CHAPTER 2

**Innovation and Technology Bureau
Innovation and Technology Commission
Hong Kong Productivity Council**

**Provision of consultancy, research and
development and training services by
the Hong Kong Productivity Council**

Audit Commission
Hong Kong
28 October 2019

PROVISION OF CONSULTANCY, RESEARCH AND DEVELOPMENT AND TRAINING SERVICES BY THE HONG KONG PRODUCTIVITY COUNCIL

Contents

Appendices **Page**

PROVISION OF CONSULTANCY, RESEARCH AND DEVELOPMENT AND TRAINING SERVICES BY THE HONG KONG PRODUCTIVITY COUNCIL

Executive Summary

1. In 1967, the Government established the Hong Kong Productivity Council (HKPC) under the HKPC Ordinance (Cap. 1116) with an aim to improve the productivity, operational efficiency and competitiveness of local industries. The Council is the governing body of HKPC and is supported by four Committees. As at 31 March 2019, HKPC had a total of 640 staff, comprising 245 permanent and 395 contract staff. The Commissioner for Innovation and Technology (CIT) is the Controlling Officer of the subventions granted to HKPC. In 2017-18, HKPC had a total income of $711 million, which included government subventions of $223.3 million. In the same year, HKPC had a total expenditure of $663.7 million. The Audit Commission (Audit) has recently conducted a review of HKPC. The findings are contained in this Audit Report and another one entitled "Governance and administrative issues of the Hong Kong Productivity Council" (Chapter 3 of the Director of Audit's Report No. 73). This Audit Report reviews matters relating to the provision of consultancy and manufacturing support services, research and development (R&D) projects and provision of training programmes by HKPC.

Provision of consultancy and manufacturing support services

2. *Target on number of consultancy projects accepted not met.* HKPC's consultancy projects include advisory projects to provide professional help and advice to clients and development projects to develop products or systems for clients. Audit noted that the target on the key performance indicator (KPI) "Number of consultancy projects accepted" was not met throughout the four-year period 2014-15 to 2017-18. The target for 2018-19 was met after HKPC's decision in July 2018 to classify manufacturing support projects (e.g. laboratory testing) with service fees over $5,000 as consultancy projects. Audit found that the target for 2018-19 was not revised according to the new definition. Moreover, there was no documentary evidence showing that the Council or the Innovation and Technology Commission (ITC) had

been informed of the change in the definition of consultancy projects. There was also no disclosure of the effect of the change on the achievement of the target in reporting the performance in the annual review report submitted to CIT and the Council (paras. 2.2, 2.6 and 2.7).

3. ***Some assignments taken on elsewhere than in Hong Kong did not recover all costs incurred.*** According to the HKPC Ordinance, productivity related assignments elsewhere than in Hong Kong shall not be taken on unless the minimum rate charged by HKPC for the work is sufficient to recover all costs incurred. Audit noted that in the period from 2014-15 to 2018-19, HKPC completed 788 consultancy projects which were productivity related assignments elsewhere than in Hong Kong. Of these 788 projects, 308 (39%) did not recover all costs incurred, contrary to the requirement stipulated in the HKPC Ordinance. The total deficit of these 308 projects amounted to $1.4 million (paras. 2.10 and 2.11).

4. ***Need to promulgate guidelines on fee concessions.*** According to HKPC Standard Practices, pricing for all forms of HKPC services should be based on the full-cost recovery principle and concessions can be applied if certain criteria are met. Audit reviewed the consultancy projects accepted in 2018-19 and noted that the clients in 484 (51%) of the 944 projects accepted were small and medium enterprises according to HKPC Standard Practices and concessions of up to 30% could be offered to them. Of these 484 consultancy projects, 221 (45.7%) were not offered any concession, 250 (51.6%) were offered 20% concessions, 12 (2.5%) were offered 30% concessions and 1 (0.2%) was offered a 65% concession. However, there was no documentary evidence showing the justifications for the different concession rates offered in each project (paras. 2.14, 2.17 and 2.18).

5. ***Delay in consultancy project completion.*** Audit examined the consultancy projects completed in the period from 2014-15 to 2018-19 and found that of the 4,299 consultancy projects completed, 1,243 (29%) were completed after the approved completion date. The average duration of delay for these 1,243 projects was 42 days (para. 2.20).

6. ***Costs incurred for consultancy projects not fully recovered.*** According to HKPC Standard Practices, fees for projects carried out should be charged on a full-cost recovery basis. Audit noted that of the 4,299 consultancy projects completed in the period from 2014-15 to 2018-19, full cost was not recovered in 1,078 (25%)

projects. The total deficit of these 1,078 projects amounted to $33 million. However, there was no documentary evidence showing the reasons for their deviations from the full-cost recovery basis (para. 2.21).

7.   ***Need to tighten controls on services provided for manufacturing support projects.***   HKPC's manufacturing support projects mainly include projects that provide testing, machining and other professional support services to clients. In the period from July 2016 to September 2018, HKPC found that a staff had not billed two clients after providing workshop services to them with a total value of $200,000 and $70,000 respectively. During the same period, the two clients had provided $200,000 and $70,000 respectively as sponsorships for two Innovation and Technology Fund (ITF) projects of which the staff was in charge. Audit noted that the minimum sponsorship requirement on the two ITF projects would not have been met if the two sums had been accounted for as workshop service income instead of sponsorships. ITC needs to consider whether follow-up actions on the sponsorship issue identified by HKPC are required (paras. 2.29(a) and 2.33 to 2.36).

8.   ***Target on the income of Inno Space not met.***   Inno Space, established in October 2017, is operated by HKPC to provide manufacturing support services to users not engaged in manufacturing support projects. Membership fee was the main source of income of Inno Space other than government subvention. Audit noted that in 2018-19, while the number of members recruited exceeded the target of 200 by 125%, the income fell short of the target by 40%. Audit analysed the number of members recruited in 2018-19 and found that of the 450 members recruited in 2018-19, 236 (52%) were trial members who were not required to pay any membership fee (paras. 2.37 and 2.42).

9.   ***Need to promote the utilisation of the equipment of Inno Space.***   Audit reviewed the 2018-19 booking records of ten items of equipment of Inno Space with total cost of $2.4 million and analysed the number of days on which the items were booked. Audit found that of the 297 available days in 2018-19, the number of days on which the items of equipment were booked was only 26 (8.8% of the available days for booking) on average, ranging from 1 (0.3%) to 138 (46.5%) (para. 2.45).

Research and development projects

10.   ***Need to review KPIs for managing R&D projects.*** HKPC's R&D projects are funded from different sources, including ITF funded projects, projects funded by other government funding schemes and projects commissioned by private sector clients. HKPC has set two KPIs for managing R&D projects, namely "Number of new R&D projects" and "Number of on-going R&D projects" (paras. 3.2 and 3.3). Audit found that in the period from 2014-15 to 2018-19:

(a)   68 (33%) of the 203 new projects were counted as both consultancy projects and R&D projects at the same time. They were counted against two targets, namely "Number of consultancy projects accepted" and "Number of new R&D projects". If these 68 projects had only been allowed to be counted against the target for either R&D projects or consultancy projects, the achievement of the targets on the KPIs might have been affected (para. 3.4(a)); and

(b)   on average, 60% of the on-going R&D projects were projects brought forward from previous years, with delayed projects included therein accounting for 4%. Using the number of on-going projects as a KPI might give an unintended incentive for project teams to delay projects in hand unnecessarily (paras. 3.7 and 3.8).

11.   ***Late submission of project reports for ITF funded R&D projects.*** For the 33 ITF funded R&D projects completed in the period from 2014-15 to 2018-19, Audit noted that, of the 106 Progress Reports and Final Reports due for submission by HKPC to ITC, 37 (35%) were submitted late (para. 3.12).

12.   ***Need to improve KPIs for commercialisation of R&D results.*** HKPC has set two KPIs relating to commercialisation of its products and technologies, namely "Number of patents/licences/royalties" and "Number of products/technologies commercialised" (para. 3.18). Audit noted that in the period from 2014-15 to 2018-19:

(a)   of the 86 patents, licences or royalties awarded/entered, 77 (90%) were patents awarded, while the number of licence or royalty agreements entered only contributed 9 (10%) of the total. However, a product or technology is not commercialised when a patent is awarded (para. 3.21); and

(b)   of the 97 products or technologies commercialised, only 45 (46%) were developed from R&D projects. Moreover, when a product or technology was sold to more than one client, the single product or technology was counted as more than one products or technologies commercialised (para. 3.23).

13.   ***Need to endeavour to increase the number of patents commercialised.*** As at 31 August 2019, HKPC had 123 patents. Audit noted that of these 123 patents, only 4 (3%) had generated licence or royalty income since patent registration, and the total licence and royalty income generated by them was $1.5 million. The remaining 119 (97%) patents had not generated any licence or royalty income since patent registration (para. 3.26).

Provision of training programmes

14.   ***Targets on KPIs for training programmes not met.*** HKPC provides public training programmes for enrolment by the public and corporate training programmes for companies and organisations. Audit analysed the performance of HKPC's training programmes for the period from 2014-15 to 2018-19 and found that: (a) the actual numbers of fee-charging training programmes launched in the period from 2014-15 to 2016-17 were only 60% to 90% of the targets; (b) the actual numbers of people attending the fee-charging training programmes in 2014-15 and 2015-16 were only 52% and 79% of the targets; and (c) the actual income from training programmes for the period from 2014-15 to 2018-19 was only 47% to 65% of the targets, decreasing from $12.9 million in 2014-15 to $7.6 million in 2018-19 (paras. 4.3 and 4.6).

