

Chapter 16

Innovation, Technology and Industry

The National 14th Five-Year Plan supports Hong Kong's development into an international innovation and technology centre. To realise this vision, Hong Kong attracts top-notch overseas and Mainland research institutions with its strong research capability, robust intellectual property protection regime, world-class technological infrastructure and the opportunities presented by national development.

The Innovation, Technology and Industry Bureau formulates innovation and technology (I&T) policies in Hong Kong. The bureau is supported by the Innovation and Technology Commission and the Digital Policy Office.

The Innovation and Technology Commission promotes and supports applied research and development (R&D) and technology transfer and applications. It also promotes internationally accepted standards and conformity assessment services to underpin technological development and international trade in Hong Kong.

The Digital Policy Office promotes data-driven, people-centric and outcome-based digital policies to enhance the government's efficiency and services, bringing greater benefits to citizens and business sectors through digital government and smart city development.

Leveraging Hong Kong's competitive edge, the government develops a high value-added and diversified economy which embraces the development of new economic sectors. The government also encourages industry participation to capitalise on opportunities emerging from the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) development and the Belt and Road Initiative, in order to generate new impetus for the territory's economic development.

The Hong Kong I&T Development Blueprint sets out the city's overall I&T development plan over the next five to 10 years under four broad directions and eight major strategies, covering enhancement of the I&T ecosystem and new industrialisation; enlargement of the I&T talent pool; promotion of the development of digital economy and smart city; and integration of Hong Kong into the overall development of the country.

Infrastructure

Hong Kong Science and Technology Parks Corporation

The Hong Kong Science and Technology Parks Corporation (HKSTPC) is responsible for managing Hong Kong Science Park and the InnoCentre, and provides all-round support services to technology start-ups for promoting technology transfer and commercialisation of R&D results, as well as supporting the sustainable development of the I&T ecosystem in Hong Kong. The Hong Kong Science Park provides around 400,000 square metres of gross floor area for R&D activities and was home to about 1,300 companies as at end-2024. The total workforce was around 20,000, more than 14,000 of whom were researchers.

The HKSTPC is also responsible for managing three InnoParks in Tai Po, Yuen Long and Tseung Kwan O, which together provide 217 hectares of serviced land for I&T and manufacturing setups. Key projects in recent years include the Advanced Manufacturing Centre, Data Technology Hub and Microelectronics Centre.

Hong Kong-Shenzhen Innovation and Technology Park

The Hong Kong-Shenzhen Innovation and Technology Park Limited is a wholly owned subsidiary of the HKSTPC responsible for building, operating, maintaining and managing the Hong Kong-Shenzhen Innovation and Technology Park. The first three buildings in the

Hong Kong park are being completed by phases from end-2024 and the park will begin operation in 2025.

On 20 November 2024, the government promulgated the Development Outline for the Hong Kong Park of the Hetao Shenzhen-Hong Kong Science and Technology Innovation Co-operation Zone to better promote and plan the Hong Kong park's development through top-level design and implement 'one zone, two parks' with the Shenzhen park.

San Tin Technopole

Together with the Hong Kong-Shenzhen Innovation and Technology Park, the San Tin Technopole, situated in the Northern Metropolis, provides around 300 hectares of I&T land. The results of a consultancy study on the development plan for the new land for I&T use in the San Tin area are expected in 2025.

One of the development directions of the new land is industry-oriented with a focus on R&D transformation activities and mass production. The area can also serve as a high-quality I&T site that creates synergy with Shenzhen and becomes a new community for quality, healthy and green living.

Cyberport

Home to over 2,100 digital technology companies, Cyberport endeavours to promote the development of a digital technology ecosystem in Hong Kong. Its campus provides 98,000 sq m of rental office area, including Smart-Space and other co-working areas used by more than 800 start-ups. Cyberport also offers incubation programmes, funding support for market development and accelerators, as well as venture capital investment.

Cyberport launched the first-phase facility of its Artificial Intelligence (AI) Supercomputing Centre in December to support the computing demand of research institutes and the industry. The government also launched the \$3 billion AI Subsidy Scheme, mainly to provide subsidies to local universities, R&D institutes and enterprises, for leveraging the computing power to promote scientific breakthroughs.

