

立法會
Legislative Council

LC Paper No. CB(1)1045/15-16(06)

Ref. : CB1/PL/CI

Panel on Commerce and Industry

Meeting on 21 June 2016

Updated background brief on the promotion of research and development and the Research and Development Centres

Purpose

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

Background

2. Following consultation with the Panel on Commerce and Industry ("the Panel") on 17 May 2005, the Administration submitted a funding proposal to the Finance Committee ("FC") for the establishment of four R&D Centres, namely Automotive Parts and Accessory Systems R&D Centre ("APAS"), R&D Centre for Logistics and Supply Chain Management Enabling Technologies ("LSCM"), Hong Kong Research Institute of Textiles and Apparel ("HKRITA") and Nano and Advanced Materials Institute ("NAMI"), to drive and co-ordinate applied R&D in selected focus areas and to promote commercialization of R&D outcome. On 24 June 2005, FC approved a total commitment of \$273.9 million under ITF for the establishment of the four

¹ The Innovation and Technology Fund ("ITF") was set up as a statutory fund under the Public Finance Ordinance (Cap. 2) by resolution of the Legislative Council on 30 June 1999. On 9 July 1999, the Finance Committee ("FC") approved the proposed injection of \$5 billion into ITF and ITF came into operation on 1 November 1999. On 27 February 2015, FC approved a further injection of \$5 billion into ITF. ITF is currently administered by the Innovation and Technology Commission ("ITC") and comprises five programmes, namely, the Innovation and Technology Support Programme, the University-Industry Collaboration Programme, the General Support Programme, the Enterprise Support Scheme and the R&D Cash Rebate Scheme.

R&D Centres and their first five-year operation up to 31 March 2011.

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 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. On 19 June 2009, having regard to the performance of the R&D Centres after an interim review, FC approved a further increase in the funding commitment by \$369 million to extend the operation of the APAS, LSCM, HKRITA and NAMI for three years up to 31 March 2014.

The comprehensive review on the Research and Development Centres in 2011

5. In 2011, the Government 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 and having regard to the outcome of the review, FC approved an additional commitment of \$275.3 million on 11 May 2012 to support the continued operation of NAMI and APAS for another three years up to 31 March 2017.

6. For HKRITA and 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. While the operation of HKRITA was extended up to 31 March 2015, no additional funding was required as its estimated total expenditure of \$140.2 million by 31 March 2015 could be adequately covered by its approved commitment of \$153.6 million. 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 last review) with a revised industry contribution target of 18%.

7. At the Panel meetings 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 from 2011-2013 and their performance had shown sustained development and was generally satisfactory. With the support of the Panel, FC further approved an additional grant of \$100.8 million under the ITF on 24 January 2014 to support the continued operation of the

HKRITA (\$44.1 million) and the LSCM (\$56.7 million) for another two years up to 2016-2017. Their industry contribution target was also raised to 20%.

8. Taken together, the total funding commitment approved by FC for the operating expenditure of the four R&D Centres for a total of 11 years (from April 2006 up to 31 March 2017) is \$1,019 million. The R&D expenditure of the R&D Centres are funded separately out of ITF on a project basis.

The comprehensive review on the R&D Centres in 2015

9. Further to the review on the R&D Centres conducted in 2011 covering the period from 2006 to 2011, the Government conducted in early 2015 a 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 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. The Administration briefed members of the Panel at its meeting on 16 June 2015 on the findings and recommendations of the review, including the proposal to extend the operation of the R&D Centres under ITF for four more years to 31 March 2021 with an additional funding commitment from ITF of \$677.6 million for the four R&D Centres funded by ITF.

10. Subsequently, FC approved the additional funding allocation of \$677.6 million from ITF on 11 December 2015 to support the continued operation of the four ITF-funded R&D Centres for another four years up to 2020-2021.

Views and concerns expressed by Members

Deliberations of the Panel on Commerce and Industry

11. Panel members received annual updates on the operation of the R&D Centres. In particular, Panel members were also briefed on the comprehensive reviews on the R&D Centres' operation and overall performance for the first five-year period (covering the period from 2006-2007 to 2010-2011) and the following four-year period (covering the period from 2011-2012 to 2014-2015) at the Panel meetings on 20 December 2011 and 16 June 2015. The Panel generally supported the role of R&D Centres to spearhead the advancement of applied R&D of Hong Kong, and hoped that the commercialization of local R&D results could bring about wider social and economic benefits to the community. The major concerns expressed by members are summarized in the ensuing paragraphs.