15.   ***Low enrolment of public training programmes.*** According to HKPC's Guidebook for Organising Public Training Programme (Guidebook), proposals shall be prepared for all new public training programmes and submitted to the management for approval. Audit examined the enrolment rates of 30 of the 120 public training programmes organised in 2018-19 and found that: (a) for 10 (33%) programmes, the estimated enrolment was not included in the proposals; and (b) for the remaining 20 (67%) programmes, the actual enrolment of 12 (60%) of these 20 programmes were less than the estimated enrolment included in the proposals (about 15% to 92% of the estimated enrolment, 59% on average). Audit also found that 38 (32% of 120) programmes had fewer than ten participants. These 38 programmes included 15 with the estimated number of enrolment not included in the proposals and 8 with the estimated number of enrolment set below ten (paras. 4.14, 4.15, 4.17 and 4.18).

Executive Summary

16.   ***Market demand assessment not conducted for some programmes.***
According to the Guidebook, the responsible division should conduct a market demand assessment to justify the launch of each new public training programme. Audit examined the proposals of 30 new public training programmes organised in 2018-19 and found that: (a) for 11 (37%) proposals, market demand assessment was not conducted; and (b) for 2 (7%) proposals, the programme organisers stated in the proposals that market demand assessments had been conducted. However, details and results of the market demand assessments could not be found in the proposals (paras. 4.21 and 4.22).

17.   ***Need to improve evaluation of training programmes.*** According to the Guidebook, all public training programmes organised would be subject to programme-end evaluation by the trainees. Results from the evaluation forms are input into the Public Training Administration (PTA) system for review by the Officer-in-charge (OIC) of the programme and management. The OIC of each programme conducts an annual review to determine whether the programme should be continued in the coming year. There were no internal guidelines on whether the evaluation data of corporate training programmes should also be kept in the PTA system (paras. 4.28 and 4.30). Audit found that in the period from 2015-16 to 2018-19:

(a)   the evaluation data of 242 (43%) of the 559 public training programmes organised were not available in the PTA system. While the evaluation data of 65 (19%) of the 340 corporate training programmes organised were also kept in the PTA system and used for the computation of the overall participants satisfaction index (i.e. one of the KPIs for training programmes), the evaluation data of the remaining 275 (81%) corporate training programmes were not kept in the PTA system (paras. 4.29 and 4.30);

(b)   the annual response rate of the evaluation forms decreased from 51% in 2015-16 to 43% in 2018-19 (para. 4.32); and

(c)   annual reviews had not been conducted for some public training programmes, ranging from 9% to 33% of the programmes organised in each year (para. 4.35).

18.   ***Need to improve utilisation of training venues.***   Apart from training programmes organised by HKPC, the training venues of HKPC are also available for use by outside organisations.   Audit found that the overall utilisation rates of HKPC training venues in 2017-18 and 2018-19 were low (i.e. 17% and 16% respectively). In particular, the utilisation rate of each and every training venue was less than 50% during both office hours and non-office hours (paras. 4.39 and 4.41).

Audit recommendations

19.   **Audit recommendations are made in the respective sections of this Audit Report.   Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Executive Director, HKPC should:**

Provision of consultancy and manufacturing support services

(a)   **when there is a change in the definition of a performance indicator, review the performance target and inform ITC and the Council of the change and its effect (para. 2.27(a)(i) to (iii));**

(b)   **take measures to ensure that the minimum rate charged for productivity related assignments elsewhere than in Hong Kong is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance (para. 2.27(b));**

(c)   **promulgate guidelines on the basis of determining fee concession rate for each project (para. 2.27(c));**

(d)   **take measures to ensure that consultancy projects are completed in a timely manner with full cost recovered in accordance with HKPC Standard Practices (para. 2.27(d) to (f));**

(e)   **tighten controls on services provided for manufacturing support projects to ensure that all service fees are collected (para. 2.47(a));**

(f)   **step up efforts to ensure the sustainable operation of Inno Space on a self-recovery basis and take measures to promote the utilisation of the equipment (para. 2.47(b) and (d));**

Research and development projects

(g)   **issue clear guidelines on the classification of projects into consultancy projects and R&D projects and on the counting of projects for performance measurement (para. 3.14(a));**

(h)   **examine the suitability of using the number of on-going projects as a KPI (para. 3.14(b));**

(i)   **take measures to ensure that Progress Reports and Final Reports of ITF funded R&D projects are submitted to ITC in a timely manner (para. 3.14(d));**

(j)   **explore the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered (para. 3.28(b));**

(k)   **consider the merits of reporting the commercialisation of products or technologies developed from R&D projects and other projects separately (para. 3.28(c));**

(l)   **report both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year (para. 3.28(d));**

(m)   **endeavour to increase the number of licence/royalty agreements (para. 3.28(e));**

Provision of training programmes

(n)   **step up efforts to enhance the performance of training programmes, in particular, the income from public training programmes (para. 4.12(a));**

(o)   **step up efforts to improve the enrolment rates of public training programmes and consider their worthiness before organising programmes with very few expected participants (para. 4.26(a) to (d));**

(p)   **ensure that the Guidebook accurately stipulates the types of new public training programmes requiring market demand assessment and the requirements are complied with (para. 4.26(e) and (f));**

(q)   **take measures to improve the evaluation of training programmes (para. 4.37(a) to (d)); and**

(r)   **step up efforts to improve the utilisation of the training venues (para. 4.44(a) and (b)).**

20.   **Audit has *recommended* that CIT should, in connection with the reviews of manufacturing support projects by HKPC, consider whether ITC should take appropriate follow-up actions on the sponsorship issue identified by HKPC (para. 2.48).**

Response from HKPC and the Government

21.   The Executive Director, HKPC and CIT agree with the audit recommendations.

PART 1: INTRODUCTION

1.1   This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2   In the 1960s, with the predominance of family-owned small operations in the manufacturing sector, the Government saw the need to provide organised facilities to support the further development of Hong Kong industry. In 1967, the Government established the Hong Kong Productivity Council (HKPC) under the HKPC Ordinance (Cap. 1116) with an aim to improve the productivity, operational efficiency and competitiveness of local industries. According to section 4 of the HKPC Ordinance, the functions of HKPC shall be:

(a)   to promote the increased productivity of industry in Hong Kong and to encourage the more efficient utilisation of resources therein;

(b)   to consider matters affecting productivity of industry in Hong Kong;

(c)   to advise the Chief Executive (CE) of the Hong Kong Special Administrative Region concerning the productivity of industry in Hong Kong and measures designed to increase it;

(d)   to consult with, co-ordinate and assist the activities of persons or organisations, either in Hong Kong or elsewhere, engaged in the study, development or dissemination of programmes, methods or techniques designed to increase productivity in industry; and

(e)   to take on productivity related assignments elsewhere than in Hong Kong subject to the conditions that:

(i)   the work can be carried out without prejudice to the performance by HKPC of the functions referred to in (a) to (d) above; and

(ii) the minimum rate charged by HKPC for the work is sufficient to recover all costs incurred in carrying out that work, which costs shall include direct costs (recurrent and capital) and overhead costs.

Consultancy Study of 2002

1.3 Since the early 1980s, more and more Hong Kong manufacturers had relocated their factories to the Pearl River Delta Region and their Hong Kong offices became headquarters for manufacturing support and other higher value-adding activities (e.g. product design, procurement, marketing, quality control, etc.). In June 2001, in the light of the rapidly evolving economic landscape of Hong Kong, HKPC commissioned a Consultancy Study to review its role, management and operation to ensure its effectiveness in fulfilling its public mission and delivering its services to meet the need of its clients and the economy as a whole.

1.4 The Consultancy Study was completed in April 2002. The study recommended that HKPC's future service focus should be on providing integrated support to innovative and growth oriented Hong Kong firms across the value chain. The main sectoral focus should be on manufacturing firms, particularly those in Hong Kong's foundation industries (Note 1), and related service activities. According to the study:

(a) a role in relation to the manufacturing value chain fitted better with HKPC's existing competencies; and

(b) this provided a sharp service focus and ensured that the manufacturing sector, which was vital to Hong Kong's prosperity, was properly supported.

HKPC accepted the recommendations of the study.

Note 1: *According to the Consultancy Study, Hong Kong's foundation industries included electronics, machinery and equipment, toys and plastics, textiles and clothing.*

Memorandum of Administrative Arrangements with the Government

1.5   In March 2003, the Government and HKPC entered into a Memorandum of Administrative Arrangements (MAA).   MAA provides a framework for the relationship between the Government and HKPC and sets out in detail the responsibilities of each party.   Following the recommendations of the 2002 Consultancy Study (see para. 1.4), MAA states that:

  (a)   the provisions of MAA are founded on the principle that HKPC should have autonomy and flexibility in utilising its funds and resources insofar as it is not inconsistent with the provisions of the HKPC Ordinance;

  (b)   the service focus of HKPC is to provide integrated support to innovative and growth oriented Hong Kong firms across the value chain, with the sectoral focus on manufacturing, particularly in Hong Kong's foundation industries, and related service activities, and the main geographical focus on Hong Kong and the Pearl River Delta in Mainland China;

  (c)   HKPC may keep as reserves any savings from its annual block grant arising from any reasons other than a curtailment or cessation of activity stated in its Annual Programme and Estimates (see para. 1.11), or reduction in remuneration for its staff as a consequence of any civil service's pay adjustment; and

  (d)   at any one point in time the level of reserves shall not exceed 15% of HKPC's annual block grant in the current financial year. Amount in excess of the limit shall be returned to the Government in the following financial year.

