

# LCQ16: Development of innovation and technology

Following is a question by the Hon Chan Chun-ying and a written reply by the Secretary for Innovation and Technology, Mr Alfred Sit, in the Legislative Council today (December 16):

Question:

In October this year, the Fifth Plenary Session of the 19th Central Committee of the Communist Party of China (CPC) adopted the CPC Central Committee's Proposals for Formulating the Fourteenth Five-year Plan on National Economic and Social Development, which put forward "taking scientific and technological self-reliance and self-strengthening as a strategic support for national development". Moreover, it has been reported that the Deputy Director of the Office of the Central Financial and Economic Affairs Commission has recently indicated that, the Central Authorities will further support Hong Kong in reinforcing and enhancing its competitive advantages, and building an international centre for innovation and technology. In this connection, will the Government inform this Council:

(1) whether it has formulated indicators for measuring if Hong Kong has been developed into an international centre for innovation and technology; if so, of the details, and how far the current situation of Hong Kong is from such indicators;

(2) whether it has drawn up a timetable for developing Hong Kong into an international centre for innovation and technology; if so, of the details; if not, the reasons for that; and

(3) as a market research institution has estimated that the global expenditure on digital transformation this year will rise to about \$10 trillion, representing a year-on-year increase of 10.4 per cent, which has reflected that enterprises have been actively struggling for survival amid the epidemic through undergoing digital transformation, whether the Government has detailed plans to assist enterprises in speeding up their digital transformation, and facilitate the industrialisation of their research and development outcomes; if so, of the details; if not, the reasons for that?

Reply:

President,

The Communist Party of China Central Committee's Proposals for Formulating the Fourteenth Five-year Plan on National Economic and Social Development and the Long-Range Objectives Through the Year 2035 indicates clear support for Hong Kong to consolidate and enhance its competitive

advantages in developing into an international innovation and technology (I&T) hub. The current-term Government has been committed to promoting the development of I&T, with a view to injecting new impetus into the economy, improving people's quality of life, and creating quality jobs for young people.

Our reply to the various parts of the question is as follows:

(1) and (2) Hong Kong, being the most international city in the Guangdong-Hong Kong-Macao Greater Bay Area, and even in China, is capable of developing into an international I&T hub. With our strong research and development (R&D) capabilities, world-class universities, advantage as an international and market-oriented economy, robust legal system and intellectual property rights protection regime, etc., coupled with the Government's efforts in promoting I&T, Hong Kong is at an excellent opportunity to develop I&T.

Since the Chief Executive set forth eight major areas for developing I&T in the Policy Address delivered in October 2017, the Government has been investing over 100 billion in promoting I&T development, and actively introducing measures on various areas with good progress.

Among others, on promoting technology research collaboration, we are pressing ahead with the development of the InnoHK research clusters in the Hong Kong Science Park, with a view to pooling top-notch researchers over the world to undertake more collaborative research in Hong Kong, thereby developing Hong Kong as the global hub for research collaboration. The first two InnoHK research clusters are Health@InnoHK and AIR@InnoHK, respectively focusing on healthcare technologies and artificial intelligence and robotics technologies. The first batch of R&D centres is expected to be set up in phases by the first quarter of next year.

We are also taking forward the development of the Hong Kong-Shenzhen Innovation and Technology Park (HSITP) located in the Lok Ma Chau Loop in full swing. The HSITP will become Hong Kong's largest-ever I&T platform, establishing a key base for co-operation in scientific research through converging the world's top-tier enterprises, R&D institutions and higher education institutions for exchange and collaboration with excellent research talent all over the world.

On pooling technology talent, apart from the various measures that nurture local talent, the Government provides a fast-track arrangement through the Technology Talent Admission Scheme launched in mid-2018 for the admission of overseas and Mainland technology talent to undertake R&D work in Hong Kong. The newly announced Policy Address also proposed to set up the Global STEM Professorship Scheme to strengthen our support for the local universities to attract world-renowned I&T scholars as well as their teams to work in Hong Kong. This will enhance Hong Kong's competitiveness in pooling global talent and enable local universities to scale new heights in STEM teaching and research.

