, to establish the "one zone, two parks" initiative under the auspices of "one country, two systems".

➢ Provide new land mainly for I&T development from the Ma Liu Shui reclamation project and the relocation of the Sha Tin Sewage Treatment Works to caverns.

➢ The **Hong Kong Science Park (Shenzhen Branch)** commenced operation in June 2023 to enable enterprises interested in conducting business in the GBA to establish a presence in the Shenzhen Park of the Co-operation Zone.

➢ Hong Kong is a leading digital economy, consistently achieving top rankings in digital readiness and Internet access capabilities. Hong Kong has **12 submarine cable systems** and operates

nine satellites for external communications. Several submarine cable systems will be ready in the coming years, enhancing the city's connectivity with other parts of the world.

➢ The **New Industrialisation Funding Scheme** (formerly known as Re-industrialisation Funding Scheme) was launched in 2020 to subsidise manufacturers, on a matching basis, to set up smart production lines in Hong Kong. The Government aims to increase the cumulative number of funded smart production lines to over 130 by 2027.

➢ Set up the **New Industrialisation Development Office** which is led by the **Commissioner for Industry.** The office adopts an industry-oriented approach to promote new industrialisation in Hong Kong, support strategic enterprises to develop their businesses in Hong Kong, assist the manufacturing sector in upgrading and transformation by making use of I&T, and provide support for start-ups.

➢ The **Advanced Manufacturing Centre** in the Tseung Kwan O InnoPark provides a gross floor area of about 108,600 square metres for accommodating high value-added manufacturing.

➢ The **Data Technology Hub** in the Tseung Kwan O InnoPark provides a purpose-designed infrastructure for the data technology and telecommunications services industry.

➢ The **Microelectronics Centre** will be commissioned within 2024 for gradual move-in of the newly established Hong Kong Microelectronics Research and Development Institute and other tenants, in a bid to promote the development of microelectronics.

➢ Cyberport will establish an **Artifical Intelligence (AI) supercomputing centre** (AISC) in phases from 2024 to support the local demand for supercomputing power from R&D and relevant sectors.

➢ Launch a three-year **AI Subsidy Scheme** of $3 billion to provide subsidies to local universities, R&D institutes and enterprises to leverage the AISC's computing power and promote development of AI ecosystem in Hong Kong.

➢ The **expansion works of the Hong Kong Science Park and Cyberport** will be completed in phases from 2025 onwards, providing 100,000 square metres of additional floor area.

➢ Launch of the $10 billion **"Research, Academic and Industry Sectors One-plus Scheme" (RAISe+ Scheme**) in October 2023 to incentivise collaboration among industry, academic and research sectors to further promote the "from 1 to N" transformation of R&D outcomes and industry development. The RAISe+ Scheme will fund, on a matching basis, at least 100 university research teams with potential to become successful start-ups.

➢ **Promote the development of technology industry by collaborating with the Office for Attracting Strategic Enterprises (OASES)** and making use of the $5 billion **Strategic Tech Fund** as well as the land and space provided for I&T use starting from 2024 in the HSITP, to attract high-quality enterprises and talents to Hong Kong, primarily focusing on life and health technology, AI and data science, advanced manufacturing and new energy technology. The Government aims to **attract not less than 100 high-potential or representative I&T enterprises** to set up or expand their businesses in Hong Kong by 2027, including at least 20 top-notch I&T enterprises,

bringing more than \$10 billion of investment to Hong Kong and creating thousands of local job opportunities.

➢ Explore the development of cavern data centres for effective use of land resources and utilisation of the edge of cavern space to support I&T development.

Promoting R&D

➢ Facilitate **effective cross-boundary flow of innovative elements**: On funding, universities and research institutions in Hong Kong can apply for Mainland science and technology funding for use in Hong Kong. This policy allowing cross-boundary remittance of research funding injects further impetus into Hong Kong's research sector. Up to December 2023, the MOST, the National Natural Science Foundation of China, the Department of Science and Technology of Guangdong Province, the Science and Technology Bureau of Guangzhou Municipality, the Science, Technology and Innovation Commission of Shenzhen Municipality and other Mainland provinces and cities have approved about RMB 800 million for universities and research institutes in Hong Kong to conduct R&D or set up laboratories. In addition, upon meeting specific requirements, branches established by Hong Kong's universities and scientific research institutions in the Mainland would be allowed to lodge applications for exporting human genetic resources to Hong Kong for research purpose independently under a trial scheme.