1.6   In June 2009, the Government and HKPC renewed MAA. A number of revisions were made to MAA including, for example, removal of the clause that required HKPC to use part of its subvention obtained from the Government to fund the recurrent operating cost of the Clothing Technology Demonstration

Introduction

Centre Company Limited (Note 2). However, the salient features mentioned in paragraph 1.5 remained unchanged.

Recent initiatives of HKPC

1.7　　In the 2016 Policy Address, CE said that re-industrialisation was a potential new area of economic growth for Hong Kong and announced that HKPC would facilitate industrial upgrading and transformation, enabling enterprises to embrace re-industrialisation and move towards high value-added production. Examples of major initiatives introduced by HKPC in 2017 and 2018 to facilitate the Government's policy direction of re-industrialisation included:

(a)　　establishing the "Smart Industry One" (see Photograph 1) in August 2017 to showcase the concept and features of the Fourth Industrial Revolution;

(b)　　establishing the "Inno Space" (see Photograph 2) in October 2017 to provide working space and technical support for start-ups, students and graduates so as to help them develop their innovative ideas into industrial designs; and

(c)　　launching the "Smart Industry One Consortium" exchange platform in March 2018 to enable the industry to keep abreast of the latest development on smart industry.

Note 2:　*Clothing Technology Demonstration Centre Company Limited was a subsidiary of HKPC, which served to demonstrate technologies and production systems with a view to improving the efficiency of the textile and garment sectors. The Council (see para. 1.8) decided that the company had completed its mission and the company was wound up in October 2008.*

Photograph 1

Smart Industry One of HKPC

Source: HKPC records

Photograph 2

Inno Space of HKPC

Source: HKPC records

Introduction

Governance and management

1.8   The Council is the governing body of HKPC. According to the HKPC Ordinance, the Council shall consist of not more than 23 members appointed by CE (Note 3), comprising a Chairman, 17 persons representing management, labour and professional or academic interests, and not more than five public officers (Note 4). The Council meets three times a year and is supported by four Committees:

(a)   ***Audit Committee.***   The responsibilities of this Committee include monitoring and making recommendations to enhance HKPC's healthy corporate governance. As at 31 March 2019, there were seven members in this Committee;

(b)   ***Business Development Committee.*** The responsibilities of this Committee include reviewing the business activities of HKPC, exploring new business opportunities, and recommending the three-year strategic plan of HKPC to the Council. As at 31 March 2019, there were eight members in this Committee;

(c)   ***Finance Committee.***   The responsibilities of this Committee include monitoring the financial performance of HKPC, making recommendations on HKPC's Three-year Forecast (see para. 1.11) and Annual Programme and Estimates, and the transfer of funds between major heads of expenditure, for consideration by the Council. It also advises the Council on matters relating to HKPC's financial policies and matters that have a significant financial impact on HKPC. As at 31 March 2019, there were eight members in this Committee; and

(d)   ***Staffing Committee.***   The responsibilities of this Committee include appointing staff and monitoring the staffing situation. It also advises the Council on human resources development policies and monitors HKPC's

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Note 3:   *The authority of CE to appoint members of the Council, other than the Chairman, has been delegated to the Secretary for Innovation and Technology.*

Note 4:   *As at 31 March 2019, the five public officers appointed as Council members were: (a) the Permanent Secretary for Innovation and Technology; (b) the Commissioner for Innovation and Technology; (c) the Director-General of Trade and Industry; (d) the Government Economist; and (e) the Deputy Commissioner for Labour (Labour Administration).*

general terms and conditions of service. As at 31 March 2019, there were ten members in this Committee.

1.9   Under the HKPC Ordinance, the Council is given the power to appoint an Executive Director (ED) to be the chief administrative officer, other officers, servants and agents. As at 31 March 2019, HKPC had a total of 640 staff, comprising 245 permanent and 395 contract staff. The organisation chart of HKPC as at 31 March 2019 is shown at Appendix A.

Role of the Commissioner for Innovation and Technology

1.10   The Commissioner for Innovation and Technology (CIT), who heads the Innovation and Technology Commission (ITC), is the Controlling Officer of the subventions granted to HKPC (see para. 1.15). As the Controlling Officer, CIT is responsible for ensuring that HKPC's activities accord with its objectives and relevant public policies and priorities, and that HKPC's policy objectives are appropriate. CIT may also advise HKPC on the need to review these objectives in the light of changes in the economic environment.

1.11   According to MAA, HKPC is required to submit to CIT annually a Three-year Forecast and an Annual Programme and Estimates. The Three-year Forecast should set out the strategic targets of HKPC, the plans to be adopted in achieving these targets and an assessment of their resource implications. On the other hand, the Annual Programme and Estimates should include proposed activities categorised in different programme areas and estimates of income and expenditure for the forthcoming financial year for the Government's approval.

1.12   Under the HKPC Ordinance, HKPC is also required to submit to the Government within six months after the end of each financial year, for tabling in the Legislative Council:

   (a)   a report on its activities; and

   (b)   a copy of its audited accounts.

HKPC Standard Practices

1.13   HKPC has issued a set of HKPC Standard Practices to provide guidance to staff for the proper administration and functioning of HKPC.   HKPC Standard Practices stipulate the policies, regulations and procedures governing HKPC's operations (e.g. human resource and procurement management).

Income

1.14   In 2017-18, HKPC had a total income of $711 million. Figure 1 provides an analysis of the sources of income.

Figure 1

Analysis of total income of $711 million of HKPC (2017-18)
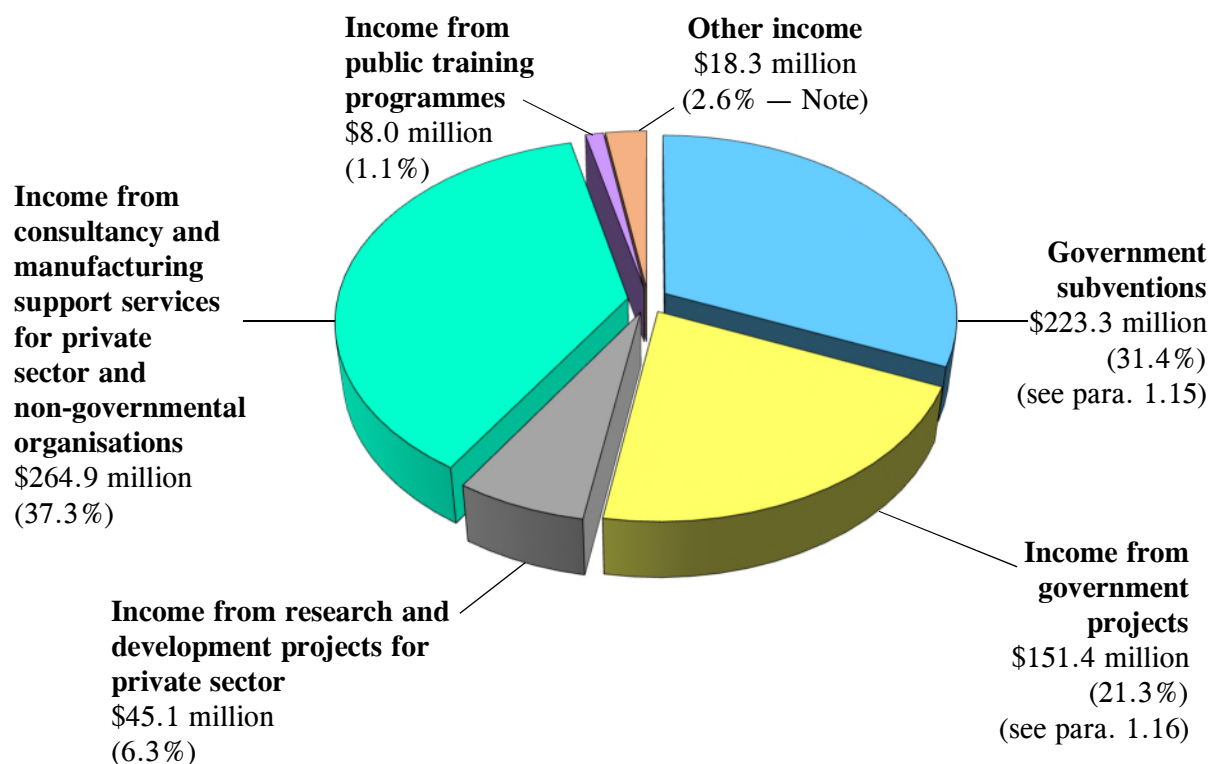
Source: HKPC records

Note: Other income was mainly income from exhibitions and study missions, interest income and rental income.

1.15   The Government partly funds the operation of HKPC. In 2017-18, total government subventions received by HKPC amounted to $223.3 million.   The subventions comprised the following:

  (a)   ***Recurrent subvention.***   This is provided to HKPC in the form of a cash-limited annual block grant. In 2017-18, HKPC received a recurrent subvention of $201.9 million from ITC;

  (b)   ***Subvention in addition to annual block grant.***   To enhance HKPC's services, additional subventions have been provided on top of the annual block grant on a time limited basis. In 2017-18, income recognised from ITC's additional subvention for Inno Space (see para. 1.7(b)) amounted to $5.4 million (Note 5); and

  (c)   ***Funding to the Automotive Parts and Accessory Systems Research and Development Centre (APAS)*** (Note 6). According to a Funding Agreement entered into between the Government and HKPC in March 2013, the Innovation and Technology Fund (ITF — Note 7) provides financial assistance to support the operation of APAS for the period from 1 April 2006 to 31 March 2021. In 2017-18, HKPC received $16 million from ITF to cover the operating costs of APAS.

