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Panel on Commerce and Industry

Meeting on 17 June 2008

**Background Brief on
Research and Development Centres
under the Innovation and Technology Fund**

Purpose

This paper gives an account of the Research and Development (R&D) Centres set up under the Innovation and Technology Fund (ITF)¹ and a summary of views and concerns expressed by members on the subject at recent meetings of the Panel on Commerce and Industry (CI Panel).

Background

2. On 30 June 2004, the Innovation and Technology Commission (ITC) issued a consultation paper to invite the public views on a new strategic framework which included the development of 13 proposed technology focus areas² and a proposal to set up R&D centres. Having considered how best Hong Kong might capitalize on its strengths and respond to the changing economic environment, the Administration proposed that the strategy of innovation and technology development should emphasize five key elements, namely focus, market relevance, industry participation, leverage on the Mainland, and better coordination among different elements of the innovation and technology programme. According to the Administration, the vast majority of respondents supported the general direction and key initiatives of the new strategy.

¹ The 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 approved the proposed injection of HK\$5 billion into ITF which came into operation on 1 November 1999. The ITF is currently administered by Innovation and Technology Commission and comprises four programmes, namely the Innovation and Technology Support Programme, University-Industry Collaboration Programme, General Support Programme and Small Entrepreneur Research Assistance Programme.

² The 13 proposed focus areas are: (1) Advanced Manufacturing Technologies; (2) Automotive Parts and Accessory Systems; (3) Chinese Medicine; (4) Communications Technologies; (5) Consumer Electronics; (6) Digital Entertainment; (7) Display Technologies; (8) Integrated Circuit Design; (9) Logistics/Supply Chain Management Enabling Technologies; (10) Medical Diagnostics and Devices; (11) Nanotechnology and Advanced Materials; (12) Opto-electronics; and (13) Textile and Clothing.

3. At the meeting on 17 May 2005, members of the CI Panel were informed of the Administration's plan to implement a new strategic framework and a three-tier funding model of ITF based on the outcome of the public consultation. The funding proposal to allocate a total of \$358.7 million from ITF to take forward the new strategic framework was approved by the Finance Committee (FC) on 24 June 2005.

New strategic framework for innovation and technology development

4. The key features of the new strategic framework for innovation and technology development are:

- (a) identification of technology focus areas in which Hong Kong has competitive edges and where there is the potential for meeting market needs; and
- (b) provision of funding support for the establishment of R&D centres in five identified focus areas and R&D projects under specific focus themes to upgrade applied R&D efforts, facilitate technology transfer to the relevant industries and promote commercialization of the R&D deliverables in the relevant areas.

Three-tier funding model

5. Under the new strategic framework, the Administration adopts a three-tier funding model under ITF to support applied R&D in Hong Kong. The three-tier funding model is:

- (a) tier one which involves the establishment of five R&D centres for conducting R&D in specific focus areas for application in the relevant industries to enhance their competitiveness and longer-term technology development for transformation into high technology and high value-added industries;
- (b) tier two which involves the funding of R&D projects under different focus themes with a more specific and defined scope to help specific industries meet their identified technology needs; and
- (c) tier three which involves funding of more forward-looking and innovative R&D projects.

Research and Development Centres

6. In order to strengthen collaborative applied research activities between the industries and research organizations, the following five R&D Centres were set up in April 2006 for an initial operation of five years:

(a) R&D Centre for Automotive Parts and Accessory Systems (APAS)

APAS is hosted by the Hong Kong Productivity Council. The Centre focuses on four core technology areas, namely electronics and software; safety; hybrid electric drive and environment; and new materials and processes. Funding allocation of \$100 million and \$250 million have respectively been earmarked for the Centre's operating costs and upgrading of Hong Kong's testing facilities in the local institutions to carry out testing of automotive parts/components and systems, as well as supporting about 78 R&D projects;

(b) R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM)

LSCM is jointly hosted by the University of Hong Kong, the Chinese University of Hong Kong and Hong Kong University of Science and Technology. The Centre focuses on three core technology areas, namely radio frequency identification (RFID) tag and reader technologies; networking and infrastructure technologies; and applications and decision support technologies. Funding allocation of \$52.2 million and \$255 million have respectively been earmarked for the Centre's operating costs and for supporting about 80 R&D projects;

(c) R&D Centre for Nanotechnology and Advanced Materials (NAMI)

NAMI is hosted by the Hong Kong University of Science and Technology. The Centre focuses on five core technology areas, namely nanomaterials (functionalization and applications); nanotechnology enabled nano-optoelectronics; nano-structured/textured materials applications; advanced materials for interconnection, packaging and thermal management; and forming of advanced materials. Funding allocation of \$61.4 million and \$209 million have respectively been earmarked for the Centre's operating cost and for supporting about 75 R&D projects;

