



Briefing for Post-Project Evaluation Framework



1 June 2016



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I. Background and Objectives



Background and Objectives

- ↑ To gauge the effectiveness of ITF in supporting industry needs.
- ↑ To track how far the R&D deliverables are realised/commercialised.
- ↑ Structured and comprehensive evaluation system to assess the outcome of ITF-funded projects.



Background and Objectives

Shortcomings of Existing Framework

- † One-off in about 6 months after project completion: too soon for realisation/commercialisation, no further tracking and following-up in a systematic manner.
- † Survey feedbacks in narrative form: difficult to analyse and generate report for management.



II. Merits of the New Evaluation Framework



Merits of the New Evaluation Framework

- † More extensive coverage on efforts in dissemination and transfer of project deliverables and technologies up to 5 years after project completion.
- † Quantitative feedback on adoption of project results by the industry where applicable.
- † Post-project evaluation questionnaires used to be submitted by fax in the past, the new evaluation form will adopt electronic mode of submission.



III. Scope and Implementation Schedule



Scope and Implementation Schedule

- ↑ Scope: all Tier 2 platform projects and Tier 3 projects
- ↑ Implementation Schedule: Projects completed on or after 30 June 2014.



IV. New Post-Project Evaluation Form and Workflow for Handling



New Post-Project Evaluation Form

- ↑ Part A (Key Project Details) – automatically filled by system.



New Post-Project Evaluation Form

- ↑ Part B (Report on Progress of Commercialisation/Technology Transfer Activities) – completed by Project Coordinator (PC) / Organisation Manager / Technology Transfer Office (or by a designated person on behalf of the research institute) **in 2 years and 5 years after project completion** (reporting timeframe may be adjusted on case-by-case basis).