Note 5:   *ITC's financial provision to HKPC in 2017-18 under the Government's General Revenue Account amounted to $215.9 million, comprising a recurrent subvention of $201.9 million and an additional subvention of $14 million for the Inno Space. Of the $14 million for the Inno Space, HKPC recognised $5.4 million and $8.6 million as its income in 2017-18 and 2018-19 respectively in accordance with its accounting policies.*

Note 6:   *APAS was initially set up as an independent legal entity. In November 2012, it merged with HKPC and became a division of the Technology Development Branch of HKPC.*

Note 7:   *ITF was established under the Public Finance Ordinance (Cap. 2) to finance projects that contribute to innovation and technology upgrading in the manufacturing and service industries, as well as those that contribute to the upgrading and development of the manufacturing and service industries.*

Introduction

1.16   In addition to government subventions, HKPC also received the following income from the Government:

(a)   ***Income from government funding schemes.*** These mainly represented ITF funded research and development (R&D) projects initiated by HKPC. In 2017-18, project funding from ITF amounted to $57.9 million;

(b)   ***Consultancy services for government bureaux/departments (B/Ds).*** These mainly represented consultancy services engaged by B/Ds through competitive bidding processes. For example, the Highways Department engaged HKPC to develop a robot system for placement and collection of traffic cones and lanterns in road works (see Photograph 3). In 2017-18, income from consultancy services for B/Ds amounted to $65.7 million; and

(c)   ***Secretariat services for government funding schemes*** (Note 8). Services provided by HKPC included planning and organising publicity and promotional activities, receiving and undertaking initial vetting of applications, monitoring the progress of approved projects, and disbursing funds for the funding schemes. In 2017-18, income from secretariat services for government funding schemes amounted to $27.8 million.

Note 8:   *In 2017-18, HKPC provided secretariat services for four government funding schemes, namely: (a) Cleaner Production Partnership Programme; (b) Dedicated Fund on Branding, Upgrading and Domestic Sales; (c) Recycling Fund; and (d) Retail Technology Adoption Assistance Scheme for Manpower Demand Management.*

Photograph 3

**A consultancy project on robot system engaged by
the Highways Department**

Source: HKPC records

Expenditure

1.17   In 2017-18, HKPC had a total expenditure of $663.7 million. Figure 2 provides an analysis of the expenditure.

Figure 2

**Analysis of total expenditure of \$663.7 million of HKPC
(2017-18)**

Depreciation and amortisation
\$40.8 million
(6.2%)

Administrative expenses
\$51.7 million
(7.8%)

Staff emoluments
\$341.4 million
(51.4%)

Project related expenses
\$229.8 million
(34.6%)
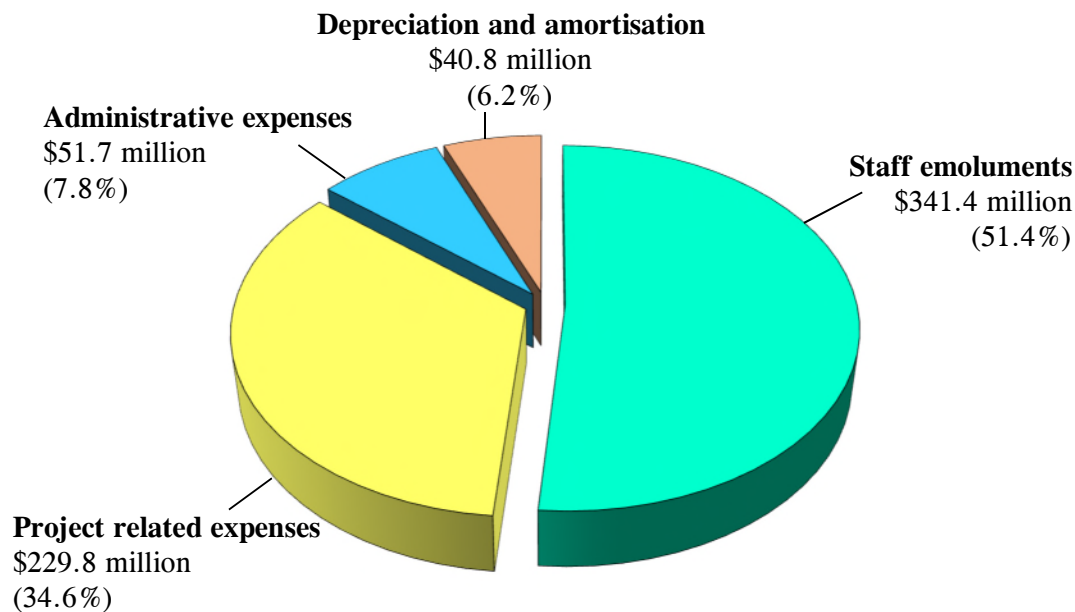
Source: HKPC records

Audit review

1.18   In 2009, the Audit Commission (Audit) completed a review of HKPC and reported the results in Chapter 7 and Chapter 8 of the Director of Audit's Report No. 53 of October 2009.

1.19   In March 2019, Audit commenced a review of HKPC. The findings of this audit review are contained in two separate Audit Reports, as follows:

(a)   "Provision of consultancy, research and development and training services by the Hong Kong Productivity Council" (the subject matter of this Audit Report); and

(b)   "Governance and administrative issues of the Hong Kong Productivity Council" (Chapter 3 of the Director of Audit's Report No. 73).

1.20   This Audit Report focuses on the following areas:

  (a)   provision of consultancy and manufacturing support services (PART 2);

  (b)   research and development projects (PART 3); and

  (c)   provision of training programmes (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from HKPC

1.21   ED, HKPC agrees with all the issues raised in the two Audit Reports and accepts the corresponding recommendations. He has said that he greatly appreciates the tremendous efforts made by Audit in conducting the review. The areas covered are comprehensive and the recommendations made are useful and constructive. HKPC attaches great importance to the audit recommendations, and has drawn up a detailed action plan with full consultation to the HKPC Council on it. Follow-up actions have been taken immediately in respect of some of the audit recommendations, whilst further concrete actions have been scheduled to implement the rest.

General response from the Government

1.22   CIT agrees with the audit recommendations. She has said that:

  (a)   the Government appreciates the audit review on the administration and operation of HKPC. ITC is grateful for the observations and recommendations, which will help HKPC improve its corporate governance, financial and human resources management, management of consultancy and manufacturing support services, performance measurement and commercialisation of results of R&D projects, as well as provision of training services in order to serve the industry more effectively and efficiently; and

(b)   HKPC has informed the Government that it accepts all the recommendations as set out in the two Audit Reports. ITC will work closely with HKPC to ensure the early implementation of improvement measures as appropriate.

Acknowledgement

1.23   Audit would like to acknowledge with gratitude the full cooperation of the staff of ITC and HKPC during the course of the audit review.

PART 2: PROVISION OF CONSULTANCY AND MANUFACTURING SUPPORT SERVICES

2.1   This PART examines the provision of consultancy and manufacturing support services by HKPC. Audit found room for improvement in the following areas:

   (a)   management of consultancy services (paras. 2.2 to 2.28); and

   (b)   management of manufacturing support services (paras. 2.29 to 2.50).

Management of consultancy services

2.2   HKPC provides consultancy services to clients mainly through two types of consultancy projects:

   (a)   advisory projects to provide professional help and advice to clients (e.g. problem diagnosis and solution recommendation); and

   (b)   development projects to develop products or systems for clients.

2.3   In 2017-18, the total income from consultancy services provided to clients in the private sector and non-governmental organisations amounted to $244.9 million. In addition, HKPC also provided consultancy services to B/Ds and secretariat services for government funding schemes.   In 2017-18, income from these services were $65.7 million and $27.8 million respectively (see para. 1.16(b) and (c)).

Target on number of consultancy projects accepted not met

2.4   According to MAA:

(a)   to ensure that the subventions from the Government are used in a cost-effective manner for the provision of services, HKPC shall propose for CIT's approval a set of performance indicators for measuring the progress of HKPC's activities;

(b)   HKPC shall submit to CIT a report on its achievements with regard to the performance indicators. These indicators provide important reference for planning and measuring the progress of the activities undertaken by HKPC and for facilitating the assessment and approval of HKPC's Annual Programme and Estimates by the Government; and

(c)   if HKPC fails to achieve agreed performance targets, HKPC shall provide explanations for such failures to the satisfaction of CIT.

2.5   HKPC has set six key performance indicators (KPIs) for consultancy services in the Annual Programme and Estimates approved by the Council and CIT:

(a)   customer satisfaction index;

(b)   income from consultancy projects;

(c)   income per consultancy project in progress;

(d)   number of consultancy projects accepted;

(e)   number of theme-based industry consultation organised; and

(f)   percentage of customers giving a score of 7.5 or above out of 10 in terms of productivity gain.

2.6   Audit reviewed whether the targets on these KPIs were met and found that there was room for improvement in achieving the KPI "Number of consultancy projects accepted" (see para. 2.5(d)):

(a)   although the target had been adjusted downwards every year during the four-year period 2014-15 to 2017-18 (from 1,250 in 2014-15 to 968 in 2017-18), the number of consultancy projects accepted did not meet the target throughout the period; and

(b)   the target was further adjusted downwards to 935 in 2018-19, and the actual number of consultancy projects accepted then met the target (see Table 1).

