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Panel on Commerce and Industry

Meeting on 16 June 2020

**Updated background brief on the innovation and technology development
and re-industrialization policy in Hong Kong**

Purpose

This paper provides: (a) updated background information on the innovation and technology ("I&T") development and re-industrialization policy in Hong Kong; and (b) a summary of views and concerns expressed by members of the Panel on Commerce and Industry ("the Panel") on the related subjects.

Innovation and technology development in Hong Kong

2. The Chief Executive ("CE") announced in the Policy Address in October 2017, the Government's policy to step up its efforts to develop I&T in eight major areas, including: (a) increasing resources for research and development ("R&D"); (b) pooling together technology talent; (c) providing investment funding; (d) providing technological research infrastructure; (e) reviewing existing legislations and regulations; (f) opening up government data; (g) Government to lead changes to procurement arrangements; and (h) strengthening popular science education. The Steering Committee on Innovation and Technology, chaired by CE, has been established to monitor regularly the implementation of the relevant initiatives and measures.

3. R&D is the foundation of I&T. The Administration set a goal in 2017 to double the gross domestic expenditures on R&D ("GERD") as a percentage of the gross domestic product ("GDP") to 1.5% by the end of the current Government's five-year term of office; and to gradually reverse the ratio of public sector expenditure versus private sector expenditure on R&D from government-led to public-private participation, which would make R&D funding more sustainable. To this end, the Administration has launched

various initiatives in respect of R&D investment, talent and infrastructure to attract enterprises to invest more in R&D activities.

4. According to the report "Hong Kong Innovation Activities Statistics 2018" released by the Census and Statistics Department in December 2019, GERD of Hong Kong in 2018 amounted to HK\$24.5 billion (equivalent to 0.86% of Hong Kong's GDP in 2018), representing an increase of 10% from 2017.

Administration's latest measures to promote the innovation and technology development

5. CE and the Financial Secretary ("FS") have respectively announced in the 2019 Policy Address and 2020-2021 Budget the Administration's measures to further promote the development of I&T. Details are set out in the ensuing paragraphs.

Establishment of InnoHK research clusters

6. At the meeting on 29 October 2019, the Panel noted that the Administration had received 65 proposals from world top-notch universities and research institutions for the two *InnoHK* research clusters to be established in the Hong Kong Science Park ("HKSP"), namely "*Health@InnoHK*" that focused on healthcare technologies and "*AIR@InnoHK*" that focused on artificial intelligence/robotics technologies. The first batch of R&D laboratories were expected to be set up progressively in 2020. CE also mentioned in the 2019 Policy Address that the Administration would explore the setting up of the third *InnoHK* research cluster to further promote global collaboration on R&D in Hong Kong.

Phase 2 of the Science Park Expansion Programme

7. It was announced in the 2020-2021 Budget that the Administration would earmark HK\$3 billion for Phase 2 of the Science Park Expansion Programme. The Panel noted at the meeting on 17 March 2020 that the Hong Kong Science and Technology Parks Corporation ("HKSTPC") had commissioned a consultant to conduct a master planning study on HKSP's expansion and would explore on-site and off-site development options. HKSTPC preliminarily proposed to build in HKSP two laboratory annex buildings and specialized laboratories at podiums, involving a gross floor area of about 28 000 sq m.

Innovation and Technology Fund

8. During the discussion with the Administration on the latest progress of the funding schemes under the Innovation and Technology Fund ("ITF") at the meeting on 21 April 2020, the Panel noted that FS had set aside HK\$40 million in the 2020-2021 Budget for launching the proposed STEM Internship Scheme under ITF to subsidize undergraduates and postgraduates taking STEM (i.e. Science, Technology, Engineering and Mathematics) programmes in local universities to enrol in short-term internships. With the Panel's support, the Administration has invited the universities to administer the scheme and will finalize the implementation details with the universities, with a view to launching the scheme within 2020.¹

9. Apart from introducing the STEM Internship Scheme, the Administration has implemented various enhancement measures on the funding schemes under ITF, including:

- (a) extending in March 2020 the coverage of the Public Sector Trial Scheme ("PSTS"), Researcher Programme and Postdoctoral Hub² to all technology companies conducting R&D activities in Hong Kong; and
- (b) enhancing in April 2020 the Technology Voucher Programme by raising the Government's funding ratio in each approved project from two thirds to three fourths and increasing the funding ceiling per applicant and the maximum number of approved projects from HK\$400,000 and four projects to HK\$600,000 and six projects respectively.