➢ Two **InnoHK research clusters** have been set up at the Hong Kong Science Park, namely Health@InnoHK focusing on healthcare technologies, and AIR@InnoHK, focusing on AI and robotics technologies. 29 research laboratories under InnoHK have commenced operation, involving seven local universities and research institutions as well as over 30 institutions from 11 economies. The Government will start making preparations in 2024 for the establishment of the third InnoHK research cluster which focuses on advanced manufacturing, materials, energy and sustainable development.

➢ Set aside \$10 billion to further promote development of life and health technology. To enhance support for the transformation of R&D outcomes as well as R&D activities related to life and health technology, \$6 billion out of the above provision will be used to provide subsidies for local universities to collaborate with Mainland and overseas organisations to set up **life and health technology research institutes**. The purpose is to facilitate relevant R&D activities and transformation of R&D outcomes, and to attract leading I&T talent and research teams around the world to Hong Kong. \$2 billion will be allocated to support the InnoHK research clusters to establish presence in the Loop. \$200 million will also be allocated to provide assistance to start-ups engaging in life and health technology in the form of incubation and acceleration programmes, etc.

➢ With the theme "Hong Kong's Got I&T", Cohort 2 of the **City I&T Grand Challenge** was launched in March 2024. All sectors of the community are invited to put forward I&T solutions focusing on two subjects, namely "I&T for Nature (Yama)" and "I&T for Community (Community Wellness)", to enhance the experience in nature and create a caring society in Hong Kong. A series of workshops and other activities will also be held to promote a fervid I&T atmosphere in the community.

- A **Frontier Technology Research Support Scheme** will be launched to assist funded universities, on a matching basis, in procuring facilities and conducting research projects led by leading local and international researchers on various frontier technology fields.

- Provide subsidies of no more than $16 million to the Technology Transfer Office of each of the eight University Grants Committee (UGC)-funded universities from 2024-25 onwards.

- Establish the **Hong Kong Microelectronics Research and Development Institute** in 2024 to spearhead and facilitate research collaboration on the third-generation semiconductors among universities, R&D centres and the industry, and to realise R&D outcomes by making use of the comprehensive manufacturing industry chain in the GBA.

- A $10 billion **New Industrialisation Acceleration Scheme (NIAS)** will be launched in 2024. Enterprises engaging in life and health technology, AI and data science, advanced manufacturing and new energy technology will each be provided with funding support of up to $200 million on a matching basis of one (Government): two (enterprise). Enterprises participating in the NIAS may receive subsidies to engage research talent under the Research Talent Hub, and also engage a small number of non-local technical personnel on a pilot basis under the Technology Talent Admission Scheme to expedite the set-up and operation of advanced manufacturing facilities in Hong Kong.

Nurturing and pooling talents

- **The Global STEM Professorship Scheme** attracts more world renowned scholars to engage in I&T-related teaching and research activities in Hong Kong.

- The **Research Talent Hub** provides funding support to each eligible company or organisation to engage up to four research talents to conduct R&D work. Since April 2023, subsidies have been increased by about 10%, and research talents with a doctoral degree will also be provided with a living allowance.

- The **Technology Talent Admission Scheme (TECHTAS),** which provides a fast-track arrangement for admitting technology talent from the Mainland and overseas to work on R&D in Hong Kong, was further enhanced in December 2022 by lifting the local employment requirement, extending the quota validity period to two years and expanding the coverage to more emerging technology areas.

- The **STEM Internship Scheme** provides allowance to undergraduates and postgraduates taking STEM (science, technology, engineering and mathematics)-related programmes in designated local universities to enroll in short-term I&T-related internships, and has been expanded to cover internship opportunities offered by the five government-funded R&D centres and the Hong Kong Productivity Council to STEM students of local and non-local universities (including the GBA campuses established by designated local universities).

- The **Innovation and Technology Scholarship** subsidises university students to take part in overseas/Mainland attachment programmes, local internships, mentorship programmes, etc.

- The **IT Innovation Lab in Secondary Schools Programme** and **"Knowing More About IT" Programme** provide funding support to publicly funded secondary and primary schools

respectively to nurture IT knowledge among students and cultivate their interest in IT by organising IT-related extra-curricular activities.