Table 1

Number of consultancy projects accepted
(2014-15 to 2018-19)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Target (a)	1,250	1,070	1,020	968	935
Actual (b)	970	917	948	699	944
Actual as a percentage of target (c)＝(b)÷(a)×100％	78％	86％	93％	72％	101％

Source: HKPC records

2.7   Audit reviewed the reason for the 35％ increase in the number of consultancy projects accepted from 699 in 2017-18 to 944 in 2018-19.   Audit found that at a management meeting chaired by ED in July 2018, it was decided that in order to catch up with the target, manufacturing support projects (e.g. laboratory testing) with service fees over $5,000 would be regarded as consultancy projects.   Accordingly, 141 such manufacturing support projects were classified as consultancy projects in 2018-19.   If these projects had not been so classified, the number of consultancy projects accepted in 2018-19 would have been only 803, falling short of the target of 935.   Moreover, the target of 935 was not revised according to the new definition of consultancy projects to achieve a like-with-like comparison between the target number and the actual number.

Provision of consultancy and manufacturing support services

There was no documentary evidence showing that the Council or ITC had been informed of the change in the definition. There was also no disclosure of the effect of the change in classifications on the achievement of the target on the KPI "Number of consultancy projects accepted" in reporting the performance in the annual review report submitted to CIT and the Council.

2.8　　In response to Audit's enquiry, HKPC informed Audit in September 2019 that before the management meeting in July 2018 (see para. 2.7), HKPC had conducted a review on the definition of consultancy projects. It was proposed that the KPI "Number of consultancy projects accepted" should include manufacturing support projects with service fees over $5,000 because such projects very often contained consultancy elements.

2.9　　The change in the definition of consultancy projects has a significant impact on the performance measurement of HKPC as it affected HKPC's achievement on the KPI targets (see para. 2.7). Audit considers that when there is a change in the definition of a performance indicator, the performance target should be reviewed to ascertain whether a corresponding revision is necessary. HKPC also needs to inform ITC and the Council of the change and the justifications for the change, and disclose the effects of the change on achievement of KPI target in the annual review report submitted to CIT and the Council.

Some assignments taken on elsewhere than in Hong Kong did not recover all costs incurred

2.10　　According to the HKPC Ordinance, productivity related assignments elsewhere than in Hong Kong shall not be taken on unless the minimum rate charged by HKPC for the work is sufficient to recover all costs incurred (see para. 1.2(e)). Moreover, HKPC Standard Practices stipulate that the minimum fees charged for overseas projects must be sufficient to recover all direct and overhead costs plus a contingency factor.

2.11　　HKPC records all overseas projects separately and prepares individual project reports for overseas projects at the end of each financial year. Audit reviewed the overseas project reports and noted that in the period from 2014-15 to 2018-19, HKPC completed 788 consultancy projects which were productivity related assignments

elsewhere than in Hong Kong. Of these 788 consultancy projects, 308 (39%) did not recover all costs incurred (see Table 2).

Table 2

**Consultancy projects outside Hong Kong
which did not recover all costs incurred
(2014-15 to 2018-19)**

Year	No. of projects completed	Total deficit ($'000)	Percentage of under-recovery of cost
2014-15	73	266	1.7%
2015-16	58	148	2.3%
2016-17	68	498	3.1%
2017-18	53	235	2.1%
2018-19	56	269	2.1%
Overall	308	1,416	2.3%

Source: Audit analysis of HKPC records

2.12   In response to Audit's enquiry, HKPC informed Audit in September 2019 that of the 308 consultancy projects outside Hong Kong that did not recover all costs incurred:

(a)   257 (83%) were budgeted to recover all cost incurred. The actual deficits incurred were due to unexpected technical or execution difficulties; and

(b)   the remaining 51 (17%) had budgeted deficits. For 47 (92%) of the 51 projects, HKPC acted as the implementing agent of a government funding programme, which supported Hong Kong companies with manufacturing facilities in the Mainland. The programme lasted for more than five years and the inflationary factor built in at the quotation stage was insufficient to cover the subsequent increase in staff charging rates.

2.13   Audit considers that HKPC needs to document the justifications for failing to recover all costs incurred for consultancy projects outside Hong Kong, and take measures to ensure that the minimum rate charged for productivity related assignments elsewhere than in Hong Kong is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance.

Need to promulgate guidelines on fee concessions

2.14   According to HKPC Standard Practices, pricing for all forms of HKPC services should be based on the full-cost recovery principle and concessions can be applied if certain criteria are met. Details are as follows:

(a)   the maximum concessions to be offered:

   (i)   35% for a start-up company (Note 9);

   (ii)   30% for a small and medium enterprise (SME) not belonging to a listed company or itself not being a listed company. "SME" refers to a manufacturing business employing fewer than 100 persons in Hong Kong; or a non-manufacturing business employing fewer than 50 persons in Hong Kong; and

   (iii)   20% for services involving technological developmental or business management developmental nature, or having other business reasons to justify concession. Under exceptional circumstances, ED might grant an additional concession of 10%.

   For cases satisfying both (i) and (iii), the maximum concession is at 35%. For cases satisfying both (ii) and (iii), the maximum concession is 30%; and

(b)   65% concessions for ITF funded projects.

Note 9:   *According to HKPC Standard Practices, "start-up company" refers to a company registered in Hong Kong with less than two years of incorporation and not being a listed company or belonging to a listed company, local or outside Hong Kong.*

2.15   In addition to the rules stipulated in HKPC Standard Practices, there were two other management decisions governing concessions:

(a)   a senior management meeting was held in June 2016 among ED, three branch directors, Head of Internal Audit and Risk Management Office (ARO) and the General Manager of the Corporate Communication and Marketing Division (currently known as Corporate Development Division). At the meeting, it was decided that HKPC should try to charge clients at price levels that achieve full-cost recovery without concession as far as practicable because HKPC had been falling behind the target on value added (i.e. margin between project income and expenses) for a number of years; and

(b)   in May 2017, the General Manager of the Management Consulting Division had given a blanket approval to offer 20% concessions to all projects undertaken by the Intellectual Property Services Centre (IPSC) of HKPC (Note 10).

However, the two decisions were not incorporated in HKPC Standard Practices.

2.16   Audit reviewed the 2,591 consultancy projects accepted in the period from 2016-17 to 2018-19 and noted that fee concessions were offered to the clients in 860 (33.2%) projects (see Table 3).

Note 10:   *The services of IPSC include: (a) assisting clients to apply for patents and trademarks; (b) providing consultancy services in patent search and intellectual property management; and (c) acting as the implementation agent of ITC's Patent Application Grant, which subsidises local companies and individuals to apply for patents.*

Table 3

Fee concessions offered to consultancy projects
(2016-17 to 2018-19)

Fee concession	No. of consultancy projects accepted			
	2016-17	**2017-18**	**2018-19**	**Overall**
0%	562 (59.3%)	499 (71.4%)	670 (71.0%)	1,731 (66.8%)
20%	247 (26.0%)	95 (13.6%)	259 (27.4%)	601 (23.2%)
30%	121 (12.8%)	89 (12.7%)	14 (1.5%)	224 (8.7%)
35%	– (0.0%)	1 (0.2%)	– (0.0%)	1 (0.0%)
65%	18 (1.9%)	15 (2.1%)	1 (0.1%)	34 (1.3%)
Total	948 (100.0%)	699 (100.0%)	944 (100.0%)	2,591 (100.0%)

No. of projects with fee concessions offered: 860 (33.2%)

Source: HKPC records

2.17   Audit reviewed the consultancy projects accepted in 2018-19 and noted that the clients in 484 (51%) of the 944 projects accepted were companies with fewer than 50 employees in Hong Kong. According to HKPC Standard Practices, these clients were defined as SMEs and concessions of up to 30% could be offered to them (Note 11). Audit reviewed the concessions rates offered to the 484 SMEs and found that the rates were not consistent:

(a)   221 (45.7%) were not offered any concession;

(b)   250 (51.6%) were offered 20% concessions, all of which were projects undertaken by IPSC (see para. 2.15(b));

Note 11: *There was no information on how many clients were manufacturing business employing fewer than 100 employees but not fewer than 50 employees in Hong Kong. Moreover, there was also no readily available information on whether a client was a start-up company or whether the service provided for a project involved technological developmental or business management developmental nature.*

(c)   12 (2.5%) were offered 30% concessions; and

(d)   1 (0.2%) was offered a 65% concession.

2.18   In response to Audit's enquiry, HKPC informed Audit in September 2019 that concessions were offered on a client-by-client basis, taking into consideration the market situation and HKPC's business operations and financial situation. However, Audit noted that there was no documentary evidence showing the justifications for the different concession rates offered in each project.

2.19   Audit noted that HKPC Standard Practices only stipulated the maximum concessions that could be offered. Audit considers that HKPC needs to promulgate guidelines on the basis of determining the fee concession rate for each project to ensure that concessions are appropriately offered to clients on a consistent basis.

Delays in consultancy project completion

2.20   Audit examined the consultancy projects completed in the period from 2014-15 to 2018-19 and found that of the 4,299 consultancy projects completed, 1,243 (29%) were completed after the approved completion dates (Note 12) (see Table 4). According to HKPC, it strengthened the management control on project delays in mid-2018. Since then, all project delays have been reported to senior management. As a result, the percentage of projects with delay in project completion decreased to 14% in 2018-19. Audit considers that HKPC needs to ascertain the reasons why a considerable proportion of consultancy projects experienced delay and take appropriate measures to ensure that consultancy projects are completed in a timely manner.

Note 12:   *The project manager of consultancy projects may seek the client's consent and obtain management's approval for extension of project completion date. The approved completion date refers to the original approved completion date or the approved extended completion date, where applicable.*

Table 4

Analysis of delays in consultancy projects completion
(2014-15 to 2018-19)

Year	No. of projects completed	No. of projects with delay	Average duration of delay (Day)
2014-15	874 (100%)	273 (31%)	51
2015-16	746 (100%)	292 (39%)	43
2016-17	878 (100%)	301 (34%)	44
2017-18	866 (100%)	248 (29%)	37
2018-19	935 (100%)	129 (14%)	29
Overall	4,299 (100%)	1,243 (29%)	42

Source: Audit analysis of HKPC records

Remarks: The duration of delay was counted from the approved completion date to the actual completion date.