Technology Talent Admission Scheme

10. Following CE's announcement in the 2019 Policy Address, the coverage of the Technology Talent Admission Scheme³ ("TechTAS") was extended to

¹ According to the Administration's proposal, STEM undergraduates and postgraduates undertaking short-term internships will be given a monthly subsidy of HK\$10,500 (capped at three months). The short-term internships refer to full-time innovation and technology-related work lasting no less than four consecutive weeks.

² The Financial Secretary also announced in the 2020-2021 Budget that the Researcher Programme and Postdoctoral Hub would be consolidated with a view to providing more flexibility for eligible organizations to engage research and development ("R&D") talents.

³ The scheme was launched in June 2018 to provide a fast-track arrangement for admitting overseas and Mainland technology talent. Successful companies will be given quotas for bringing in such people for undertaking R&D work.

companies outside HKSTPC and Cyberport and to cover new technology areas⁴ in January 2020.

The re-industrialization policy

11. In the 2016 Policy Address, CE introduced the initiative of re-industrialization and announced that it was a potential new area of economic growth for Hong Kong. To grasp the opportunities brought about by the fast development in information and communications technology and Internet of Things technologies, it has been the Administration's intention to attract high value-added industries that are suitable to be based in Hong Kong so that traditional labour-intensive industry could migrate to smart production.

12. Chaired by FS, the Committee on Innovation, Technology and Re-industrialisation was set up in April 2017 to collect views and suggestions from the I&T sector on matters relating to local I&T and re-industrialization in a high-level and cross-bureaux setting.

13. The Administration considers that high-end manufacturing will provide quality jobs for local I&T talents, particularly young graduates, and will generate R&D needs, which is conducive to raising R&D investment by the industries, thus contributing to robust and sustainable development of the R&D work of local universities and research institutes. The Administration has been creating favourable conditions for re-industrialization along the following four major fronts:

- (a) to provide suitable infrastructure to create more space for sustainable development;
- (b) to provide appropriate financial support to encourage industrial R&D and create new advanced manufacturing industries;
- (c) to provide technological support to drive the upgrading and transformation of industries; and
- (d) to nurture and pool talents to boost the productivity and adaptability of the labour force.

⁴ The applicable technology areas of the scheme were extended from seven (i.e. biotechnology, artificial intelligence, cybersecurity, robotics, data analytics, financial technologies and material science) to 13 (including six new areas of 5G communications, Internet-of-Things, integrated circuit design, microelectronics, digital entertainment and green technology).

Latest development

14. With the Panel's support, the Finance Committee ("FC") approved on 15 May 2020 the injection of HK\$2 billion into ITF for launching the Re-industrialisation Funding Scheme to subsidize manufacturers, on a matching basis, to set up smart production lines in Hong Kong; and the injection of another HK\$2 billion to HKSTPC for developing a Microelectronics Centre in the Yuen Long Industrial Estate ("IE"). During the discussion of the relevant proposal, the Panel noted that HKSTPC would designate part of the Government's injection of HK\$10 billion (as approved by FC in July 2018) to offer incentives for advanced manufacturers to set up in IEs. HKSTPC had been working out the relevant details and would decide on the form of support as well as the amounts having regard to the size and needs of enterprises.

Previous discussions

15. The Panel gave views on Hong Kong's I&T development at the meetings on 29 October 2019, 17 March and 21 April 2020. Members also discussed the Administration's measures to promote re-industrialization at the meetings on 17 July 2018 and 21 May 2019. The major views and concerns expressed by members are summarized in the ensuing paragraphs.

Policy direction

16. At the meeting on 21 April 2020, some members considered that the Government's capital injection into ITF over the past 20 years was too meagre and the level of ITF's annual expenditure was far from sufficient for promoting I&T development in Hong Kong. They suggested that the Administration should encourage the R&D Centres, universities and designated public research institutes to submit more project proposals in a bid to apply for funding under ITF so as to boost ITF's annual expenditure and promote I&T development in Hong Kong.

17. The Administration advised that the success rate of ITF applications was comparable to other similar funds operating in other jurisdictions. In the case that an application under the Innovation and Technology Support Programme was not supported by the assessment panel, the Administration would notify the applicant of the reasons and encourage the applicant to submit revised application having regard to the assessment panel's comments. The Administration would continue to encourage the R&D Centres, universities and designated public research institutes to submit more project proposals.

18. Some members suggested that the Administration should focus its effort and ITF's resources on not more than two technology areas as so doing could help create critical mass for maximum impact. Once a new industry based on the identified technology area was successfully developed, it would create new development opportunities for broadening the economic base of Hong Kong and contribute to Hong Kong's GDP growth. They further opined that Hong Kong should focus on the development of R&D investment in medical services, which involved the areas of pharmaceutical products, medical appliances and medical testing, etc.