Cost-effectiveness of the Research and Development Centres

12. Members enquired about the difficulties and challenges encountered by the R&D Centres in terms of their operation and development, as well as the commercialization of R&D results, at the meetings on 17 June 2014 and 16 June 2015 respectively.

13. As regards the commercialization of R&D results, at the meeting on 17 June 2014, some of the representatives of the R&D Centres replied that one of the key challenges was to identify and develop the technologies that were commercially viable and could address the industry's demands.

14. At the meeting on 16 June 2015, some members noted that the total operating expenditure of the R&D Centres constituted a sizeable proportion of their annual R&D expenditure, and urged the R&D Centres to proactively explore ways to lower the operating expenditure. The Administration replied that the operating expenditure of the R&D Centres covered the cost for administrative support which comprised expenses related to the operation of the R&D Centres' headquarters, including electricity, other utilities, accommodation cost, salaries and related costs for administration staff, as well as the expenditure for direct research, and expenses related to commercialization and marketing. At members' request, the Administration provided the breakdown of operating expenditure of the five R&D Centres, including the cost of providing administrative support and the respective ratio of the cost of administration support to the annual R&D expenditure of each R&D Centre in 2014-2015 vide LC Paper No. CB(1)1130/14-15(01) after the meeting.

Progress of commercialization of Research and Development results

15. During the discussion at the meeting on 16 June 2015, some members called on the R&D Centres to also actively foster commercial application of the R&D deliverables in the private sector, besides promoting the use of R&D results in the public sector through the Public Sector Trial Scheme.

16. The Administration replied that in recent years, the R&D Centres had become more proactive 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 be responsible for commercializing the project outcomes.

17. At the meeting on 16 June 2015, some members expressed particular concern about some projects or technologies of the R&D Centres as they had not been successfully commercialized in the local market. To foster commercialization of R&D outcomes and generate commercial benefits for the commerce and industry sectors in Hong Kong, some members highlighted the importance of setting quantifiable commercialization targets as success

indicators to evaluate the performance of the R&D Centres. The Administration replied that it would monitor the progress of commercialization of the R&D Centres and review whether other relevant performance indicators should be set to evaluate the R&D Centres' performance in R&D achievements, collaboration with the industry, commercialization and technology transfer etc.

Industry participation and collaboration

18. Some members noted with concern that the industry was not very keen on collaborating with the R&D Centres in conducting R&D projects as the existing funding arrangements under ITF were too restrictive while the project vetting requirements and procedures were too complex and cumbersome to facilitate worthy projects to be undertaken quickly. The Administration responded that it would conduct a comprehensive review of the ITF to explore areas of improvements. It would take a critical look at the long-term funding arrangements for R&D projects and for the R&D Centres, including support for private sector. Subsequently, the Panel was briefed on the comprehensive review of ITF, the final report on comprehensive review of ITF and the comprehensive review on R&D Centres for 2011-2012 to 2014-2015 at its meetings on 18 February and 18 November 2014, and 16 June 2015 respectively.

Deliberations of the Finance Committee

19. FC discussed the funding proposal of \$677.6 million from ITF to support the continued operation of the four R&D Centres for another four years up to 2020-21 at its meetings on 4 December and 11 December 2015. The major views and concerns of members are summarized in the ensuing paragraphs.

Innovation and technology policies

20. Some members opined that the Administration should strengthen R&D-related projects and encourage enterprises to give extra injections of investment into R&D. These members suggested that the Administration should set a target for the development of I&T in terms of percentage share in the Gross Domestic Product ("GDP"). They suggested that the Administration should fully subsidize R&D projects and attract talents to develop their career in Hong Kong. Other members criticized the Administration's failure to offer tax concessions for R&D projects and concessions in terms of land grant.

21. At the meeting on 4 December 2015, the Administration replied that it intended to step up its efforts in promoting R&D development, including encouraging the private sector to increase the investment in the relevant fields, and was considering using the percentage share of R&D expenditures

in the GDP as one of the reference indicators of development. As regards the recommendation concerning a taxation policy, further discussions were needed with the relevant policy bureau and stakeholders. The Administration further advised at the meeting on 11 December 2015 that the role of the Government was to provide assistance to facilitate I&T developments, such as sharing the risks of R&D.

Development directions of Research and Development Centres

22. Some members opined that as the development directions of R&D Centres were led by the industry concerned, the results attained might not be able to benefit the whole industry or catch up with the leading international development. Some members also noted that there was a recent trend for textiles and apparel industry to relocate to Southeast Asia. They requested the Administration to elaborate the future development directions of HKRITA, and the differences between such directions and those of other regions, such as Taiwan and South Korea.