Costs incurred for consultancy projects not fully recovered

2.21   According to HKPC Standard Practices, fees for projects carried out should be charged on a full-cost recovery basis (Note 13).   Audit noted that of the 4,299 consultancy projects completed in the period from 2014-15 to 2018-19, full cost was not recovered in 1,078 (25%) projects. The total deficit of these projects amounted to $33 million (see Table 5). However, there was no documentary evidence showing the reasons for their deviations from the full-cost recovery basis.

Note 13: *For projects with concessions offered, the full costs will be calculated using the concession rates and the income received shall recover the full costs so calculated.*

Table 5

**Consultancy projects not achieving full-cost recovery
(2014-15 to 2018-19)**

Year of completion	No. of projects completed	No. of projects with deficit	Deficit ($ million)
2014-15	874 (100%)	199 (23%)	3
2015-16	746 (100%)	176 (24%)	2
2016-17	878 (100%)	227 (26%)	4
2017-18	866 (100%)	254 (29%)	16
2018-19	935 (100%)	222 (24%)	8
Overall	4,299 (100%)	1,078 (25%)	33

Source: Audit analysis of HKPC records

2.22   In response to Audit's enquiry, HKPC informed Audit in September 2019 that of the 1,078 consultancy projects with deficits:

(a)   923 (86%) were budgeted with full-cost recovery. The deficits were due to unexpected technical or execution difficulties; and

(b)   for the remaining 155 (14%), the deficits had been foreseen when the projects were accepted:

    (i)   121 were accepted despite deficits in the budgets as they would allow HKPC to acquire new technical skills or enter into new industry segments; and

    (ii)   34 were government funded projects to fulfil HKPC's public mission to serve the industry and hence cost recovery was not planned for.

2.23   Audit considers that HKPC needs to take appropriate measures to ensure that consultancy projects are completed with full cost recovered in accordance with HKPC Standard Practices.   For projects which are accepted despite the fact that full-cost recovery is not expected, HKPC needs to ensure that they are fully justified with the justifications properly documented.

Costs incurred for terminated projects not fully recovered

2.24   Consultancy projects can be terminated by clients or HKPC prior to completion. It is a standard term in the agreement between a client and HKPC that in the event of project termination, the clients shall be liable to reimburse HKPC for all costs incurred up to the date of project termination. In the period from 2014-15 to 2018-19, 109 consultancy projects were terminated. In 58 (53%) of these 109 projects, the clients did not reimburse HKPC for all costs incurred up to the date of project termination. The total costs not reimbursed amounted to $3 million, representing 27% of the total costs incurred for these projects. There was no documentary evidence showing the justifications for not seeking reimbursement from the clients. Case 1 shows an example.

Case 1

**A terminated consultancy project
where the client did not reimburse HKPC any cost
(February to October 2018)**

1.   In February 2018, HKPC entered into an agreement with a client for a consultancy project for developing an electric device with a project fee of $1,050,000. According to the project agreement:

  (a)   the client should make a down payment of $400,000 to HKPC before the commencement of the project;

  (b)   the project agreement might be terminated by either party by giving one-month notice in writing; and

  (c)   in the event of project termination, the client should be liable to reimburse HKPC for all costs and expenses actually incurred up to the date of agreement termination.

Case 1 (Cont'd)

2.　　Following the receipt of down payment from the client, the project commenced in March 2018. In October 2018, the project manager sought the Director of the Digital Branch's approval for terminating the project because:

(a)　　the client had changed the product design several times. The project team was of the view that the product design proposed by the client could not be accepted because of risk, cost and functional consideration; and

(b)　　the project team expected that there would be other difficulties with the client.

3.　　The project team also informed the Director of the Digital Branch that upon the project termination, it would hand over the semi-finished deliverables to the client and fully refund the down payment of $400,000 to the client. The project team, however, did not state the justification for the handover of the semi-finished deliverables free of charge and the full refund of down payment without any deduction of the costs incurred for the project. The Director of the Digital Branch approved the termination of the project, together with the handover of all semi-finished deliverables and the full refund of the down payment without deducting the costs incurred.

Audit comments

4.　　Up to the termination of the project in October 2018, the total cost incurred by HKPC for the project amounted to $254,000. According to the project agreement, in the event of project termination, the client should be liable to reimburse HKPC for all costs incurred up to the date of project termination. However, HKPC did not request the client to reimburse HKPC for the costs incurred and there was no documentary evidence showing the justifications for not doing so.

Source:　Audit analysis of HKPC records

2.25   In response to Audit's enquiry, HKPC informed Audit in September 2019 that of the 58 terminated projects where the clients did not reimburse HKPC for all costs incurred:

(a)   in 55 projects, the deficits were resulted from project issues not due to the clients such as extra manhours on project R&D work with learning element on HKPC's part, technical and project execution challenges causing the deliverable not meeting project requirement, extra project preparation work, etc. HKPC considered that it might not have strong valid grounds to recover the costs from the clients;

(b)   in two projects, the project work was continued in another two projects from which all costs incurred had been recovered; and

(c)   in one project, the client was liquidated.

2.26   Audit considers that HKPC needs to take measures to ensure that where appropriate, costs incurred for terminated projects are reimbursed by clients according to the project agreements. For terminated projects where the waiver of the requirement on the clients to reimburse HKPC for the costs incurred is justified, the justifications and the approval for granting the waiver shall be properly documented.

Audit recommendations

2.27   **Audit has *recommended* that ED, HKPC should:**

(a)   **when there is a change in the definition of a performance indicator:**

(i)   **review the performance target to ascertain whether a corresponding revision is necessary;**

(ii)   **inform ITC and the Council of the change and the justifications for the change; and**

(iii)   **disclose the effects of the change on achievement of KPI target in the annual review report submitted to CIT and the Council;**

(b)   document the justifications for failing to recover all costs incurred for consultancy projects outside Hong Kong, and take measures to ensure that the minimum rate charged for productivity related assignments elsewhere than in Hong Kong is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance;

(c)   promulgate guidelines on the basis of determining fee concession rate for each project to ensure that concessions are appropriately offered to clients on a consistent basis;

(d)   ascertain the reasons why a considerable proportion of consultancy projects experienced delay and take appropriate measures to ensure that consultancy projects are completed in a timely manner;

(e)   take appropriate measures to ensure that consultancy projects are completed with full cost recovered in accordance with HKPC Standard Practices;

(f)   for projects which are accepted despite the fact that full-cost recovery is not expected, ensure that they are fully justified with the justifications properly documented;

(g)   take measures to ensure that where appropriate, costs incurred for terminated projects are reimbursed by clients according to the project agreements; and

(h)   for terminated projects where the waiver of the requirement on the clients to reimburse HKPC for the costs incurred is justified, ensure that the justifications and the approval for granting the waiver are properly documented.

Response from HKPC

2.28   ED, HKPC agrees with the audit recommendations. He has said that:

(a)   when there is a change in the definition of a performance indicator, HKPC will:

    (i)   document clearly the reasons for the change;

    (ii)   review the performance target to ascertain whether a corresponding revision is necessary;

    (iii)   inform ITC and the Council of the change and the impact if the change will affect the performance of KPIs; and

    (iv)   disclose the effect of the change on achievement of KPI target in the annual review report submitted to CIT and the Council;

(b)   of the 308 consultancy projects outside Hong Kong which did not recover all costs incurred (see para. 2.11), 286 (93%) were either for Hong Kong enterprises or their subsidiaries in Guangdong;

(c)   for productivity related assignments elsewhere than in Hong Kong, HKPC will remind its staff to:

    (i)   monitor project cost closely to ensure full-cost recovery of projects and to document the justifications for failing to recover all costs incurred; and

    (ii)   ensure that the minimum rate charged is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance;

(d)   HKPC will state the criteria and the requirements for applying the concession in a more precise fashion in HKPC Standard Practices;

(e)   in view of the fact that the growth in value added of HKPC has become steady in the recent two years, and that the economic outlook for SMEs has significantly deteriorated, the management of HKPC decided in September 2019 that it would offer 30% concession on labour rate to all SMEs in Hong Kong for consultancy projects, R&D projects and testing services. All new projects for SME clients will be subject to the same level of concession on labour rate and this measure will be continued until the end of March 2020. HKPC will review the impact of this measure on the value added of HKPC;

(f)   some projects were delayed because the clients requested more time for project execution. All project delays will be reported to the Directorate Office on a monthly basis with justifications; and

(g)   HKPC will remind its staff to:

(i)   ensure that consultancy projects are completed with full cost recovered in accordance with HKPC Standard Practices;

(ii)   document justifications for accepting those projects for which full-cost recovery is not expected; and

(iii)   request clients of terminated projects to reimburse cost incurred and seek management's written approval for exception.

Management of manufacturing support services

2.29   HKPC provides manufacturing support services through:

(a)   *Manufacturing support projects.* These mainly include projects that provide testing, machining and other professional support services to clients (e.g. laboratory testing); and

(b)   *Theme-based manufacturing support services.* Apart from manufacturing support projects, HKPC has recently introduced various theme-based initiatives as part of its manufacturing support services to the industry. For example, HKPC established Inno Space in October 2017 to provide

workspace and technical support to users and assist them in developing innovative ideas into industrial design (see para. 2.37).

2.30   In 2017-18, the total income from manufacturing support services provided to clients in the private sector and non-governmental organisations was $20 million.