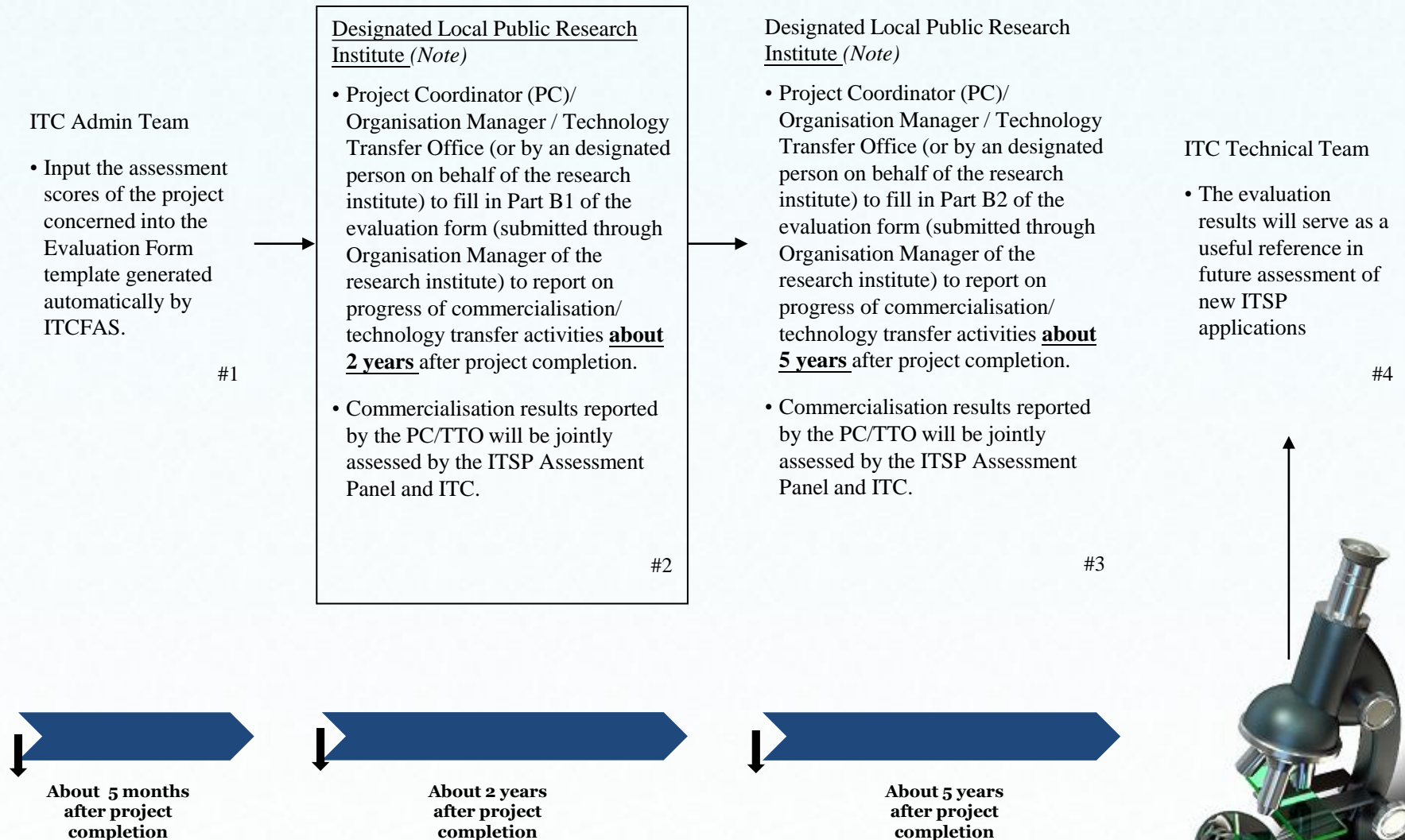


New Post-Project Evaluation Form

- ↑ System will automatically bring up the case when due for assessment.



Workflow for Handling Post Project Evaluation Form for Projects Undertaken by Designated Local Public Research Institute



Note: ITC's Subject Officer may adjust the timeframe for completion of Part B (e.g. request for additional return) as deemed fit.



V. Post-Project Evaluation Form (Sample)



New Post-Project Evaluation Form (Sample)

Post Project Evaluation form for ITF project undertaken by Designated Local Public Research Institute

Part A - Key Project Details

(to be completed automatically by ITFAS & users after project completion)

1. Project Title: Machine Learning Algorithm for Cyber Security (Ref. No.: ITS/09/13PP)
2. Designated Local Public Research Institute:
 - ☒ Local University (Hong Kong R&D University)
 - ☐ Hong Kong Productivity Council (HKPC)
 - ☐ Vocational Training Council (VTC)
 - ☐ Clothing Industry Training Authority (CITA)
 - ☐ Hong Kong Institute of Biotechnology (HKIBT)
3. Industry Co-Applicant (if applicable): _____
4. Project Coordinator: Prof CHAN Tai Man (Eng) 歐文文教授 (Chi)
5. Type of Project:

<input checked="" type="checkbox"/> Platform Project	<input type="checkbox"/> Collaborative Project	<input type="checkbox"/> Tier 3 Project
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6. Total Project Cost (HK\$): 6,000,000
 Amount of Industry Sponsorship (US\$): 600,000
 Amount of Other Sources of Financial Contribution (HK\$): 0
 Amount of ITF Funding Sought (HK\$): 5,400,000
7. Project Schedule:

Original Commencement Date (dd/mm/yyyy):	<u>01/04/2013</u>
Revised Commencement Date (dd/mm/yyyy):	_____
Original Completion Date (dd/mm/yyyy):	<u>31/03/2015</u>
Revised/Actual Completion Date (dd/mm/yyyy):	<u>30/06/2015</u>
Number of Months Delayed (if any):	<u>3</u>



New Post-Project Evaluation Form (Sample)

8. Project Summary

(A brief summary of the R&D technology achievement)

Existing security products attempted to correlate files and traffics to pre-defined patterns and data structures. However, if there is no information of the patterns or data structures, these products would not be able to identify security risks within a short timeframe. Since machine learning uses an iterative and automated approach, a prevention system can monitor thousands of discrete events in real time and can reprocess data until a robust pattern is found. This allows the system to go beyond looking for known patterns.

