For discussion on
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Legislative Council
Panel on Commerce and Industry

Comprehensive Review of the Innovation and Technology Fund (ITF) Proposed Improvement Measures

PURPOSE

This paper reports to Members the progress of the comprehensive review of the Innovation and Technology Fund (ITF) and seeks Members' views on the proposed improvement measures.

BACKGROUND

2. The ITF was established in 1999 to provide funding for projects that contribute to the promotion of innovation and upgrading of the industries in Hong Kong. There are currently three programmes under the ITF that support research and development (R&D) activities –

(a) ***The Innovation and Technology Support Programme (ITSP)*** supports mid-stream/downstream applied R&D projects mainly undertaken by designated local public research institutions[1];

(b) ***The University-Industry Collaboration Programme (UICP)*** supports collaborative projects undertaken by private companies in collaboration with local universities in the form of a matching grant; and

(c) ***The Small Entrepreneur Research Assistance Programme (SERAP)*** provides dollar-for-dollar matching grant for small technology based enterprises to undertake in-house R&D projects.

[1] The designated local public research institutions include six local universities, five R&D Centres, the Hong Kong Productivity Council, the Vocational Training Council, the Clothing Industry Training Authority and the Hong Kong Institute of Biotechnology.

3. Apart from these, there is also the General Support Programme (GSP) which supports non-R&D projects for the upgrading and development of the local industries as well as the promotion of an innovation and technology (I&T) culture in Hong Kong.

4. As at end-December 2013, the ITF has supported over 3 600 projects with committed funding of about $7.9 billion. Taking into account the funding approved by the Legislative Council Finance Committee for the operation of the R&D Centres, the uncommitted ITF balance of about $1 billion as at end-December 2013 is expected to be fully committed in mid-2015. As we informed Members of this Panel previously, the Innovation and Technology Commission (ITC) has commenced a comprehensive review of the ITF after some 15 years of operation to identify areas of further improvements. In this paper, we will report to Members the progress of the Review and proposed improvement measures. These include –

(A) Intensifying efforts to promote the application of R&D outcomes in the public sector;

(B) Implementing improvements in response to Director of Audit's Report No. 61; and

(C) Making greater use of the GSP to foster a strong I&T culture.

PROPOSED IMPROVEMENTS TO THE ITF

(A) Intensifying Efforts to Promote the Application of R&D Outcomes in the Public Sector

Current Situation

5. Up till 2011, production of prototypes and samples under the ITF was only supported on very limited scale. In March 2011, we formally introduced the Public Sector Trial Scheme (PSTS) whereby additional funding is provided to completed R&D projects funded by the ITF for the production of tools/prototypes/samples and the conducting of trials in the public sector. The public sector includes Government departments, public

bodies and trade associations, etc. This Scheme significantly helps realisation of R&D outcomes through actual implementation to identify areas of enhancement and step-by-step improvements to meet the needs of clients. In certain cases, it can also provide a good reference for the products as they compete for business in the open market in future.

6. The funding ceiling under the PSTS is capped at 30% of the actual cost of the original R&D project, although the Commissioner for Innovation and Technology (CIT) may exercise discretion for providing additional funding support under exceptional circumstances.

7. In the past 3 years or so, we have seen encouraging results. As at end-December 2013, there have been around 80 trials conducted in the public sector. They have benefited various Government bureaux/departments and other stakeholders in different sectors. Some examples are highlighted below –

(a) Logistics sector

The R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM) has collaborated with the Customs and Excise Department to apply the "E-Lock-Based Enabling Technology" at border control points. This technology has helped reduce the number of repeated customs inspection for cargos at control points, enhance couriers' efficiency and reliability, and facilitate logistics flow between Hong Kong and the Mainland.

In addition, with the support from the Airport Authority Hong Kong and Carrier Liaison Group (a trade organisation representing the air cargo, mail, courier and express cargo industries in Hong Kong), LSCM is working on a "Advance Truck Arrival Notice System" whereby various cargo terminals will be notified when trucks heading for the Hong Kong International Airport are passing through the Tsing Ma Bridge. The system will help improve terminal docking space scheduling and loading/unloading efficiency and raise air-freight service quality and reliability.

(b) Construction sector

The LSCM is applying the radio-frequency identification (RFID) technology to develop Location-based Services, which enables the construction industry to track building materials as well as detect any potential dangers in construction sites. Such initiatives have the support of both the Hong Kong Housing Authority and the Construction Industry Council.

In addition, the Nano and Advanced Materials Institute (NAMI) is working with the Hong Kong Housing Authority and a local construction company to develop high performance cementitious materials for the construction of external building walls with enhanced thermal insulation to improve energy efficiency.