2.31   As part of the manufacturing support services of HKPC, clients of manufacturing support projects may use HKPC's manufacturing supporting facilities (see Table 6). HKPC charges these manufacturing support projects on a full-cost recovery basis.

Table 6

Facilities for manufacturing support projects
(31 March 2019)

Division	Facility
Automotive and Electronics Division (AED)	Electromagnetic Compatibility Centre
	Optics Manufacturing Workshop (OMW)
	Reliability Testing Centre
Environmental Management Division	Environmental and Product Innovation Laboratory
	Textile and Apparel Testing Service Centre
Smart Manufacturing and Mainland Business Division	3D Printing Centre
	Advanced Surface Technology Development Centre
	Conformal Cooling Technology Centre
	Materials Testing Laboratory
	Metal Injection Moulding Centre
	Plastics Technology Centre
	Watch and Clock Testing Centre

Source: HKPC records

Need to tighten controls on services provided for manufacturing support projects

2.32   In September 2018, the General Manager of AED found that a staff (Staff A) did not record some of the workshop service income of OMW. Upon enquiry, Staff A said that he intended to record the income as sponsorship for an ITF project of which he was in charge. Staff A resigned from HKPC with his last working day being 30 September 2018.

2.33   In response to the incident, HKPC's ARO conducted a review of all workshop services provided by OMW in the period from July 2016 to September 2018. In March 2019, ARO reported to the HKPC Audit Committee that Staff A had not billed Clients A and B after providing services to them with a total value of $200,000 and $70,000 respectively. During the same period, Clients A and B had provided $200,000 and $70,000 respectively as sponsorships for two ITF projects of which Staff A was in charge.

2.34   In March 2019, HKPC issued bills to Clients A and B demanding the payments of the outstanding service fees. Client A said that it was an agreed arrangement with Staff A that, in exchange for the services provided by OMW, Staff A received $200,000 from Client A as sponsorships for two ITF funded R&D projects of which he was in charge. In the event, Clients A and B had not settled the bills.

2.35   According to the Guide to Filling in the Application Forms issued by ITC, the minimum industry sponsorship for an ITF project shall be 10% of the total project cost. For the two ITF projects in this case, Audit noted that the minimum sponsorship requirement would not have been met if the $200,000 and $70,000 had been accounted for as workshop service income instead of sponsorships.

2.36   Audit considers that HKPC needs to review manufacturing support projects to identify services provided that were not billed. HKPC also needs to tighten controls on services provided for manufacturing support projects to ensure that all service fees are collected. Audit also considers that, in connection with the reviews by HKPC, ITC needs to consider whether appropriate follow-up actions on the sponsorship issue identified by HKPC are required.

Manufacturing support services provided by Inno Space

2.37   In the 2017 Policy Address, the Government announced that it would establish Inno Space with HKPC in order to support a start-up culture and re-industrialisation.   Inno Space was established in October 2017 to provide manufacturing support services to users not engaged in manufacturing support projects (see para. 2.29(a)).   The Government had provided $17.8 million to support the operation of Inno Space up to March 2019.   Since April 2019, Inno Space has been operated by HKPC on a self-recovery basis (i.e. the Government no longer provides any funding for Inno Space and any surplus or deficit of Inno Space is recognised by HKPC).   The services of Inno Space include:

  (a)   providing start-ups, makers and designers with equipment and machinery for developing prototypes;

  (b)   providing business training for entrepreneurs and start-ups;

  (c)   providing a focal point for developing an eco-system for the start-up community; and

  (d)   providing technical advisory services on patent application, standard compliance, testing and production.

2.38   Inno Space is located in the HKPC Building in Kowloon Tong, which consists of the following three areas with a total area of approximately 8,000 square feet:

  (a)   ***Inno Idea.*** An area where members can hold meetings, design products and develop mobile applications (see Photograph 4);

  (b)   ***Inno Network.*** An event space for workshops, seminars and networking (see Photograph 5); and

  (c)   ***Inno Prototype.*** An area where equipment items are available for members to create prototypes (see Photograph 6).

Photograph 4

Inno Idea

Source: HKPC records

Photograph 5

Inno Network

Source: HKPC records

Photograph 6

Inno Prototype

Source: HKPC records

Provision of consultancy and manufacturing support services

2.39   Users are required to register as a member and pay membership fees (Note 14) before they can use the facilities of Inno Space (see Table 7).

Table 7

Membership scheme of Inno Space
(31 March 2019)

Validity period	Membership fee
One-month free trial (for new members only)	Free of charge
One day	$20 to $200
Seven days	$100 to $650
One month	$200 to $800
Three months	$600 to $1,920
Six months	$1,200 to $3,360
12 months	$2,400 to $4,800

Source: HKPC records

Target on the income of Inno Space not met

2.40   HKPC has set five performance indicators for Inno Space:

   (a)   income;

   (b)   number of events;

   (c)   number of members recruited;

Note 14: *There are three tiers of membership for Inno Space, namely: (a) Creator; (b) Partner Creator (for members of partner organisations); and (c) Student Creator (for full-time students aged 16 or above). Membership fees for Partner Creators and Student Creators are charged at discount prices.*

(d)   number of partner organisations; and

(e)   number of visitors.

2.41   In 2018-19, Inno Space did not meet two of the five performance targets (see Table 8).

Table 8

Performance of Inno Space
(2018-19)

Performance indicator	Target (a)	Actual (b)	Actual as a percentage of target (c)=(b)÷(a)×100%
Income	$532,000	$319,000	60%
No. of events	48	52	108%
No. of members recruited	200	450	225%
No. of partner organisations	20	10	50% (Note)
No. of visitors	7,200	16,682	232%

Source: Audit analysis of HKPC records

Note: According to the 2019-20 Annual Plan of Inno Space, HKPC will actively approach potential partners in 2019-20 with a view to increasing the number of partner organisations.

2.42   Membership fee was the main source of income of Inno Space other than government subvention. Audit noted that in 2018-19, while the number of members recruited exceeded the target of 200 by 125%, the income fell short of the target by 40%. Audit analysed the number of members recruited in 2018-19 and found that of the 450 members recruited in 2018-19, 236 (52%) were trial members who were not required to pay any membership fee.

Provision of consultancy and manufacturing support services

2.43   Audit considers that HKPC needs to step up efforts to ensure the sustainable operation of Inno Space on a self-recovery basis.

Need to improve the booking system for the equipment of Inno Space and promote utilisation

2.44   As at 31 March 2019, there were 25 items of equipment available for booking by members. The total acquisition cost of the equipment was $4 million. According to the rules of Inno Space, a member can book items of equipment for intervals of 30 minutes for up to four hours per week for each item of equipment. A booking logbook is maintained for each item of equipment. Audit reviewed the logbooks of 2018-19 and found that in some cases, when a member made a booking, the logbook only recorded the date on which the member intended to use the equipment without recording the time of the intended usage. This was not satisfactory because:

   (a)   the item of equipment may be mistaken as not available for booking throughout all the 30-minute intervals on the same date; and

   (b)   it was not possible to ensure that the booking of the member did not exceed four hours per week for the booked item of equipment.

2.45   Audit reviewed the 2018-19 booking records of ten items of equipment with total cost of $2.4 million and analysed the number of days on which they were booked. Audit found that of the 297 available days in 2018-19, the number of days on which the items of equipment were booked was only 26 (8.8% of the available days for booking) on average, ranging from 1 (0.3%) to 138 (46.5%) (see Table 9). When an item of equipment was booked on a particular day, information was not available on how many 30-minute intervals the equipment was used.

Table 9

Booking records of ten items of equipment of Inno Space
(2018-19)

Equipment	Purchase cost ($)	No. of days on which the equipment was booked (a)	Percentage of days on which the equipment was booked (Note) (b) = (a) ÷ 297 days × 100%
1. Drilling machine	5,000	1	0.3%
2. Grinding machine	77,000	1	0.3%
3. Vacuum forming machine	147,000	3	1.0%
4. Sewing machine	17,000	4	1.3%
5. Laser welding machine	196,000	14	4.7%
6. Sand blasting machine	26,000	17	5.7%
7. Metal laser cutting machine	1,073,000	21	7.1%
8. Milling machine	50,000	26	8.8%
9. Professional 3D printer	600,000	32	10.8%
10. Laser cutting (plastic and wood) machine	200,000	138	46.5%
Average		26	8.8%

Source: Audit analysis of HKPC records

Note: In 2018-19, there were 297 days on which the equipment was available for booking.

2.46   Audit considers that HKPC needs to take measures to improve the booking system of the equipment of Inno Space and promote the utilisation of the equipment.

Audit recommendations

2.47   **Audit has *recommended* that ED, HKPC should:**

(a)   **review manufacturing support projects to identify services provided that were not billed, and tighten controls on services provided for manufacturing support projects to ensure that all service fees are collected;**

(b)   **step up efforts to ensure the sustainable operation of Inno Space on a self-recovery basis;**

(c)   **take measures to improve the booking system of the equipment of Inno Space; and**

(d)   **take measures to promote the utilisation of the equipment of Inno Space.**

2.48   **Audit has *recommended* that CIT should, in connection with the reviews of manufacturing support projects by HKPC, consider whether ITC should take appropriate follow-up actions on the sponsorship issue identified by HKPC.**

Response from HKPC

2.49   ED, HKPC agrees with the audit recommendations in paragraph 2.47. He has said that:

(a)   HKPC will review all manufacturing support projects with a view to ensuring that all services provided in the past were paid for and take measures to ensure that in future, all service fees are collected;

(b)   while it was expected that HKPC would operate Inno Space on a self-recovery basis after the Government had provided additional subvention to support its establishment and its initial operation, given that the service focus of Inno Space is still under review at its early stage of establishment, Inno Space may not be able to be self-financing. Indeed, the latest strategy is to position Inno Space as a social mission and to expand its scope of services to cover science, technology, engineering and mathematics education to offer more services to the youth community;

(c)   HKPC will continue to review the operation of Inno Space with a view to increasing the income to ensure its sustainable operation;

(d)   additional procedures with system enhancement will be put in place to enhance the current booking system procedures and records of the equipment of Inno Space; and

(e)   HKPC will promote usage of the equipment of Inno Space to members through different channels.