Therefore, this project has investigated and developed advanced machine learning models and algorithms that can look for unusual processes running or anomalous behaviors for incident response in the cyber security perspective. With the help of these advanced machine learning techniques, an organization can automatically identify unusual traffic on the network, and can even identify new samples of malware before they can steal or destroy sensitive information.

9. Project Deliverables

(A brief summary of the project deliverables developed)

1. A machine learning engine for unusual traffic and malware detection
2. An automatic training system that can conduct training over unusual traffic and malware
3. A prototype system to evaluate the effectiveness of the machine learning engine

10. Impact to the Community (e.g. item 4, Part V of application form)

(A brief summary on how the project can bring social benefit)

In recent years, there is an increasing trend in the varieties and occurrence of information security threats and cyber attacks. At the same time, the cyber threats continue to grow in scale and sophistication. The conventional techniques in cyber threat detection have been complicated by the various emerging cyber threats and they would not be enough for businesses and individuals to only protect their own information systems. This project can provide the advanced machine learning models and algorithms to defend against cyber attacks and malicious activities over the Internet and can benefit the society as a whole.



New Post-Project Evaluation Form (Sample)

11. Marks obtained in Original Assessment

Components (weightings for Platform & Collaborative Projects/Seed Projects)	Marks
(a) Innovation and Technology Components (20%/35%)	14
(b) Technical Capability (20%/32%)	12
(c) Financial Considerations (16%/8%)	8
(d) Holistic Plan to Realisation/Commercialisation (16%/4%)	8
(e) Relevance with Government Policies or in Overall Interest of the Community (12%/8%)	8
(f) IP Rights and Benefit Sharing (8%/4%)	4
(g) Management Capability (8%/8%)	4
Total (100%)	58

12. Project Status: ☒ Completed ☐ Terminated on (dd/mm/yyyy).

Completion of Part B is NOT required if the project is terminated.



New Post-Project Evaluation Form (Sample)

Part B1 - Report on Progress of Commercialisation/Technology Transfer Activities

(to be completed by the subject officer of Technical Team of ITC in 2 years after project completion based on the progress of commercialisation/technology transfer activities reported below)

1. Summary of the commercialisation/technology transfer activities in 2 years after project completion:

1. The University has granted a non-exclusive and non-transferable source-code license of the technology to ITC Co. Ltd at a fee of HK\$500,000.
2. Consultancy services have been provided to XYZ R&D centers on advanced machine learning algorithms at a fee of HK\$100,000.

2. Do you think that an additional report should be submitted again for further assessment*?

- ☐ Yes (to be assessed again in [] (normally 5 years after project completion))
☒ No (no further assessment is required)

* Based on the progress of commercialisation/technology transfer activities reported by the Project Coordinator below, subject officer of technical team of ITC may adjust the timeframe and decide whether additional report is required.



New Post-Project Evaluation Form (Sample)

(To be filled by the Project Coordinator (PC)/Technology Transfer Office (through Organisation Manager of the research institute) in 2 years after project completion)

Q1. How much income has been received during the project period and after the project completion through the commercialisation of the project results (where applicable)?

	During the project period UK£*	After project ends UK£
Licensing/sale of technology		500,000
Royalty		
Sales of sample/prototype		
Proceed from customization/consultancy services		100,000
Proceed from contract research/further development of project results		
Use of technology in production of goods for sales/provision of services		
Intellectual Property Rights (IPRs) (e.g. trade mark, copyright, know-how, etc.)		
Other technology transfer activities (Please specify: _____)		
Total:		600,000

* As recorded in the final report of the project in question.

Q2. Is there any spin-off company established to commercialise the project results?