Hong Kong Productivity Council

The Hong Kong Productivity Council aims to help local enterprises adopt advanced technologies and production processes and increase productivity. It provides integrated support for their business operations in Hong Kong and on the Mainland, focusing on manufacturing technologies, information technologies (IT), environmental technologies and management systems. It also promotes new industrialisation and smart city development.

Research and Development Centres

The government has six R&D centres to drive and coordinate applied R&D and to promote the commercialisation of R&D results and technology transfer: 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; Nano and Advanced Materials Institute; and Hong Kong Microelectronics Research and Development Institute, which was established in September.

Hong Kong Council for Testing and Certification

The Hong Kong Council for Testing and Certification advises the government on the overall development strategy of the testing and certification sector.

The Mainland has been opening up its market to Hong Kong's testing and certification sector through the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA). The council promotes the liberalisation measures under CEPA, helps the testing and certification sector explore opportunities in the GBA, and encourages manpower development in the sector.

Hong Kong Accreditation Service

The Hong Kong Accreditation Service operates according to international standards and is active in international and regional accreditation communities. It has mutual recognition arrangements with accreditation bodies in 117 economies, allowing the results of tests, calibrations, certifications, inspections, validations and verifications provided by its accredited organisations to be recognised globally, thus facilitating cross-border business.

Standards and Calibration Laboratory

The Standards and Calibration Laboratory is Hong Kong's official custodian of physical measurement reference standards and provides calibration services traceable to the International System of Units. It represents Hong Kong, China as a signatory to the Mutual Recognition Arrangement of the International Committee for Weights and Measures, and its calibration certificates are recognised internationally. It also provides proficiency testing schemes for local testing and calibration laboratories to assess their technical competence.

Standards-related Services

The Quality Services Division under the Innovation and Technology Commission offers standards-related free technical advice. It also represents the Hong Kong Special Administrative Region in major forums relating to standards and conformance issues and acts as Hong Kong, China's enquiry and notification point under the World Trade Organization's Technical Barriers to Trade Agreement.

Innovation and Technology Development

R&D and Technology Transfer

Hong Kong's gross domestic expenditure on R&D (GERD) amounted to \$33 billion in 2023, and the ratio of GERD to Gross Domestic Product was 1.11 per cent.

The government offers tax deductions for R&D expenditure incurred on or after 1 April 2018. The deduction is 300 per cent for the first \$2 million of such expenditure and 200 per cent for the remaining balance. There is no cap on the amount of tax deduction. The total amount of R&D expenditure eligible to claim tax deduction for the year of assessment 2022-23 was about \$3.9 billion.

In the 2024-25 financial year, the government continued to provide annual funding of up to \$20 million to each of the 16 State Key Laboratories and six branches of the Chinese National

Engineering Research Centres in Hong Kong. It has been carrying out a restructuring exercise of the laboratories, expected to conclude in 2025, which enables relevant universities to examine how to make the most of the city's geographical advantages to contribute to national needs through enhancing existing laboratories or setting up new ones.

Starting from the 2024-25 financial year, the maximum amount of annual funding support for the Technology Transfer Office of each designated university¹ has been doubled from \$8 million to \$16 million.

The Innovation and Technology Fund assists in upgrading technology and promoting innovation in manufacturing and services. In 2024, it committed around \$10.5 billion to supporting over 11,800 projects undertaken by research institutions and the industry, ranging from R&D and subsidising enterprises to adopt I&T and introduce smart production lines, to promoting I&T culture. Over 910 were R&D projects with total funding of around \$3 billion². Research funding also comes from the University Grants Committee (UGC) and Research Grants Council, which provided \$7.31 billion to UGC-funded universities in the 2023-24 academic year.

The Innovation Hub@HK website showcases the R&D outcomes of Hong Kong universities and research institutes. The website provides a one-stop platform to connect universities, research institutes and the industry to facilitate commercialisation and technology transfer of R&D outcomes.

The government has also assisted in piloting the use of a generative AI document processing copilot application, developed by the Hong Kong Generative AI Research and Development Centre under the InnoHK research clusters using a local large language model.