23. At the meeting on 4 December 2015, the Administration and the representative of HKRITA advised that the development directions of HKRITA included areas where it had key competitive opportunities, such as high performance materials, wearable electronics, green materials, sustainable manufacturing, agile supply chains, and the sale of their patents. When comparing with other regions, such as Taiwan and South Korea, Hong Kong's development directions placed more emphasis on cotton and woolen clothing materials. The Administration added at the meeting on 11 December 2015 that the Government's plan was to attract the development of smart production of high value-added industries in Hong Kong, with a view to achieving the goal of re-industrialization.

Performance indicators of Research and Development Centres

24. A number of members noted that the income generated from the commercialization of R&D results of the four R&D Centres was on the low side. Some of these Members called on the Administration to put forward quantifiable performance indicators in respect of the results of commercialization and re-industrialization, as well as setting a timetable for conducting a value-for-money audit.

25. At the meeting on 4 December 2015, the Administration advised that the benefits of R&D results were not necessarily reflected in the commercialization income. Moreover, the Administration would also make reference to other data, such as the level of sponsorship from the industries received by the R&D Centres. At the meeting on 11 December 2015, the Administration replied that it was considering the inclusion of a number of factors as performance indicators, and one such might be changed to "income from the industries", which would comprise sponsorship from the industries,

licensing fees/royalties and contract services. Another indicator was the number of participating organizations under the Public Sector Trial Scheme. The Administration hoped it could formulate suitable performance indicators with regard to the operations of the R&D Centres from 2017 to 2021, and would continue to work jointly with the R&D Centres in this regard and report the progress to the Panel in a timely manner.

Council meeting

Question

26. At the Council meeting of 25 February 2015, Mr Martin LIAO asked an oral question about whether the Administration would implement new measures or provide other incentives, such as tax concessions, apart from the measures currently implemented by ITC, to encourage and induce enterprises and universities to deploy resources for R&D of innovation and technology. The Administration replied that to encourage and induce enterprises to deploy resources for R&D, the R&D Cash Rebate Scheme provided cash rebate on the investment by enterprises in conducting R&D projects either funded by ITF or in partnership with designated local public research institutions. ITC also increased the level of cash rebate from 10% to 30% with effect from 1 February 2012. Besides, under the current tax system, the Administration allowed full deduction on expenditure incurred by a business enterprise for carrying out R&D related to its trade, profession or business, including capital expenditure, such as for the purchase of plant or machinery.

27. At the Council meeting of 3 February 2016, Mr Charles MOK asked a written question about whether the Administration would request various stakeholders, including the R&D Centres, among others, to compile and publish more diversified statistics so as to increase their transparency to facilitate monitoring. The Administration replied that all stakeholders, including the R&D Centres, published their financial statements, progress reports, and other different information and data through different channels, including the Government Budget, annual reports, websites and press releases. Each institution would also report its work progress and outcomes regularly to the relevant committees of the Legislative Council.

Examination of the Estimates of Expenditure 2016-2017

28. At the special meeting of FC on 7 April 2016 to examine the Estimates of Expenditure 2016-2017, Members enquired whether the Government planned to raise the industry contribution target of the five R&D Centres to the original level of 40% after the review in 2015. The Administration replied that in 2016-2017, the Government would continue to apply the current industry contribution target of 20% as this should give the R&D Centres sufficient incentive to proactively reach out to the industry and allow flexibility for individual R&D Centres to undertake platform projects to

continue to build up their technical expertise and capabilities.

Latest position

29. The Administration will report on the Government's policy relating to the promotion of R&D and the operation of R&D Centres in 2015-2016 to the Panel on 21 June 2016.

Relevant papers

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

Council Business Division 1
Legislative Council Secretariat
15 June 2016

Appendix

List of relevant papers

Date of meeting	Meeting	Paper
17/5/2005	Panel on Commerce and Industry	<p>Administration's paper on "Implementation of new strategic framework for innovation and technology development" (LC Paper No. CB(1)1496/04-05(03))</p> <p>Background brief on new strategic framework for innovation and technology development prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1497/04-05)</p> <p>Minutes of meeting (LC Paper No. CB(1)1794/04-05)</p>
24/6/2005	Finance Committee	<p>Administration's paper on establishment of Research and Development Centres (FCR(2005-06)21)</p> <p>Minutes of meeting (LC Paper No. FC125/04-05)</p>
19/5/2009	Panel on Commerce and Industry	<p>Administration's paper on "Mid-term review of the Research and Development Centres: Funding proposal" (LC Paper No. CB(1)1551/08-09(05))</p> <p>Updated background brief on Research and Development Centres under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1286/08-09(08))</p> <p>Minutes of meeting (LC Paper No. CB(1)2643/08-09)</p>
19/6/2009	Finance Committee	<p>Administration's paper on establishment of Research and Development Centres (FCR(2009-10)27)</p>