➢ The **New Industrialisation and Technology Training Programme** (formerly known as Re-industrialisation and Technology Training Programme) provides funding support to local enterprises on a 2(Government):1(enterprise) matching basis to train their staff in advanced technologies, especially those related to new industrialisation.

➢ Collaborating with the OASES to **attract leading I&T talents around the world**, and providing special facilitation measures to bring their business or R&D outcomes to Hong Kong.

➢ **More accommodation facilities will be built for I&T talents,** including a potential new accommodation facility near the Hong Kong Science Park, and provision of the first accommodation facility at the HSITP in 2024.

➢ Permit flexible planning to provide **additional accommodation for I&T talents at San Tin Technopole**.

Supporting technology start-ups

➢ **Close to 4,300 start-ups** in Hong Kong in 2023 (up over 30% from about 3,200 in 2019) and **about 16,500 start-up jobs** (up over 30% from about 12,500 in 2019) according to the 2023 start-up survey by InvestHK.

➢ $2 billion **Innovation and Technology Venture Fund** (ITVF) set up by the Government to co-invest on a matching basis with selected private venture capital funds in I&T start-ups in Hong Kong. As at end-February 2024, the ITVF has invested about $212 million in 28 local I&T start-ups and attracted over $2.3 billion in private investment.

➢ Set up a $5 billion **Strategic Tech Fund** to invest in enterprises with good development potential to enrich the I&T ecosystem in Hong Kong.

➢ **Private sector**: Alibaba Group launched a $1 billion Hong Kong Entrepreneurs Fund; Sequoia Capital initiated the Hong Kong X-Tech Startup Platform.

➢ **Cyberport Incubation Programme** and **Cyberport Macro Fund** (CMF) provide support services and initial venture capital funding for start-ups to accelerate their progress. Cyberport has injected an additional $200 million into the $200 million-CMF in 2021 and extended its scope to cover Series B and later stage investments. As at end-November 2023, CMF has invested more than $189 million in 26 companies, attracting over $1.7 billion private investment.

➢ Cyberport has launched a dedicated **incubation programme for smart living start-ups** in 2023, under which a maximum grant of $500,000, professional support and counselling will be provided.

➢ The **Corporate Venture Fund** under the **HKSTPC** invested nearly $400 million in 31 technology start-ups, attracting about $12.6 billion private investment.

➢ The HKSTPC will consolidate its existing Acceleration Programme and inject an additional amount of $110 million to launch the **Co-acceleration Programme** in collaboration with co-operation partners to pool the efforts of the I&T industry to nurture I&T start-ups with high potential as regional or global enterprises.

➢ The HKSTPC implemented "**Incubation Programme**", "**Incu-Bio Programme**" and a pre-incubation programme "**IDEATION**" to support I&T companies at different stages of development.

- The **InnoCell** at the Hong Kong Science Park provides about 500 residential units with ancillary facilities to foster the development of the I&T ecosystem in Hong Kong.
- The **Technology Start-up Support Scheme for Universities** provides an annual subsidy amount of $16 million to each participating university to support their teams in starting technology businesses and commercialising their research and development results. Half of the subsidy is provided to start-ups of universities with private investments on a matching basis of one to one.
- The **Public Sector Trial Scheme** provides funding support to assist eligible local technology companies and organisations in realising and commercialising their R&D outcomes and encourages public sector organisations to utilise more local R&D outcomes.
- The **E&M InnoPortal** lists the service wishes of various government departments, public organisations and the E&M trades, and invites the I&T sector, including start-ups and universities to propose relevant I&T solutions for matching.
- The **Smart Government Innovation Lab** promotes pro-innovation government procurement policy and expedite government's adoption of innovative IT products and solutions, thereby improving public services and creating more business opportunities for local start-ups and SMEs.
- **Asia No.1** and **World No.2** in the Emerging Startup Ecosystems category (Startup Genome: Global Startup Ecosystem Report 2023).