InnoHK Research Clusters

To promote global research collaboration, the government has allocated \$10 billion to the InnoHK initiative. Two InnoHK research clusters have been set up, namely Health@InnoHK, focusing on healthcare technologies, and AIR@InnoHK, focusing on AI and robotics technologies. Through InnoHK, local universities and research institutions have collaborated with more than 30 world-renowned universities and research institutions from 12 economies and established 30 research laboratories. The government has also started preparatory work to establish the third InnoHK research cluster, which will focus on advanced manufacturing, materials, energy and sustainable development.

Start-ups

In 2024, Hong Kong ranked third in the world and first in Asia on the Emerging Ecosystems ranking in the Global Startup Ecosystem Report. According to an Invest Hong Kong survey, the number of start-ups increased to nearly 4,700 in 2024, up by over 40 per cent compared with 2020.

¹ The designated universities are City University of Hong Kong, Hong Kong Baptist University, Lingnan University, the Chinese University of Hong Kong, the Education University of Hong Kong, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology, and the University of Hong Kong.

² Figures include around \$1.9 billion funding support for InnoHK research clusters, involving around 480 R&D projects.

The Innovation and Technology Venture Fund encourages venture capital funds to co-invest with the government in local I&T start-ups. As at end-2024, the fund had invested \$339 million in 41 local I&T start-ups and attracted over \$3.1 billion in private investment. It was announced in the 2024 Policy Address that the government would optimise the fund by redeploying \$1.5 billion to set up funds jointly with the market, on a matching basis, to invest in start-ups of strategic industries. The enhanced scheme was launched in December to invite applications as fund managers. The HKSTPC's Corporate Venture Fund and the Cyberport Macro Fund co-invest with angel investors or venture capital funds in start-ups from Hong Kong Science Park and Cyberport respectively.

The Technology Start-up Support Scheme for Universities supports teams from six local universities³ to start technology businesses and commercialise their R&D results. The annual funding for each university is up to \$16 million. As at end-2024, around \$471 million had been approved for 539 start-ups, which had derived over 2,300 intellectual property rights from their R&D. About 310 start-ups had taken their products or services to market and over 360 had received funding injections.

The \$10 billion Research, Academic and Industry Sectors One-plus Scheme promotes the transformation and commercialisation of R&D outcomes from universities. The scheme funds, on a matching basis, at least 100 research teams from universities with the potential to become successful start-ups to complete their projects in two stages within around five years. Funding support from \$10 million to \$100 million will be provided to each approved project. For the first application solicitation exercise of the scheme, 24 project applications were recommended for in-principle funding support. Representatives of the successful applications signed a memorandum of understanding with the Commissioner for I&T on 28 May, confirming their participation in the scheme. The total funding amounts to over \$1 billion.

The government will also allocate \$200 million to provide assistance to life and health technology start-ups in the Hong Kong-Shenzhen Innovation and Technology Park in the form of incubation and acceleration support.

Pooling and Nurturing Talent

The government aims to expand Hong Kong's I&T talent pool by nurturing, retaining and attracting talent, with relevant initiatives spanning across different lifestages.

The IT Innovation Lab in Secondary Schools and Knowing More About IT programmes subsidise secondary and primary schools respectively to organise extra-curricular IT activities. As at end-2024, nearly 1,000 schools joined the programmes with approved funding of more than \$700 million.

The STEM Internship Scheme encourages students of science, technology, engineering and mathematics (STEM) at eligible universities to undertake short-term full-time internships related to I&T. As at end-2024, the scheme had supported over 16,000 internship opportunities.

³ City University of Hong Kong, Hong Kong Baptist University, the Chinese University of Hong Kong, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology, and the University of Hong Kong

The Research Talent Hub funds each eligible organisation or R&D project to engage up to four graduates for R&D work. Companies subsidised under the New Industrialisation Acceleration Scheme may further engage an additional 36 research talents on a one-to-one matching basis. As at end-2024, about \$7.2 billion had been used to fund over 14,200 positions.

The Global STEM Professorship Scheme helps local universities attract world-renowned I&T scholars and their teams to undertake teaching and research work in Hong Kong. As at end-2024, the scheme had supported nearly 80 scholars.

The Technology Talent Admission Scheme provides fast-track admission to Hong Kong for R&D talent. Since its launch in 2018 to end-2024, a total of 1,120 quotas had been allotted by the Innovation and Technology Commission.