Nurturing and retaining technology talents

19. At the meetings on 21 May and 29 October 2019, members held that the shortage of talents in the I&T industry had become a worrying trend. They sought details of the Administration's measures to attract Mainland and overseas talents whilst nurturing local I&T talents. Members also urged the Administration to allocate more resources to help enterprises recruit more R&D talents.

20. The Administration advised that recognizing the importance and effectiveness of on-the-job training, it had launched the Reindustrialisation and Technology Training Programme to fund staff of local enterprises on a matching basis to receive technology training. To further enlarge the pool of technology talent in Hong Kong, the Administration would expand the scope of the Researcher Programme and the Postdoctoral Hub to all technology companies conducting R&D activities in Hong Kong; and extend the applicable technology areas and coverage of TechTAS to attract more technology talents from different parts of the world.

21. At the meeting on 21 April 2020, members considered that in order to facilitate the creation of more quality jobs to retain technology talents, the Administration should formulate specific policies to (a) promote the industrialization of local I&T industry by way of, for example, promoting the extensive use of local R&D outcomes in the private market; and (b) incentivize multinational R&D corporations to set up regional offices in Hong Kong.

22. At the same meeting, some members pointed out that according to the findings of a survey conducted by the Administration a few years ago, about 30% of the researchers funded under the Researcher Programme had left the trade after completing the engagement period. In order to formulate effective measures to retain I&T talents, they requested the Administration to consider collecting information on a regular basis about the career pursuits of all the researchers who had completed the engagement period under the Researcher Programme and enumerating the number of those who were still working in the I&T field.

Commercialization of research outcomes

23. At the meetings on 17 March and 21 April 2020, members expressed concerns about the effectiveness of the Administration's policies and the lack of adequate support from HKSTPC to help local universities realize and commercialize their R&D outcomes. They suggested that the Administration should, after trying out new technologies or products under PSTS, continue to work with the relevant research teams to help them commercialize the research outcomes.

24. The Administration advised that it had been proactively promoting the realization and commercialization of local R&D outcomes in Hong Kong. One of the examples was the Multilevel Antimicrobial Polymer coating which was developed by a local university. Moreover, the Administration launched on 9 March 2020 a special call under PSTS for projects to support product development and application of technologies for the prevention and control of the Coronavirus Disease 2019. The Administration further advised that PSTS had significantly contributed to realization of R&D outcomes through actual implementation to identify areas of enhancement and step-by-step improvements to meet the needs of clients.

Establishment of *InnoHK* research clusters

25. At the meeting on 17 March 2020, members asked how the two *InnoHK* research clusters to be established in HKSP would contribute to promoting re-industrialization in Hong Kong.

26. The Administration advised that promoting R&D was the key to I&T development and it formed an important part in re-industrialization in Hong Kong. The establishment of the *InnoHK* research clusters would help capture and consolidate Hong Kong's R&D strengths, as well as promote the development of advanced technologies and the relevant local industries, thereby fostering the development of advanced manufacturing industries that were based on new technologies in the long run.

Reviewing existing legislations and regulations

27. At the meetings on 17 July 2018 and 21 May 2019, members urged the Administration to remove outdated legislative provisions that impeded the I&T development which might in turn facilitate the use of I&T to benefit the elderly and the underprivileged groups. They suggested that the Administration should consider appointing experienced professionals from the I&T industry into the Law Reform Commission to drive such legislative reform.

28. The Administration advised that it had always strived to remove policy obstacles to support the development of the I&T industry and the Policy Innovation and Co-ordination Office had collaborated with relevant bureaux/departments to carry out the relevant work. For example, in a bid to promote the development of electronic sports ("e-sports"), the Administration had announced in 2019 the exemption of a number of e-sports venues from the requirement of obtaining an Amusement Game Centre Licence under the Amusement Game Centres Ordinance (Cap. 435) provided certain specific conditions were met. This was highly encouraging for the e-sports industry. The Administration would continue to introduce measures to support the development of the I&T sector in Hong Kong.

Relocation of production lines back to Hong Kong

29. At the meeting on 17 July 2018, some members enquired about the Administration's policies or measures to encourage private enterprises to relocate their production lines back to Hong Kong. They also suggested that the Administration should consider requiring enterprises which pilot-used local research outcomes to retain part of the relevant production lines in Hong Kong.