(c) Community care sector

The Hong Kong Research Institute of Textile and Apparel (HKRITA), LSCM and the Hong Kong Applied Science and Technology Research Institute have jointly developed a system on "Wearable Electronics for Better Quality Community Care for the Elderly" which involves an outerwear made of a Nu-Torque fabric embedded with the RFID system. It can provide better monitoring of the elderly in our community centres, particularly those who might be more susceptible to losing their way due to Alzheimer's disease.

In addition, the University of Hong Kong has collaborated with the Hong Kong Federation of the Blind, Ebenezer School & Home for the Visually Impaired and the Housing Department to launch a trial on "A Smartphone Control Device and Signpost System for Visually Impaired Users" which has enabled the visually impaired persons to control and operate mobile applications on smartphones and receiving instant location information.

(d) Retail sector

LSCM has developed a RFID label technology to help identify product authentication at retail points. Trials of the technology

were conducted in collaboration with the Hong Kong Retail Technology Industry Association and several Chinese medicine companies.

(e) Medical sector

The Hong Kong Polytechnic University has conducted a trial on an "Interactive Intention-Driven Upper-Limb Training Robotic System" on stroke patients in several elderly centres. This system can enhance rehabilitation of patients by training their hand and elbow movements.

(f) Sports sector

HKRITA has collaborated with the Hong Kong Sports Institute in a R&D project on high-performance sportswear, and the newly developed materials of the project have been used in the production of the sportswear for the Hong Kong cycling athletes participating in the 2012 London Olympic Games for training purposes, and are being applied by the relevant manufacturers in their production lines through licensing agreements.

(g) Energy sector

NAMI has collaborated with the Architectural Services Department and apply its high efficiency amorphous Si-Solar Cells technology by installing a 10 kW solar cell demonstration system at a public hospital.

Proposed Improvements

8. To further promote the adoption of R&D outcomes in the public sector, we have recently conducted a review on the present arrangements and propose to introduce two further improvement measures below –

(a) Waiving the industry sponsorship requirement for projects initiated by Government bureaux/departments and statutory bodies

9. At present, platform projects submitted under the ITSP require at least 10% of industry sponsorship from at least two private companies (although CIT may waive the industry sponsorship requirement in exceptional circumstances). In some cases, this requirement can hinder the speedy commencement of good R&D projects, i.e. though a good project proposal has been worked out, it cannot commence due to the inability of finding sufficient sponsorship. The reason is that some technologies may have limited commercial interest in their early stage of development. Also, some technologies may by nature only have applications in the public sector (e.g. for law enforcement purposes).

10. To encourage more projects in the public sector in future, we propose waiving the industry sponsorship requirement for ITSP platform projects applications where there are –

(i) clear support from Government bureaux/departments and/or statutory bodies;

(ii) clear community interests; and

(iii) difficulties in seeking industry sponsorship in the prevailing circumstances.

(b) Raising the funding ceiling for PSTS projects from 30% to 50%

11. At present, the amount of funding support under the PSTS is capped at 30% of the actual cost of the original R&D project supported by the ITF (although CIT can give exceptional approval to raise the funding cap for worthwhile projects on a case-by-case basis). This 30% funding limit has in certain cases limited the full exploitation of the technologies –

(i) sometimes it may be desirable to have a larger scale trial scheme to assess speedily and comprehensively the effectiveness of the new innovation. For example, we may like to see how a RFID stocktaking device can improve efficiency in different settings, e.g. elderly homes, hospitals, warehouses, etc.; and

(ii) a new innovation may require refinement trial after trial in order to overcome all obstacles.

12. As such, we propose to raise the funding limit from 30% to 50% and will review the situation taking into account future experience.

Expected Benefits

13. With the above two measures, we expect that there will be –

(a) more collaboration opportunities between Government departments and designated local public research institutions to develop new technologies and applications to the benefit of the wider community;

(b) more opportunities for the public sector to act as a proving ground for R&D results and facilitate their subsequent commercialisation by the private sector; and

(c) improvement to the quality and cost-effectiveness in the delivery of public services.

(B) Implementing Improvements in Response to Director of Audit's Report No. 61

14. The Director of Audit has conducted a value-for-money audit on the ITF and included his findings and recommendations[2] in Chapter 9 and Chapter 10 of his Report No. 61[3] which was tabled at the Legislative Council on 13 November 2013. We agree with the audit recommendations and will pay due regard to them in conducting the on-going comprehensive review on the ITF and make improvements in stages. In particular, the following measures have been/will be rolled out –

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[2] The Report included recommendations in the following main areas –
(a) Comprehensive review of ITF and overall performance monitoring;
(b) Performance and cost-effectiveness of R&D Centres;
(c) Processing and monitoring of projects under the ITSP;
(d) Evaluation and commercialisation of ITF projects; and
(e) Processing and monitoring of projects under the SERAP.