Smart City and Digital Economy

More than 130 initiatives set out in the Smart City Blueprint for Hong Kong 2.0, published in 2020, have been completed or are ongoing to make Hong Kong a more liveable smart city.

The government is also implementing over 100 digital government and smart city initiatives progressively, about 20 of which had launched by end-2024, providing the public with more convenient public services.

The iAM Smart platform allows users to access more than 450 government, public and private organisation services and more than 580 e-forms with a single digital identity. As at end-2024, more than 3.15 million residents had registered as users. To accelerate the development of a smart government, a comprehensive upgrade on iAM Smart is being rolled out so as to achieve a single portal for online government services by end-2025. New functions released in 2024 included online self-registration service for iAM Smart+, iAM Smart Personal Code and a new user interface of iAM Smart, which enhanced user experience.

In 2024, the Digital Economy Development Committee recommended 12 strategies to the government to develop the digital economy, covering five areas: enhancement of the overall digital policy; strengthening digital infrastructure; promoting data as the key driver of digital economy; expediting digital transformation; and developing a sustainable talent strategy.

The \$500 million Digital Transformation Support Pilot Programme provides subsidies on a one-to-one matching basis to eligible small and medium enterprises for adopting e-payment and other ready-to-use basic digital solutions. In December, the programme's coverage was expanded from the retail and food and beverage sectors to tourism and personal services sectors.

A memorandum of understanding was signed with the Cyberspace Administration of China in 2023 to facilitate cross-boundary data flow within the GBA. A pilot arrangement for the first facilitation measure, implemented later in the same year, provided a standard contract template for voluntary adoption and consent-based cross-boundary flow of personal data from the Mainland to Hong Kong. From November 2024, the facilitation measure was fully extended to all sectors in the GBA.

To enhance data governance, the government published *The Principles of Data Governance* in December to foster development of the data-driven digital government and smart city.

New Industrialisation

The Advanced Manufacturing Centre at Tseung Kwan O InnoPark provides a gross floor area of about 108,600 sq m for accommodating high value-added manufacturing processes. Installation of specialised systems in the Microelectronics Centre at Yuen Long InnoPark is planned for completion by 2025. The HKSTPC is also exploring the feasibility of refurbishing buildings that have been returned by lessees or re-entered through enforcement of lease terms for use as advanced manufacturing space, so as to increase the supply of floor area for advanced manufacturing in InnoParks.

The New Industrialisation Funding Scheme subsidises manufacturers on a matching basis to set up new smart production lines in Hong Kong. It funds one-third of the total project cost, or \$15 million, whichever is lower. As at end-2024, over 90 production lines had been supported with total funding of about \$365 million.

The \$10 billion New Industrialisation Acceleration Scheme was launched in September to provide funding support with a matching basis for enterprises engaging in industries of strategic importance, such as life and health technology, AI and data science, advanced manufacturing, and new energy technology industries.

The New Industrialisation and Technology Training Programme subsidises local employees on a matching basis to receive training in advanced technologies. By end-2024, it had provided some \$672 million in funding for training over 26,860 people.

The New Industrialisation Development Office was established in February. The office adopts an industry-oriented approach to promote new industrialisation in Hong Kong, support strategic enterprises to develop their businesses in the city, assist the manufacturing sector in upgrading and transformation by making use of I&T, and provide support for start-ups.

In recent years, the government has liaised with over 130 representative and potential-filled I&T enterprises for the latter to set up or expand business in Hong Kong.

A major task stated in the National Government Work Report in 2024 is to expedite the development of new quality productive forces, which can introduce new industries and new development modes to Hong Kong which will promote economic diversity, thereby enhancing Hong Kong's overall competitiveness.

Use of I&T in Government, Business and Community

The government has fully digitalised all licences, government services involving application and approval and forms. As at end-2024, about 1,480 licences and government services had been digitalised and about 3,800 government forms can be submitted online. If in-person submission or collection of documents is required by law or international practice, applicants only need to visit the government office concerned once.

The government facilitates bureaus and departments to offer electronic payment options for government fees. As at end-2024, the provision of e-payment options had been fully implemented for all government fee items, totalling more than 600, enabling the public to pay through the Faster Payment System, while about 80 government services commonly used by Mainland visitors also supported payments made through Mainland e-wallets.