(d) R&D Centre for Textiles and Apparel (RITA)

RITA is hosted by the Hong Kong Polytechnic University. The Centre focuses on four core technology areas, namely new materials and textile and apparel products; advanced production technologies; innovative design and evaluation technologies; and enhanced industrial systems and infrastructure. Funding allocation of \$60.3 million and \$215 million have respectively been earmarked for the Centre's operating costs and for supporting about 100 R&D projects; and

(e) R&D Centre for Information and Communications Technologies (ICT)

ICT is hosted by the Hong Kong Applied Science and Technology Research Institute (ASTRI)³. The Centre focuses on four technology areas, namely communications technologies; consumer electronics; integrated circuit design and opto-electronics. ITF has earmarked \$1,400 million to support about 150 R&D projects (including seed projects) to be undertaken by ICT.

7. With the support of ITF funding, R&D Centres provide a one-stop shop for technology transfer and commercialization through the following roles:

- (a) undertaking industry research;
- (b) provision of technology and market intelligence;
- (c) provision of a platform for the exchange of Intellectual Property/innovation technology;
- (d) technology development, transfer and knowledge dissemination; and
- (e) intellectual property commercialization.

Under the market-driven and demand-led approach, R&D Centres are responsible for coordinating R&D efforts and maintaining close relationship with the industry to ensure that the R&D deliverables would be relevant to the industry's needs and long-term development.

Control mechanism

8. To ensure that public funds are used in a prudent and cost-effective manner, a comprehensive control mechanism is in place to monitor the operation of the R&D Centres and their projects.

9. Firstly, at the institutional level, the Administration play a role in the composition and appointment of the Steering Committee and Technology Committee of each R&D Centre in order to ensure that there would be independent overview of the Centre.

10. Each R&D Centre is required to establish detailed guidelines on its corporate governance, including the management and control of the operation of the Centre; mechanism for periodic update and review of the R&D programme;

³ Unlike the other four R&D Centres which are established as independent legal entities, ICT is established within the existing operational infrastructure of ASTRI, which is a limited company wholly owned by the Government. To support its new role as a R&D Centre, the operating expenses of ASTRI have been increased from \$93.3 million in 2005-2006 to \$119.9 million in 2006-2007 and 2007-2008, and \$121.4 million in 2008-2009.

project vetting, management and administration, and review mechanism; reporting requirement, submission of annual report of the Centre and progress report of the projects to the Board of Directors and the Technology Committee; and control and auditing arrangements. The guidelines were endorsed by the Board of Directors of the respective Centre and approved by the Administration.

11. The Administration monitors and controls all the R&D Centres at two levels. For the five-year operating cost of the R&D Centres, all Centres are required to conduct regular annual reviews, which critically assess the performance of the R&D Centre as a whole against its milestones as stated in the R&D Centre proposal during the five-year funding period. Each Centre is required to submit annual reports during the five-year period describing the operation and achievement of the Centre including the evaluation against the set of performance indicators. In addition, each R&D Centre is required to submit quarterly financial statement to the Administration reporting on the income and expenditure of the Centre and the cashflow requirements. ITF grants will be disbursed by instalments on a quarterly basis, and the disbursement will be contingent upon acceptance of the quarterly financial statement and the annual report by the Administration.

12. Apart from conducting regular annual reviews on the performance of the Centres and project review of individual R&D projects, all R&D Centres are required to conduct two major reviews, one in the second year and the other in the fourth year. The first major review will critically examine, inter alia :

- (a) whether the R&D programme and direction could actually meet the industry demand as reflected by the industry contribution and participation; and
- (b) whether the planned R&D programme would need to be adjusted to ensure that adequate industry contribution and income could be generated to sustain the programme for the whole five-year period.

The results of the review would provide input to the Administration to decide whether the R&D Centre should continue to exist and receive funding support from the ITF.

13. The second major review will critically examine, inter alia:

- (a) whether the R&D Centre would likely meet the objectives and target set at the beginning of its operation;
- (b) whether it is necessary for the Centre to continue to operate after the five-year funding period;
- (c) the funding source of the Centre beyond the five-year funding period if the Centre continues to operate; and
- (d) the plan to wind down the Centre if it ceases operation.

14. If an R&D Centre is to continue operation beyond the five-year period, it is expected to do so on a self-financing basis, counting on its ability to obtain adequate industry contribution and generate income to meet its operating cost. However, if the Centre has already completed its mission or for other reasons, ceases operation before or after the five-year funding period, all the residual funds and any surplus income generated from the ITF funding during the project period will be returned to the ITF.

