



創新科技署

Innovation and Technology Commission

香港特別行政區政府

The Government of the Hong Kong Special Administrative Region

Ref : CR1-145/4C

Tel : 2810 3280

12 February 2015

Ms Anita Sit
Clerk to Finance Committee
Legislative Council Finance Committee
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong

Dear Ms Sit,

**Supplementary Information on
Commercialisation of R&D Outcomes of
Projects Supported by the Innovation and Technology Fund**

At the meeting of the Finance Committee on 6 February 2015, in discussing the items FCR(2014-15)36 to 37 regarding the establishment of the Innovation and Technology Bureau, a Member requested information concerning the commercialisation of R&D projects supported by the Innovation and Technology Fund (ITF) and the employment generated therefrom. In response to the Chairman's request, we set out in this letter some supplementary information for Members' reference.

At present, there are three funding programmes under the ITF that provide targeted support to applied research and development (R&D) activities of a company -

- (a) collaborative projects supported under the Innovation and Technology Support Programme (ITSP), which provide targeted support to a company in conducting proprietary R&D, undertaken in collaboration with the five R&D Centres set up by the Government, local universities and other designated local public research institutions;
- (b) the University-Industry Collaboration Programme (UICP) which supports collaborative projects undertaken by private companies in collaboration with local universities in the form of matching grant; and

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

Generally speaking, the industry co-applicant (in the case of ITSP collaborative projects) / applicant (under the UICP or SERAP) would contribute at least 50% of the total project cost (or 30% if the project is undertaken by the R&D Centres). The industry partner would be entitled to exclusive right to utilise the project intellectual property (IP) or own the IP. In other words, the project outcomes would generally be adopted by the industry partner who will be responsible for commercialising the project outcome.

In the past three years from 2011-12 to 2013-14, the total number of projects supported under the ITSP (collaborative projects), UICP and SERAP are 66, 52 and 43 respectively. These projects accounted for around 25% of all R&D projects supported by the ITF in the same period.

From our experience, majority of projects supported by the ITF can be completed in accordance with the original project milestones and deliverables. However, we recognise that to bring the R&D outcomes from the laboratory to the market would require further development work and investment on the part of the industry partner in order to refine and transform the R&D outcomes into products or services that meet the market needs, producing them and introducing them into the market.

Over the years, the ITF has evolved continuously to suit prevailing circumstances. In the early years of its set up to 2006, the focus of the ITF was more on supporting projects conducted by universities, the Hong Kong Applied Science and Technology Research Institute and the Hong Kong Productivity Council. In 2006, after conducting a large scale consultation exercise, the Government set up five R&D Centres to drive and co-ordinate applied R&D in selected areas which had potential for further development in Hong Kong. Since then, much effort has been made to drive realisation and commercialisation of R&D outcomes.

After some eight years of operation, the R&D Centres have gradually become more mature and have played a significant role in acting as the focal point for technology collaboration among the Government, industry, academia and research sectors. From their establishment in 2006 up to 2013-14, the five R&D Centres have undertaken over 700 projects and signed about 300 licensing agreements to transfer the R&D outcomes to the industry. Recently, they have stepped up efforts in realisation and commercialisation of R&D outcomes and have obtained increasing support from the industry as

reflected by the increase in the level of industry contribution over the years. As at 2013-14, all the R&D Centres have met their latest target level of industry contribution of 20%. The Government will continue to submit annual reports of the R&D Centres to the Legislative Council Panel on Commerce and Industry on their detailed operation including their progress in realisation / commercialisation.

Some selected examples of commercialisation of R&D outcomes of ITF projects are set out at Annex.

As regards employment, in the past three years from 2011-12 to 2013-14, newly-funded ITF projects have directly supported over 2 500 research positions, including around 750 internship positions under the Internship Programme for local graduates to work on ITF projects. Commercialisation after the completion of ITF projects undertaken by the industry partners having regard to their resources, business plans, and market situation would also generate additional employment. Furthermore, with the financial support provided through the University Grants Committee, Research Grants Council, the ITF as well as private sector investments, the number of R&D personnel in Hong Kong has increased from about 11 000 in 2001 to 26 000 in 2013.

I should be grateful if you would relay our response to Committee Members for their reference.

Yours sincerely,

A handwritten signature in blue ink, appearing to be 'Rayson Chan', written in a cursive style.

(Rayson Chan)
for Commissioner for Innovation and Technology

Encl.

Selected Examples of Commercialisation

Some selected examples of commercialisation of R&D outcomes of projects support by the ITF are set out below –

- (a) the Chinese University of Hong Kong successfully developed a revolutionary non-invasive prenatal diagnostic approach for Down syndrome by direct analysing fetal DNA collected from the mother's blood sample. Conventional methods for detection of fetal chromosomal genetic abnormalities are invasive and carry a finite risk to the mother and unborn baby. Not only is the new diagnostic method a phenomenal commercial success worldwide, benefitting hundreds of thousands of pregnant women, it also represents one of the mostly rapidly developing areas of molecular testing. As arising from this technology, a sensitive analysis of fetal DNA for Down syndrome has been introduced as a clinical service in Hong Kong and the United States since the end of 2011;
- (b) The Hong Kong Applied Science and Technology Research Institute has developed enhancement technologies on 4G Long Term Evaluation (LTE) by adopting dual mode baseband transmission mode, i.e. time division duplex (TDD) and frequency domain duplex (FDD). In 2012-13, ASTRI has licensed this technology to two companies. One of the licensees launched the first commercial grade TD-LTE small cellular base station reference design in 2012, and the other company set up a new R&D centre in the Hong Kong Science Park;
- (c) The Hong Kong Research Institute of Textiles and Apparel has been proactively commercialising the “Finer Nu-Torque Cotton Yarn Production” technology internationally. Nu-Torque technology is one of the most significant advancements in spinning of singles ring yarns. So far, this technology has gone through five generations of R&D and put into production. The current licensee could product yarns under Nu-Torque technology at a total capacity up to 700 000 spindles in their production line in the Mainland, Thailand, Malaysia and India; and
- (d) the Nano and Advanced Materials Institute has developed a low-cost single component Die Attach Adhesives (DAAs) with high thermal conductivities, low curing temperature and high shelf temperature using nanomaterials and micro/nano-capsule technique with application in High Brightness-Light-Emitting Diode (HB-LED) and

other semiconductor packaging applications. This product has been licensed non-exclusively to a Hong Kong electronics company in 2012 and since then, the licensee has been selling the DAAs to various Mainland die-bonding factories. DAA won the 2014 Hong Kong Awards for Industries Technological Achievement Award.