☐ Yes ☒ No

If yes, please provide details:

Q3. Is there any joint venture or start-ups (e.g. company set up by research staff) established to commercialise the project results?

☐ Yes ☒ No

If yes, please provide details:

Q4. How many MOU/LOIs have been signed?

Q5. Are there any products/software/services developed from the project results which have been rolled out in the market?

☒ Yes ☐ No



New Post-Project Evaluation Form (Sample)

☐ If yes, please provide details: ☐

☒ The Internet Security Software Suite from ITC Co., Ltd has incorporated the advanced machine learning engine developed from this project. ☐

☐

☒ Q6. → How many IPRs have been generated from the project results? ☐

	Number
Patents filed <input type="checkbox"/>	2 <input type="checkbox"/>
Patents granted <input type="checkbox"/>	<input type="checkbox"/>
Copyrights (no matter registered or not) <input type="checkbox"/>	<input type="checkbox"/>
Trademarks/designs registered <input type="checkbox"/>	<input type="checkbox"/>
Others (please specify: _____) <input type="checkbox"/>	<input type="checkbox"/>

☐ Please provide a brief description of the IPRs generated from the project results (where applicable): ☐

☒

1. → "Machine learning engine using ABC technique", Chan Tai Man, 2014, Application No. PCT/XX2015/XXXXXX ☐

2. → "Automatic training system using DEF technique", Chan Tai Man, 2014, Application No. PCT/YY2015/YYYYYY ☐

☐

☒ Q7. → How many technology transfer activities have been conducted? ☐

	Number
Academic/professional publications issued <input type="checkbox"/>	2 <input type="checkbox"/>
Media interviews/press conferences conducted <input type="checkbox"/>	<input type="checkbox"/>
Workshops/seminars organized <input type="checkbox"/>	1 <input type="checkbox"/>
Free-of-charge consultancy services provided to the industry <input type="checkbox"/>	<input type="checkbox"/>
Others (please specify: _____) <input type="checkbox"/>	<input type="checkbox"/>

☐ Please provide a brief description of the technology transfer activities conducted (where applicable): ☐

☒

Publications: ☐

1. → CHAN Tai Man, A novel machine learning engine using ABC technique, ABC Journal on Cyber Security, pp. 1111-1113, 2013 ☐

2. → CHAN Tai Man, A novel automatic training system using DEF technique, DEF Journal on Cyber Security, pp. 2222-2224, 2015 ☐

Seminar: ☐

1. → "Why cyber security is important: Cyber threat detection using machine learning", Computer Science Dept., Hong Kong R&D University, 1 November 2015 ☐



New Post-Project Evaluation Form (Sample)

Q8. How many training opportunities/jobs have been created in relation to commercialisation of project results? If any, please provide details.

2 jobs were created at TTC Co. Ltd for the further development of the advanced machine learning engine

Q9. Is there any science and technology/industry award granted for the results of the project?

☐ Yes ☒ No

If yes, please provide details:

Q10. Apart from serving the industry, have the project results dovetailed Government policies or brought benefit to the community at large?

☒ Yes ☐ No

If yes, please provide information on the contribution to the overall interest of the community (e.g. related Government initiatives, public sector trial/adoption, etc.)

The project has an impact towards cyber security by providing advanced machine learning models and algorithms to defend against cyber attacks and malicious activities. The proposal is also in line with the Hong Kong Government's Digital 21 Strategy, particularly on cloud security and data privacy.

Q11. Please provide details/experience of successful commercialisation/realisation of project results (e.g. how did the project results bring benefits to the company/organisation after adoption of the technologies developed from the project).

The commercialization of the project results has enabled the licensing company to further its technical capability on cyber security by strengthening its cyber threat detection technologies.

Completed by the Project

Coordinator*:

Name:

Prof CHAN Tai Man

Signature:

Date:

01 June 2016

* This form may be completed by an authorized/designated person on behalf of the research institute if the Project Coordinator has left the organisation.



VI. Q & A Session