30. The Administration advised that Hong Kong had strong upstream R&D capabilities but lacked the capability to commercialize R&D results. The Administration had been actively creating favourable conditions for the industries, through promoting re-industrialization, to encourage enterprises to relocate their production lines back to Hong Kong. The Advanced Manufacturing Centre ("AMC") was under construction in the Tseung Kwan O IE for promoting smart production and catering for modern production processes with less spatial requirement. The future AMC would aim at linking up the upstream capability of Hong Kong with midstream and downstream manufacturing processes. Apart from the provision of land, the Administration would provide additional resources for HKSTPC to attract advanced manufacturing suitable for establishment in IEs.

Council questions

31. Mr WU Chi-wai, Ms Elizabeth QUAT and Mr Jimmy NG asked written questions at the Council meetings of 23 October 2019, 22 and 29 April 2020 respectively on issues relating to the Administration's measures to promote I&T and re-industrialization. Mr Martin LIAO asked an oral question at the Council meeting of 30 October 2019 regarding the attraction of I&T talents.

32. Ms QUAT asked another written question at the Council meeting of 18 March 2020 regarding the progress of establishment of the *InnoHK* research clusters. She also sought details of the Administration's strategies to dovetail the *InnoHK* initiative with Hong Kong's re-industrialization.

33. The questions and the Administration's replies are hyperlinked in the **Appendix**.

Latest position

34. The Administration will update the Panel on 16 June 2020 on I&T development and the re-industrialization policy in Hong Kong. The Panel will also note the written submissions from major stakeholders of relevant industries and representatives from relevant groups/organizations on the subject at the meeting.

Relevant papers

35. A list of relevant papers is in the **Appendix**.

List of relevant papers

Date of meeting	Meeting	Paper
17/7/2018	Panel on Commerce and Industry	<p>Administration's paper on "Government's measures to promote 'Re-industrialisation' and the latest development of the Hong Kong Science Park and Industrial Estates" (LC Paper No. CB(1)1238/17-18(04))</p> <p>Updated background brief on the development of Hong Kong Science Park and Industrial Estates, and the policy on re-industrialization prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1238/17-18(05))</p> <p>Administration's follow-up paper (LC Paper No. CB(1)299/18-19(01))</p> <p>Minutes of meeting (LC Paper No. CB(1)1402/17-18)</p>
21/5/2019	Panel on Commerce and Industry	<p>Administration's paper on "New measures to promote 're-industrialisation' " (LC Paper No. CB(1)1046/18-19(03))</p> <p>Updated background brief on the re-industrialization policy and Industrial Estates prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1046/18-19(04))</p> <p>Minutes of meeting (LC Paper No. CB(1)1248/18-19)</p>
23/10/2019	Council	<p>Question No. 20 on "Innovation, technology and re-industrialisation" raised by Hon WU Chi-wai (Government press release)</p>

Date of meeting	Meeting	Paper
29/10/2019	Panel on Commerce and Industry	<p>Administration's paper on "2019 Policy Address - Policy initiatives of Innovation and Technology Bureau" (LC Paper No. CB(1)34/19-20(05))</p> <p>Minutes of meeting (LC Paper No. CB(1)246/19-20)</p>
30/10/2019	Council	<p>Question No. 1 on "Attracting innovation and technology talents" raised by Hon Martin LIAO (Hansard) (page 660 – 670)</p>
17/3/2020	Panel on Commerce and Industry	<p>Administration's paper on "Latest development of the Hong Kong Science Park and Industrial Estates" (LC Paper No. CB(1)449/19-20(03))</p> <p>Updated background brief on the Hong Kong Science Park and Industrial Estates prepared by the Legislative Council Secretariat (LC Paper No. CB(1)449/19-20(04))</p> <p>Minutes of meeting (LC Paper No. CB(1)604/19-20)</p>
18/3/2020	Council	<p>Question No. 19 on "Promoting development of innovation and technology" raised by Hon Elizabeth QUAT (Government press release)</p>
21/4/2020	Panel on Commerce and Industry	<p>Administration's paper on "Latest progress of the Innovation and Technology Fund" (LC Paper No. CB(1)535/19-20(03))</p> <p>Updated background brief on the funding schemes under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)535/19-20(04))</p>

Date of meeting	Meeting	Paper
22/4/2020	Council	Question No. 20 on "Steering Committee on Innovation and Technology" raised by Hon Elizabeth QUAT (Government press release)
24/4/2020, 8/5/2020 & 15/5/2020	Finance Committee	Administration's paper on the Re-industrialisation Funding Scheme and equity in the Hong Kong Science and Technology Parks Corporation for developing a Microelectronics Centre (FCR(2019-20)40)
29/4/2020	Council	Question No. 15 on "Promoting research and development activities" raised by Hon Jimmy NG (Government press release)