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**Panel on Commerce and Industry**

**Meeting on 19 June 2018**

**Updated background brief on the Research and Development Centres**

**Purpose**

This paper provides updated background information on the Research and Development ("R&D") Centres set up under the Innovation and Technology Fund ("ITF").<sup>1</sup> It also summarizes the views and concerns expressed by members on the subject matter during previous discussions.

**Background**

2. In June 2005, the Finance Committee ("FC") approved a total commitment of \$273.9 million under ITF for the establishment of the following four R&D Centres and their first five-year operation up to 31 March 2011:

- (a) Automotive Parts and Accessory Systems R&D Centre ("APAS");
- (b) Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies ("LSCM");
- (c) Hong Kong Research Institute of Textiles and Apparel ("HKRITA"); and
- (d) Nano and Advanced Materials Institute ("NAMI").

3. The four ITF-funded R&D Centres were established in April 2006. At the same time, the R&D Centre for Information and Communications Technologies ("ICT") was also set up under the Hong Kong Applied Science and Technology Research Institute ("ASTRI") with its operating expenditure

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<sup>1</sup> The Innovation and Technology Fund was set up as a statutory fund under the Public Finance Ordinance (Cap. 2) by resolution of the Legislative Council on 30 June 1999. Since establishment, it has been the Government's main vehicle to finance projects that contribute to innovation and technology upgrading in the manufacturing and services industries, as well as to support the development of the industries.

funded separately by the Government's annual recurrent subvention. Unlike the other four R&D Centres which have been established as independent legal entities, ICT has been established within the existing operational infrastructure of ASTRI, which is a limited company wholly owned by the Government. The five R&D Centres served as focal points to drive and coordinate applied R&D and to promote commercialization of R&D results and technology transfer.

4. In June 2009, having regard to the performance of the R&D Centres after an interim review, FC approved an increase in the funding commitment by \$369 million to extend the operation of four ITF-funded R&D Centres for three years up to 31 March 2014.

#### Comprehensive reviews on the Research and Development Centres

5. In 2011, the Administration conducted a comprehensive review on the operation and overall performance of the R&D Centres for their first five years. With the support of the Panel on Commerce and Industry ("the Panel") and having regard to the outcome of the comprehensive review, FC approved a commitment of \$275.3 million in May 2012 to support the continued operation of NAMI and APAS for another three years up to 31 March 2017.<sup>2</sup> FC further approved an additional grant of \$100.8 million under ITF in January 2014 to support the continued operation of HKRITA and LSCM for another two years up to 31 March 2017.<sup>3</sup> Their industry contribution target was also raised to 20%.

6. The Administration conducted in 2015 another comprehensive review of the operation of the R&D Centres for the four-year period from 2011-2012 to 2014-2015 to map out the way forward and long-term funding

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<sup>2</sup> For Hong Kong Research Institute of Textiles and Apparel ("HKRITA") and Hong Kong Research and Development ("R&D") Centre for Logistics and Supply Chain Management Enabling Technologies ("LSCM") which had not achieved an industry contribution of 15% in their first five years, their operation period was initially extended to 31 March 2015. The Administration undertook to closely monitor/review the performance of HKRITA and LSCM during a two-year observation period ending March 2013 (i.e. two years after the comprehensive review on the R&D Centres in 2011) with a revised industry contribution target of 18%.

<sup>3</sup> At the meetings of the Panel on Commerce and Industry on 18 June and 19 November 2013, members were briefed by the Administration that both HKRITA and LSCM had exceeded the industry contribution target of 18% during the two-year observation period ending March 2013 and their performance had shown sustained development and was generally satisfactory.

arrangements of the R&D Centres. The performance and operation of ASTRI were also covered in the review. Despite the different funding arrangements for operating expenditure, ASTRI was subject to the same mechanism of performance monitoring and expected to meet the same industry contribution target. In December 2015, FC approved an additional funding allocation of \$677.6 million from ITF to support the operation of the R&D Centres up to 31 March 2021.

7. Since 2005, a total of \$1,696.6 million has been approved by FC to fund the operation of the R&D Centres.

#### Latest development of the Research and Development Centres

8. According to the Administration, the R&D Centres not only contribute to the applied research in key areas, their work and R&D results also help to promote innovation and technology ("I&T") development. Through undertaking different type of projects which include platform projects,<sup>4</sup> collaborative projects<sup>5</sup> and seed projects,<sup>6</sup> the R&D Centres work closely with the industry, thereby encouraging investment in R&D, promoting applied research and driving the commercialization of R&D results. Meanwhile, the Innovation and Technology Bureau would develop the I&T industry and nurture emerging industries, and continue to deepen Hong Kong's cooperation with the Mainland and overseas on I&T, demonstrating Hong Kong's strength as the "super-connector" for Hong Kong, the Mainland and the rest of the world. This would also be an important area of work of the R&D Centres.

#### New performance indicators from 2017-2018 onwards

9. Following the suggestions made by members during the discussion of the additional allocation to the R&D Centres in December 2015, the

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<sup>4</sup> The industry contribution of platform projects is at least 10% of the project cost, with a cash rebate equivalent to 40% of the expenditure provided under R&D Cash Rebate Scheme ("CRS"). The industry sponsor(s) will not own the project intellectual property ("IP").