Smart city

- **Hong Kong Smart City Blueprint 2.0** sets out more than 130 initiatives covering "Smart Mobility", "Smart Living", "Smart Environment", "Smart People", "Smart Government", "Smart Economy" and "Smart Village Pilots" which bring benefits and convenience to members of the public in their daily lives.
- **Key smart city infrastructure projects include "iAM Smart" platform** offering about 340 commonly used public and commercial online services; smart lampposts; Next Generation GovCloud; Big Data Analytics Platform and Shared Blockchain Platform.
- **Commercial 5G services** in Hong Kong have already covered more than 90% of the population, and nearly 99% of the core business districts. The Government will enhance the coverage of 5G networks by expediting the expansion of mobile network infrastructure in rural and remote areas through subsidies, and supplying more spectrum to mobile network operators by auctions, with a view to improving the transmission speed of 5G networks.
- To encourage the telecommunications industry to more actively invest in infrastructure and provide better communication services to companies and the public, a tax deduction will be offered on spectrum utilisation fees to be paid by successful bidders of radio spectrum.
- From 2024, over **100 digital government initiatives** will be rolled out to promote digital government and smart city.
- Aim to turn all government services online by 2024 and provide one-stop digital services by fully adopting "iAM Smart" by 2025 to realise **a single portal for online government services.**
- Providing funding support, through the $1 billion Smart Traffic Fund, to local institutions and enterprises for conducting research and application of technology to enhance commuting convenience and efficiency of road network or space, and improve driving safety.

- ➢ **The Geospatial Lab**, established in May 2021, helps raise public interest in spatial data, and explores together with the community value and application of spatial data in support of smart city development.
- ➢ The Government will continue to **open up data** and encourage public and private organisations to follow suit for innovative industry applications.
- ➢ Exploring facilitation arrangements for the **flow of data from the Mainland to Hong Kong** to jointly promote co-ordinated development of smart cities in the GBA.
- ➢ **Wi-Fi Connected City** programme continues to promote the common brand "Wi-Fi.HK" and encourage more public and private organisations to participate in the programme. There are currently around 45,000 "Wi-Fi.HK" hotspots in Hong Kong.
- ➢ **Asia-Pacific No.4 and World No.10** for digital competitiveness (International Institute for Management Development (IMD): World Digital Competitiveness Ranking 2023).
- ➢ **World No.2 and Asia-Pacific No.1** lowest taxed data centre market (Cushman & Wakefield: 2024 Global Data Center Market Comparison).
- ➢ **World No.10 and Asia-Pacific No.2** hub for development of new technology (Smart Centres Index by UK-based Z/Yen released in November 2023).
- ➢ **Asia-Pacific No.2 and World No.3** for digital intelligence (Digital Intelligence Index 2020 complied by US-based The Fletcher School at Tufts University and Mastercard).
- ➢ **South East Asia & Oceania No.5 and World No.17** for innovation performance (World Intellectual Property Organization: Global Innovation Index 2023).
- ➢ Among **World's Top 20** smart city (IMD: Smart City Index 2024).

Fintech
- ➢ Hong Kong is home to around **1,000 fintech companies.**
- ➢ Policy Statement on Virtual Assets Development announced in October 2022.
- ➢ Major fintech infrastructure includes the **Faster Payment System** with over 13.6 million registrations as of end-December 2023; the average daily turnover reached 1.43 million real-time transactions (worth HKD$9.8 billion) in December 2023.
- ➢ **Granted licenses for eight virtual banks**, **four virtual insurers, two virtual asset trading platforms** and **17 stored value facilities**. An **Open Application Programming Interface (Open API) Framework** for the banking sector was implemented in a four-phase approaches , while the Open API Framework for the insurance sector was launched in September 2023.
- ➢ **Regulatory sandboxes** available in the Hong Kong Monetary Authority (HKMA), the Securities and Futures Commission and the Insurance Authority.
- ➢ **InvestHK's dedicated fintech team** provides one-stop service for overseas and Mainland fintech companies to set up in Hong Kong; and organises a series of Fintech events over the year, including the annual flagship **Hong Kong Fintech Week**.
- ➢ **Commercial Data Interchange (CDI)** is a consent-based financial data infrastructure for enterprises to share operational data, enabling banks to make accurate assessments on the operating condition of enterprises and provide SMEs with a better chance of securing loans. Since its official launch, CDI has facilitated more than 13,000 loan applications and reviews, with an estimated credit approval amount exceeding HK$11.7 billion as of end-December 2023.

- ➢ The HKMA is adopting a three-rail approach to **pave the way for the possible implementation of a retail Central Bank Digital Currency, i.e. an e-HKD in Hong Kong** and working with the Digital Currency Institute of the People's Bank of China to expand the cross-boundary **e-CNY** pilots in Hong Kong. A number of institutions and local banks in Hong Kong were invited to participate in the initiative.

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