The government opens up data in machine-readable format on its Open Data Portal for free use. As at end-2024, there were over 5,500 open datasets on the portal, alongside approximately 1,000 spatial datasets released on the Common Spatial Data Infrastructure Portal.

The Consented Data Exchange Gateway enables citizens to authorise government departments to share their personal data within the government, facilitating their use of digital government services and enhancing the operational efficiency of government departments.

The TechConnect Block Vote supports the government to implement I&T projects to enhance operational efficiency and improve public services. As at end-2024, it had supported 158 projects proposed by 35 bureaus or departments.

As at end-2024, the Smart Government Innovation Lab had matched over 130 business needs of departments with technology solutions and arranged proof-of-concept tests for over 80 solutions. Among them, more than 50 projects were being planned for or under pilot implementation. The lab also advocated innovative applications with AI for pilot use in relevant departments to enhance the quality and efficiency of public services.

The government encourages the elderly to use ICT through a web-based learning portal, outreach programme, mobile outreach service stations and enriched ICT training. It also promotes accessible design of websites and mobile applications to benefit the disabled.

The Social Innovation and Entrepreneurship Development Fund, launched in 2013, encourages cross-sectoral collaboration on the development of innovative ideas, products and services to address poverty and social exclusion issues and foster social cohesion. Since its launch to end-2024, 653 projects had been funded benefiting more than 427,000 people. With \$100 million allocated from the fund, the Smart Silver Digital Inclusion Programme for Elders was launched in December to provide training on digital technologies and technical support for those aged 60 or above.

Cooperation with Mainland

The National 14th Five-Year Plan supports Hong Kong's development into an international I&T centre and includes the Hong Kong-Shenzhen Innovation and Technology Park as a major platform of cooperation in the GBA.

About RMB1 billion of R&D funding has been approved for universities and research institutions in Hong Kong. The Ministry of Science and Technology has approved five Mainland branches established by Hong Kong universities to export human genetic resources to Hong Kong for research.

The government promotes technological cooperation with the Mainland through regular mechanisms, including the Mainland/Hong Kong Science and Technology Cooperation Committee, and the Guangdong-Hong Kong Expert Group on Cooperation in Technology and Innovation.

The government collaborates with the Guangdong Provincial Government to promote the Cross-boundary Public Services initiative. Since 2024, self-service kiosks as well as iAM Smart self-registration kiosks have been set up in Mainland cities of the GBA by phases, enabling residents and enterprises to access Hong Kong public services and register for iAM Smart without the need for cross-boundary travel.

The Co-operation Agreement on the Development of New Quality Productive Forces and the Promotion of New Industrialisation was signed between the government and the Ministry of Industry and Information Technology in September. The agreement aims to support Hong Kong in developing new quality productive forces and promoting new industrialisation according to local conditions. It also strengthens exchanges between the two places in the fields of industry and IT, promoting cooperation and joint development in industries where both places have clear advantages.

Websites

Cross-boundary Public Services: www.crossboundaryservices.gov.hk

Cyberport: www.cyberport.com.hk

Digital Policy Office: www.digitalpolicy.gov.hk

Hong Kong Applied Science and Technology Research Institute: www.astri.org

Hong Kong Automotive Platforms and Application Systems R&D Centre: www.apas.org

Hong Kong Council for Testing and Certification: www.hkctc.gov.hk

Hong Kong Productivity Council: www.hkpc.org

Hong Kong Research Institute of Textiles and Apparel: www.hkrita.com

Hong Kong Science and Technology Parks Corporation: www.hkstp.org

Hong Kong-Shenzhen Innovation and Technology Park Limited: www.hsitp.org

iAM Smart: www.iamsmart.gov.hk

Innovation, Technology and Industry Bureau: www.itib.gov.hk

Innovation and Technology Commission: www.itc.gov.hk

InnoHK: www.innohk.gov.hk

Innovation Hub@HK: www.innovationhub.hk

Logistics and Supply Chain MultiTech R&D Centre: www.lscm.hk

Nano and Advanced Materials Institute: www.nami.org.hk

Open Data Portal: www.data.gov.hk

Smart City Portal: www.smartcity.gov.hk