Members' views and concerns

15. The Administration briefed the CI Panel on the plan to implement new strategic framework for innovation and technology development and reported the progress achieved by the R&D Centres since their establishment in April 2006 to June 2007 at its meeting on 21 November 2006 and 17 July 2007 respectively.

16. In general, members supported the establishment of the five R&D Centres. Nevertheless, they had all along urged the Administration to ensure that the operating or administrative cost of the R&D Centres should not be too high in order that adequate resources were available for funding R&D projects. In this connection, they were concerned about how the financial resources allocated to the Centres were used and the level of industry contribution secured by the Centres in undertaking each of their projects.

17. According to the Administration, 48 platform projects, 5 collaboration projects and 26 control research and contract service projects were endorsed by these five R&D Centres as in June 2007. The total ITF funding approved amounted to \$252.3 million. With respect to the platform projects, most of the Centres were able to secure the industry to contribute 10% of the total project cost. As for the collaboration projects, industry contribution to the total project cost was more than 30%. Contract research and contract service projects were wholly funded by the industry. The level of industry contribution for the R&D projects would serve as an indicator of the level of industry support for the projects, as well as the potential of the Centres for meeting the expectation of generating up to 40% of R&D expenditure from industry contribution when they ramped up to the fifth year of operation in 2010-2011.

18. Members also expressed concern on the targets of R&D deliverables as most of the local manufacturers had moved to operate in the Mainland. The Administration assured members that as the intellectual property rights (IPs) generated from R&D projects undertaken by the R&D Centres were normally owned by them, all local manufacturers or overseas companies were the targets of the research output as they could buy the technologies and commercialize the IPs developed by the R&D Centres.

Issues to be followed up at the Panel meeting on 17 June 2008

19. To facilitate discussion, the Panel has requested the Administration to report to members the income and expenditure of the Centres on an annual basis with the following information:

- (a) the total cost of each project;
- (b) the actual level of industry contribution secured by the Centres for each project; and
- (c) the administrative cost involved for each project.

References

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

Council Business Division 1
Legislative Council Secretariat
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List of relevant papers

Committee	Paper	LC Paper No.
Meeting of Panel on Commerce and Industry (CI Panel) on 17 May 2005	<ul style="list-style-type: none"> ✧ Administration's paper : "Implementation of New Strategic Framework for Innovation and Technology Development" ✧ Background brief on new strategic framework for innovation and technology development ✧ Minutes of meeting 	<p>CB(1)1496/04-05(03)</p> <p>CB(1)1497/04-05</p> <p>CB(1)1794/04-05</p>
Meeting of Finance Committee on 24 June 2005	<ul style="list-style-type: none"> ✧ Administration's paper : INNOVATION AND TECHNOLOGY FUND HEAD 111 - INNOVATION AND TECHNOLOGY New Subhead "Establishment of Research and Development Centre for Nanotechnology and Advanced Materials" New Subhead "Establishment of Research and Development Centre for Textile and Clothing" New Subhead "Establishment of Research and Development Centre for Automotive Parts and Accessory Systems" New Subhead "Establishment of Research and Development Centre for Logistics and Supply Chain Management Enabling Technologies" New Subhead "Establishment of an Incubation-cum-Training Centre to support Digital Entertainment Development by the Hong Kong Cyberport Management Company Limited" New Subhead "Development of technologies and facilities to design and build mechanical watch movements by the Chinese University of Hong Kong" ✧ Minutes of meeting 	<p>FCR(2005-06)21</p> <p>FC125/04-05</p>

Committee	Paper	LC Paper No.
Meeting of CI Panel on 21 February 2006	<ul style="list-style-type: none"> ✧ Administration's paper : "Research and Development Centre on Information and Communications Technologies" ✧ Background brief on establishment of research and development centres under the new strategic framework for innovation and technology development ✧ Minutes of meeting 	<p>CB(1)903/05-06(05)</p> <p>CB(1)904/05-06</p> <p>CB(1)1148/05-06</p>
Meeting of CI Panel on 21 November 2006	<ul style="list-style-type: none"> ✧ Background brief on Current Strategic Framework for Innovation and Technology Development ✧ Administration's papers : <ul style="list-style-type: none"> (a) Research and Development Centres (b) Issues related to the operation and management of the Applied Science and Technology Research Institute ✧ Minutes of meeting 	<p>CB(1)279/06-07</p> <p>CB(1)278/06-07(03)</p> <p>CB(1)278/06-07(04)</p> <p>CB(1)485/06-07</p>
Meeting of CI Panel on 17 July 2007	<ul style="list-style-type: none"> ✧ Administration's paper : "Strategic Framework for Innovation and Technology Development — Progress Report on Research and Development Centres" ✧ Minutes of meeting 	<p>CB(1)2088/06-07(04)</p> <p>CB(1)120/07-08</p>