Date of meeting	Meeting	Paper
		Minutes of meeting (LC Paper No. FC19/09-10)
17/4/2012	Panel on Commerce and Industry	Administration's paper on "Funding proposals for Research and Development Centres" (LC Paper No. CB(1)1549/11-12(03)) Updated background brief on Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1549/11-12(04)) Minutes of meeting (LC Paper No. CB(1)1809/11-12)
11/5/2012	Finance Committee	Administration's paper on Research and Development Centres (FCR(2012-13)21) Minutes of meeting (LC Paper No. FC183/11-12)
18/6/2013	Panel on Commerce and Industry	Administration's paper on "Progress report on Research and Development Centres 2012-2013" (LC Paper No. CB(1)1282/12-13(05)) Background brief on Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1282/12-13(06)) Minutes of meeting (LC Paper No. CB(1)1726/12-13)
19/11/2013	Panel on Commerce and Industry	Administration's paper on "Extension of the operation of Research and Development Centres" (LC Paper No. CB(1)290/13-14(03))

Date of meeting	Meeting	Paper
		<p>Updated background brief on Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)290/13-14(04))</p> <p>Minutes of meeting (LC Paper No. CB(1)747/13-14)</p>
24/1/2014	Finance Committee	<p>Administration's paper on Research and Development Centres (FCR(2013-14)55)</p> <p>Minutes of meeting (LC Paper No. FC73/13-14)</p>
18/2/2014	Panel on Commerce and Industry	<p>Administration's paper on "Comprehensive review of the Innovation and Technology Fund – proposed improvement measures" (LC Paper No. CB(1)885/13-14(03))</p> <p>Background brief on improvements to the Innovation and Technology Fund to promote innovation and application of research and development outcomes prepared by the Legislative Council Secretariat (LC Paper No. CB(1)885/13-14(04))</p> <p>Minutes of meeting (LC Paper No. CB(1)1234/13-14)</p>
17/6/2014	Panel on Commerce and Industry	<p>Administration's paper on "Progress report on Research and Development Centres for 2013-2014" (LC Paper No. CB(1)1595/13-14(05))</p> <p>Updated background brief on Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1595/13-14(06))</p>

Date of meeting	Meeting	Paper
		Minutes of meeting (LC Paper No. CB(1)1976/13-14)
18/11/2014	Panel on Commerce and Industry	Administration's paper on "Comprehensive review of the Innovation and Technology Fund" (LC Paper No. CB(1)211/14-15(03)) Updated background brief on improvements to the Innovation and Technology Fund to promote innovation and application of research and development outcomes prepared by the Legislative Council Secretariat (LC Paper No. CB(1)211/14-15(04)) Minutes of meeting (LC Paper No. CB(1)345/14-15)
25/2/2015	Council	Question No. 1 on "Measures to enhance competitiveness of Hong Kong" raised by Mr Martin LIAO (Hansard) (Page 7033-7040)
16/6/2015	Panel on Commerce and Industry	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" (LC Paper No. CB(1)971/14-15(03)) Updated background brief on Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)971/14-15(04)) Administration's follow-up paper on "Administrative support in R&D Centres" (LC Paper No. CB(1)1130/14-15(01)) Minutes of meeting (LC Paper No. CB(1)1223/14-15)

Date of meeting	Meeting	Paper
4/12/2015 (Paper issued on 20/11/2015)	Finance Committee	Administration's paper on Research and Development Centres (FCR(2015-16)33) Minutes of meeting (LC Paper No. FC165/15-16) (LC paper No. FC166/15-16)
11/12/2015 (Paper issued on 20/11/2015)	Finance Committee	Administration's paper on Research and Development Centres (FCR(2015-16)33) Minutes of meeting (LC Paper No. FC202/15-16) (LC Paper No. FC203/15-16)
3/2/2016	Council	Question No. 22 on "Development of innovation and technology" raised by Mr Charles MOK (Hansard) (Page 4786-4804)
7/4/2016	Special meeting of the Finance Committee to examine the Estimates of Expenditure 2016-2017	Administration's replies to Members' initial written questions (Reply serial no. ITB132)