<sup>5</sup> The industry contribution of collaborative projects is at least 30% (for R&D Centre projects only) or 50% (for non-R&D Centre projects) of the project cost, with a cash rebate equivalent to 40% of the expenditure provided under CRS. The industry sponsor(s) will be entitled to utilize the project IP exclusively for a defined period or own the project IP.

<sup>6</sup> Seed projects are more forward-looking and exploratory projects that aim to provide foundation work for future platform/collaborative projects. No industry contribution is required for seed projects. The funding amount is capped at \$2.8 million per project.

Administration set new performance indicators to assess the R&D Centres' performance in conducting R&D in collaboration with the industry in order to promote the latter's overall technological level. One of the indicators is the level of income received from the industry.<sup>7</sup> From 2017-2018 onwards, the Administration raised the target for the indicator to 30%. The Administration also set other performance indicators, including the number of R&D projects involving industry participation, the number of companies participating in the R&D projects, the number of organizations benefitting from the Public Sector Trial Scheme ("PSTS"), the number of interns engaged, and the number of patents filed, etc.

### Relaxing the rule on commercialization income for Research and Development Centres

10. While it is not a requirement for universities or other public research institutions, the five R&D Centres have to return their income generated from ITF-funded projects (for example, through commercialization of project outcomes) to ITF. The Administration considered that such requirement for the R&D Centres is not conducive to incentivizing commercialization of R&D results and limits the pursuit of more strategic and non-project-specific initiatives. In this regard, the Administration has recently allowed the R&D Centres to retain the income generated from ITF-funded projects for use in strategic activities<sup>8</sup> such as technology and market analyses, infrastructure building, and staff development or experimental projects.

### **Previous discussions by the Panel on Commerce and Industry**

11. The major views and concerns expressed by members at the meetings on 21 June 2016 and 20 June 2017 are summarized in the ensuing paragraphs.

### Progress of commercialization of Research and Development results

12. At the meeting on 21 June 2016, members were concerned on the progress of commercialization of the R&D results. They called on the R&D Centres to step up their efforts in promoting project technologies to the industries and foster commercial application of the R&D deliverables in the private sector. They also opined that the R&D Centres should put strong emphasis on collaboration with the industry and continue to conduct more

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<sup>7</sup> The indicator mainly covers sponsorship from the industry for their R&D projects, income arising from licensing/royalty and contract services, and other income.

<sup>8</sup> The governing boards of the R&D Centres may recommend to the Innovation and Technology Commission the usage of the reserve. The R&D Centres are required to submit annual plans and audit reports for the reserve fund.

demand-driven applied R&D projects to facilitate technology transfer to the industry. The Administration advised that the R&D Centres had become more proactive, in recent years, in reaching out to industry partners in conducting collaborative projects, which had a higher chance for the project outcomes to be adopted by the industry partners who would commercialize the project outcomes.

13. At the meeting on 20 June 2017, members enquired about the promotion effort for the deliverables of the R&D Centres as they were hardly aware of the promotion in the media for such deliverables, such as chargers for electric vehicles. The Administration advised that one prominent example of the R&D deliverables marketed locally was a breathable and bacteria-killing facemask arising from a collaborative project which had been successfully commercialized and was available for sale in local pharmacies. Other widely used R&D deliverables involved the use of radio-frequency identification technology by the Airport Authority Hong Kong and Hongkong Post for self-check-in luggage and convenient parcel collection respectively.

#### Promoting the use of Research and Development results in the public sector

14. At the meeting on 21 June 2016, members considered that the public sector should widely apply the R&D results with a view to enhancing the commercialization of the R&D results in the open market. Government departments should be advised to express their intention to adopt the relevant R&D results in the early stage of the R&D projects. At the meeting on 20 June 2017, some members pointed out that the R&D Centres and the partner companies of collaborative projects had faced difficulty in promoting the use of R&D results in the public sector. These members urged the Administration to render policy support and other relevant assistance to the R&D Centres and their partner companies to foster wider application of the R&D results in different sectors; and to enhance the coordination between relevant government departments in providing ample assistance to the R&D Centres.

15. The Administration advised that R&D Centres had been promoting the adoption of local technology products and services through PSTS. Under PSTS, funding support was provided for producing prototypes/samples and conducting trials in the public sector to facilitate and promote the realization and commercialization of the R&D results. Government departments and subvented organizations had been testing the application of various R&D results through PSTS. In addition, the Innovation and Technology Fund for Better Living was launched to encourage and fund the use of I&T in projects that would bring more convenience, comfort and safety to daily living, or address the needs of specific community groups.