[3] Chapter 9 of the Report covers the Overall Management of the ITF and Chapter 10 on Project Management.

(a) we will develop/implement a more comprehensive/systematic post-project evaluation framework to better assess and monitor the outcome and commercialisation of the projects as well as the performance of the project teams;

(b) we have critically reviewed the operating expenditure and cost-effectiveness of the R&D Centres and will continue to work with the Board of Directors/management of the R&D Centres and enhance their existing set of performance indicators and targets from time to time. As we reported to this Panel at the meeting on 19 November 2013 when we sought Members' support to extend the operation period of HKRITA and LSCM, we considered that the operating expenditures of the R&D Centres were generally reasonable;

(c) we will set an overall passing mark of 50% under the assessment framework for ITSP applications and a separate passing mark of 50% for the key assessment component of "Management Capability" to facilitate the assessment of project applications; and

(d) we will review comprehensively the operation of SERAP including its value in promoting in-house research with a view to deciding its way forward.

(C) Making Greater Use of the GSP to Foster a Strong I&T culture

15. As mentioned in paragraph 3 above, the GSP supports non-R&D projects that help contribute to the upgrading and development of manufacturing and services industries and promotion of an I&T culture.

16. In 2011, having conducted a review on the GSP, we introduced a number of improvement measures, including –

(a) relaxing the sponsorship requirement to require only one instead of two sponsors; and

(b) expanding the scope of eligible sponsors to cover non-governmental organisations (NGOs), charitable organisations

and individuals (who are not related to the applicant organisation), etc.

17. With these improvements, the number of GSP applications (except the Internship Programme and Patent Application Grant) has increased from 13 in 2010-11 to 25 in 2012-13, while the amount of GSP funding approved has increased from $5.9 million in 2010-11 to $14.6 million in 2012-13.

18. In order to promote a more robust I&T culture, we have further reviewed the GSP with a view to encouraging more project applications to better instil an I&T culture in the community. The review shows that the present arrangements of the GSP are generally adequate. As such, we only propose one further improvement to the sponsorship requirement. At present, we do not accept sponsorship from –

(a) the applicant itself; and

(b) related parties of the project applicant.

19. In future, we propose to revise the sponsorship requirement for GSP projects to accept sponsorship (in-kind or cash) from the applicant itself, or related parties as eligible sponsorship. The present flexibility for CIT to waive the sponsorship requirement if the application would bring exceptional benefits to the community will continue to apply.

FURTHER DOWN THE ROAD

20. The above is only our first progress report on the comprehensive review of the ITF. We are continuing with the review on other areas, for example –

(a) how to encourage and facilitate more private sector investment in R&D;

(b) how to strengthen our support for commercialisation of R&D outcomes; and

(c) on the front on Chinese Medicines (CM), how we can render better

support to the CM manufacturing industry, in particular in meeting the Good Manufacturing Practice requirements in the future.

We will consult the Panel again on further findings of the Review.

UPDATE ON THE R&D CASH REBATE SCHEME

21. A separate but related matter is the implementation of the R&D Cash Rebate Scheme (CRS). The Government launched the CRS in April 2010 to provide cash rebate of 30% to private companies on their R&D investment. While the funding source of the CRS is independent from the ITF, it plays an important role in promoting R&D and reinforcing the research culture among private companies. In February 2013, we reported the outcome of the review of the first three-year operations of the Scheme to this Panel. We would like to take the opportunity to update Members on the latest position.

22. In general, response has been encouraging. As at end-December 2013, the CRS has approved 755 applications and $65 million of cash rebate, benefitting more than 530 companies. Companies have responded positively towards the Scheme, particularly after the increase of the cash rebate level to 30% in February 2012, as reflected by –

(a) the increasing number of approved cash rebate applications, from 174 in 2011-12 to 191 in 2012-13. In the first nine months of 2013-14 (up to end-December 2013), we have approved 178 applications, representing 93% of the total number in 2012-13;

(b) the increasing amount of cash rebate approved, from $11 million in 2011-12 to $24 million in 2012-13. In the first nine months of 2013-14, we have approved a total of $23 million of cash rebate, representing 97% of that in the entire financial year of 2012-13. The highest two cash rebate disbursements so far made were $3.6 million and $1.8 million; and

(c) the increasing number of pre-registration of partnership projects from 43 in 2011-12 to 116 in 2012-13 (an increase of 270%); during the first nine months in 2013-14 (up to end-December 2013),

we have already accepted 74 pre-registrations.

23. The current funding commitment of the CRS is estimated to be $144 million as at 31 December 2013. We will continue to monitor the situation and seek Members' advice as fit.

ADVICE SOUGHT

24. Members are invited to note the progress of the comprehensive review of the ITF and offer their views on the proposed improvement measures set out in paragraphs 5 to 19 above.

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