The Government monitors the progress of various I&T related measures

through a number of key performance indicators (KPIs). The Policy Address delivered by the Chief Executive in October 2017 has mapped out concrete and clear directions for our I&T development. In 2017, the Innovation and Technology Bureau adopted the KPIs put forward by the Advisory Committee on Innovation and Technology. For example, the Committee's report suggested that in 2020, the public sector expenditure on R&D, the number of start-ups and the amount of venture capital (VC) investment should reach \$13.5 billion (at current prices), 2 500 and \$3 billion per year (at current prices) respectively. The local I&T sector has reached these targets ahead of time in 2018. The public sector expenditure on R&D increased from \$9.29 billion in 2014 to \$13.505 billion in 2018. The number of local start-ups increased from around 1 100 in 2014 to over 3 300 in 2020. The VC investment in Hong Kong increased from \$1.24 billion in 2014 to \$16.3 billion in 2018 and \$9.9 billion in 2019, representing an increase by 12 times and seven times respectively.

Also, in 2018, the gross domestic expenditures on R&D (GERD) (total of public and private sectors) of Hong Kong amounted to \$24.497 billion, representing an increase of 46 per cent from 2014 (see Note), while the GERD as a ratio to Gross Domestic Product in the same period has increased from 0.74 per cent to 0.86 per cent. The Policy Address delivered in October 2017 also raised the target of relevant ratio to 1.5 per cent. The number of R&D personnel increased from about 29 000 in 2014 to nearly 34 000 in 2018. Local I&T companies have won awards time and again in international competitions, whereas a number of local enterprises have become unicorns.

Hong Kong's performance in respect of I&T development was also recognised internationally. According to the rankings announced by the International Institute for Management Development this year, Hong Kong climbed from the 18th place to the seventh on ranking related to technological infrastructure. As for the ranking related to digital competitiveness, the global ranking of Hong Kong raised from the 11th to the fifth. The Digital Intelligence Index report jointly released by Mastercard and the Fletcher School at Tufts University of the United States found that Hong Kong has become one of the world's most digitally advanced economies, ranking second and third in the Asia-Pacific region and the world respectively.

Of course, we understand that I&T are developing rapidly and international competition has become increasingly fierce. The Government will continue to closely communicate and collaborate with stakeholders, with a view to creating favourable conditions for local I&T development and stepping towards the goal of becoming an international I&T hub. We will also review and update our KPIs in this regard from time to time.

(3) Through various measures and funding schemes, the Government encourages different sectors and industries to apply technologies as well as assists enterprises in expediting digital transformation. The Technology Voucher Programme, launched in November 2016, subsidises local enterprises to use technological services and solutions to improve productivity, or to upgrade and transform their business processes. Also, the Government launched the

time-limited Distance Business Programme in May this year under the Anti-epidemic Fund to provide funding support for enterprises to adopt information technology solutions so as to continue to operate and provide services during the epidemic.

In addition, the Government also set up dedicated funds for targeted sectors. For instance, the Construction Innovation and Technology Fund and the Innovation and Technology Fund for Application in Elderly and Rehabilitation Care were set up respectively in 2018 in order to promote application of technology products in the construction sector as well as elderly and rehabilitation care units. In view that the integration of arts and I&T has become a new trend in arts development, the newly announced Policy Address proposed setting up a task force to formulate strategies and measures to develop and promote Art Tech, as well as encouraging the related sectors to apply for funding to implement projects that integrate technology and arts.

The Government attaches great importance to the commercialisation and industrialisation work of local R&D institutions and enterprises. We support the use of local technology products and services through various measures. Firstly, through the Public Sector Trial Scheme under the Innovation and Technology Fund (ITF), the Government supports all policy bureaux, departments and public organisations to try the R&D outcomes of local R&D institutions and technology companies, thereby facilitating the realisation and commercialisation of local R&D outcomes. In addition, the Office of the Government Chief Information Officer established the Smart Government Innovation Lab in April 2019 to drive wider adoption of I&T in government departments and invite industry players to assist departments in adopting various information technology solutions for improving public services, thereby creating more business opportunities for the local start-ups and small and medium enterprises.

Apart from the above, the local R&D Centres undertake industry-driven and market relevant R&D projects, and subsequently transfer the technology to the industry through contract research or licensing arrangement. To further incentivise the commercialisation of R&D results of ITF-funded projects by the R&D Centres, thereby promoting technology transfer activities, since 2017-18, the R&D Centres have been allowed to retain the income generated from the projects for use in strategic activities, such as technology and market analyses, infrastructure building, staff development or experimental projects, etc.

Note: Following international guidelines, the estimates of implicit user cost of R&D facilities has been included in the R&D expenditures as from the reference year of 2018.