## Development directions of the Research and Development Centres

16. At the meeting on 20 June 2017, some members suggested that the Administration should strengthen the promotion of commercialization of R&D results of the R&D Centres in the cities of the Pearl River Delta ("PRD") and the Guangdong-Hong Kong-Macao Bay Area ("Bay Area"), as well as the neighbouring cities of Southeast Asia. The Administration should also identify R&D opportunities in the Bay Area for the advancement of I&T. The Administration advised that R&D results commercialized by local enterprises were not necessarily confined to the local market and the technology concerned could also be transferred to non-local enterprises. The R&D Centres would explore opportunities for collaboration with companies and organizations in such regions for promoting applied research and driving the commercialization of R&D results.

## Vetting mechanism and assessment framework

17. At the same meeting, some members enquired about the vetting mechanism and assessment framework in relation to R&D projects proposed by the R&D Centres. The Administration advised that funding applications were first vetted by expert panels and then reviewed by the Innovation and Technology Commission to ensure compliance with the funding guidelines. For approved projects, the R&D Centres were required to submit regular progress reports, final report, audited accounts and post-project evaluation report regarding the efforts in publicizing and transferring the technologies of the project deliverables, as well as the quantitative measurement on the adoption of the project results by the industry.

## Nurturing of talents

18. At the meeting on 21 June 2016, some members suggested that the Administration should promote to the young people the advantages and benefits of joining the R&D sector, especially through the electronic media and social media, so as to attract young talents to join the industry. At the meeting on 20 June 2017, some members enquired whether the Administration had studied the supply of local talents for the R&D industry and its measures to ensure the steady supply of talents in areas such as financial technology ("fintech") to cope with the development needs of the cities in PRD and the Bay Area.

19. The Administration advised that it had attached great importance to the nurturing of talents for the R&D industry. Under the Internship Programme, about 70% of the interns had eventually pursued a career in I&T. In order to support the development of fintech in Hong Kong, ASTRI and the Hong Kong Monetary Authority ("HKMA") jointly launched the Fintech Career Accelerator Scheme in December 2016, through which banks and

HKMA would offer fintech-related internships for university students.

### Others

20. At the meeting on 20 June 2017, some members enquired about the rationale for setting the target for the new performance indicator in respect of the income received from industry at 30% from 2017-2018 onwards. The Administration advised that the performance of R&D Centres was not necessarily reflected solely by the level of industry contribution. The Administration would include a number of new performance indicators in its subsequent annual reports to the Panel to cover their performance in other areas.

21. The Administration was requested to include, in its subsequent annual reports to the Panel, information on the R&D Centres' performance, such as the number of R&D projects involving industry participation, number of companies participating in the R&D projects, number of organizations benefitting from PSTS, number of interns engaged, and number of patents filed, etc.

### **Latest position**

22. The Administration will brief the Panel on 19 June 2018 on the operation of the R&D Centres in 2017-2018.

### **Relevant papers**

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

Council Business Division 1  
Legislative Council Secretariat  
11 June 2018

**List of relevant papers**

Date of meeting	Meeting	Paper
16/6/2015	Panel on Commerce and Industry	<p>Administration's paper on "Progress report of Research and Development Centres for 2014-2015 cum comprehensive review on Research and Development Centres for 2011-2012 to 2014-2015"  <a href="#">(LC Paper No. CB(1)971/14-15(03))</a></p> <p>Updated background brief on Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat  <a href="#">(LC Paper No. CB(1)971/14-15(04))</a></p> <p>Administration's follow-up paper on "Administrative support in R&amp;D Centres"  <a href="#">(LC Paper No. CB(1)1130/14-15(01))</a></p> <p>Minutes of meeting  <a href="#">(LC Paper No. CB(1)1223/14-15)</a></p>
4/12/2015 & 11/12/2015	Finance Committee	<p>Administration's paper on Research and Development Centres  <a href="#">(FCR(2015-16)33)</a></p> <p>Minutes of meeting  <a href="#">(LC Paper No. FC165/15-16)</a>  <a href="#">(LC paper No. FC166/15-16)</a>  <a href="#">(LC Paper No. FC202/15-16)</a>  <a href="#">(LC Paper No. FC203/15-16)</a></p>



Date of meeting	Meeting	Paper
21/6/2016	Panel on Commerce and Industry	<p>Administration's paper on "Progress report on Research and Development Centres for 2015-2016"  <a href="#">(LC Paper No. CB(1)1045/15-16(05))</a></p> <p>Updated background brief on the promotion of research and development and the Research and Development Centres prepared by the Legislative Council Secretariat  <a href="#">(LC Paper No. CB(1)1045/15-16(06))</a></p> <p>Minutes of meeting  <a href="#">(LC Paper No. CB(1)1197/15-16)</a></p>
20/6/2017	Panel on Commerce and Industry	<p>Administration's paper on "Progress report on Research and Development Centres for 2016-2017"  <a href="#">(LC Paper No. CB(1)1144/16-17(03))</a></p> <p>Updated background brief on the Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat  <a href="#">(LC Paper No. CB(1)1144/16-17(04))</a></p> <p>Administration's follow-up papers on "Number of patents filed and mechanism for managing research and development projects by the Research and Development Centres"  <a href="#">(LC Paper No. CB(1)1415/16-17(01))</a></p> <p>Minutes of meeting  <a href="#">(LC Paper No. CB(1)1382/16-17)</a></p>