Response from the Government

2.50   CIT agrees with the audit recommendation in paragraph 2.48. She has said that ITC will consider taking appropriate follow-up actions on the sponsorship issue identified by HKPC.

PART 3: RESEARCH AND DEVELOPMENT PROJECTS

3.1   This PART examines the R&D projects of HKPC. Audit found room for improvement in the following areas:

  (a)   management of R&D projects (paras. 3.2 to 3.15); and

  (b)   commercialisation of results of R&D projects (paras. 3.16 to 3.29).

Management of R&D projects

3.2   HKPC's R&D projects can be classified into three categories according to their sources of funding:

  (a)   ***ITF funded projects.*** ITF funded projects are approved by ITC. In addition to HKPC Standard Practices, the project managers of ITF funded projects need to observe the Funding and Administrative Guidelines for Successful Applicants issued by ITC and the Project Agreements signed between HKPC and ITC. In the period from 2014-15 to 2018-19, HKPC completed 33 ITF funded R&D projects. The total project cost of these 33 projects was $153 million;

  (b)   ***Projects supported by the Commercial Research and Development Fund (CRDF) of HKPC.*** CRDF is a fund established by HKPC using internal resources to support HKPC divisions to conduct preliminary R&D projects on new technologies, methodologies, services, etc. In the period from 2014-15 to 2018-19, HKPC completed 55 CRDF projects. The total project cost of these 55 projects was $13 million; and

  (c)   ***Other projects.*** These are projects supported by funding sources other than ITF and CRDF, including projects funded by other government funding schemes and projects commissioned by private sector clients. In the period from 2014-15 to 2018-19, HKPC completed 85 such projects. The total project cost of these 85 projects was $151 million.

Need to review KPIs for managing R&D projects

3.3 HKPC has set two KPIs for managing R&D projects, namely "Number of new R&D projects" and "Number of on-going R&D projects" in the Annual Programme and Estimates approved by the Council and CIT. In the period from 2014-15 to 2018-19, the actual numbers exceeded the targets on the KPIs significantly (see Table 10).

Table 10

Achievement of targets on KPIs for R&D projects
(2014-15 to 2018-19)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Number of new R&D projects						
Target (a)	29	29	30	35	35	158
Actual (b)	31	38	46	45	43	203
Actual as a percentage of target (c)＝(b)÷(a)×100％	107％	131％	153％	129％	123％	128％
Number of on-going R&D projects						
Target (d)	43	52	49	65	65	274
Actual (e)	67	99	99	127	132	524
Actual as a percentage of target (f)＝(e)÷(d)×100％	156％	190％	202％	195％	203％	191％

Source: Audit analysis of HKPC records

Research and development projects

3.4   ***KPI "Number of new R&D projects".*** Audit reviewed the number of new R&D projects in the period from 2014-15 to 2018-19 and found the following issues:

(a)   ***Projects counted as both consultancy projects and R&D projects.*** One of the KPIs for consultancy projects was "Number of consultancy projects accepted" (see para. 2.5(d)). In the period from 2014-15 to 2018-19, 68 (33%) of the 203 new projects were counted as both consultancy projects and R&D projects at the same time (i.e. double-counted projects). They were counted against two targets, namely "Number of consultancy projects accepted" and "Number of new R&D projects" in the respective years. If these 68 projects had only been allowed to be counted against the target for either R&D projects or consultancy projects, the achievement of the targets on the KPIs might have been affected (see Tables 11(a) and (b)); and

Table 11(a)

Number of new R&D projects if
all double-counted projects were excluded
(2014-15 to 2018-19)

Year	Double-counted projects (a) (No.)	New R&D projects		
		Target (No.)	Actual (b) (No.)	Excluding double-counted projects (c) = (b) − (a) (No.)
2014-15	4	29	31	*27
2015-16	20	29	38	*18
2016-17	14	30	46	32
2017-18	20	35	45	*25
2018-19	10	35	43	*33
Total	68	158	203	135

Legend: * KPI target could not be met after excluding double-counted projects

Source: Audit analysis of HKPC records

Table 11(b)

**Number of consultancy projects accepted if
all double-counted projects were excluded
(2014-15 to 2018-19)**

Year	Double-counted projects (a) (No.)	Consultancy projects accepted		
		Target (b) (No.)	Actual (b) (No.)	Excluding double-counted projects (c)＝(b)－(a) (No.)
2014-15	4	1,250	970	#966
2015-16	20	1,070	917	#897
2016-17	14	1,020	948	#934
2017-18	20	968	699	#679
2018-19	10	935	944	*934
Total	68	5,243	4,478	4,410

Legend: * KPI target could not be met after excluding double-counted projects

KPI target could not be met both before and after excluding double-counted projects

Source: Audit analysis of HKPC records

(b)   ***Lack of clear guidelines on classification of projects.*** HKPC guidelines on the reporting of performance on KPIs clearly defined "consultancy projects" by specifying the types of projects that would be counted as consultancy projects. However, the guidelines only stated that projects with "R&D elements" should be counted as R&D projects, without elaborating what "R&D elements" were, and whether a project could be both a consultancy project and an R&D project at the same time, and counted for performance measurement against two targets.

Research and development projects

3.5   In response to Audit's enquiry, HKPC informed Audit in September 2019 that:

(a)   for each consultancy project, technical staff of HKPC assessed whether the project contained "R&D elements" and the management of each division reviewed and reported to ED the new R&D projects commenced in their divisions on a monthly basis; and

(b)   KPIs were set to assess HKPC's performance in different aspects and consultancy projects with R&D elements could be counted against the KPI targets for both R&D projects and consultancy projects.

3.6   Audit considers that HKPC needs to issue clear guidelines on the classification of projects into consultancy projects and R&D projects and on the counting of projects for performance measurement against targets.   To enhance transparency, Audit considers that HKPC needs to disclose the number of projects that are counted against both the targets on KPIs "Number of consultancy projects accepted" and "Number of new R&D projects" in the annual review report submitted to CIT and the Council.

3.7   *KPI "Number of on-going R&D projects".*   HKPC counts the number of on-going R&D projects as projects that are completed during the year plus projects that are in progress at the end of the year.   Audit analysed the number of on-going R&D projects in the period from 2014-15 to 2018-19 and found that:

(a)   on average, 60% of the on-going R&D projects were projects brought forward from previous years; and

(b)   on average, 4% of the on-going R&D projects were delayed projects (i.e. projects that were not completed on or before the approved completion dates) (see Table 12), all of which were brought forward from previous years (see para. 3.7(a)).

Table 12

**Projects brought forward and delayed projects included in the
number of on-going R&D projects
(2014-15 to 2018-19)**

Year	No. of on-going projects (a)	Projects brought forward		Delayed projects	
		No. (b)	Percentage (c) = (b) ÷ (a) × 100%	No. (d)	Percentage (e) = (d) ÷ (a) × 100%
2014-15	67	39	58%	3	4%
2015-16	99	56	57%	2	2%
2016-17	99	54	55%	7	7%
2017-18	127	80	63%	5	4%
2018-19	132	86	65%	1	1%
Average	105	63	60%	4	4%

Source: Audit analysis of HKPC records

3.8   In the period from 2014-15 to 2018-19, HKPC exceeded the targets on the number of on-going R&D projects significantly, ranging from 56% to 103% of the targets (see Table 10 in para. 3.3).   In Audit's view, the number of on-going R&D projects is a workload indicator which can be affected by many factors such as the number of uncompleted projects brought forward from previous years and delays in project completion.   It might not be a favourable variance when the actual number of on-going projects exceeds the target.   Using such KPI for performance management might give an unintended incentive for project teams to delay the R&D projects in hand unnecessarily.   Audit considers that HKPC may need to examine the suitability of using the number of on-going R&D projects as a KPI.

Project delays

3.9   Audit noted that of the 173 R&D projects completed in the period from 2014-15 to 2018-19, 102 (59%) were completed after the approved completion date (see Table 13).   In particular, of the 33 ITF funded R&D projects completed during the period, 27 (82%) experienced delays in completion.

Table 13

**Analysis of delays in R&D projects completion
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19	Overall
(a) ITF funded projects						
— No. of projects completed on time	1 (33%)	– (0%)	– (0%)	1 (11%)	4 (40%)	6 (18%)
— No. of projects completed with delay	2 (67%)	5 (100%)	6 (100%)	8 (89%)	6 (60%)	27 (82%)
Subtotal	3 (100%)	5 (100%)	6 (100%)	9 (100%)	10 (100%)	33 (100%)
Average duration of delay (No. of days)	211	159	121	148	36	124
(b) Non-ITF funded projects						
— No. of projects completed on time	4 (21%)	8 (40%)	8 (30%)	19 (53%)	26 (68%)	65 (46%)
— No. of projects completed with delay	15 (79%)	12 (60%)	19 (70%)	17 (47%)	12 (32%)	75 (54%)
Subtotal	19 (100%)	20 (100%)	27 (100%)	36 (100%)	38 (100%)	140 (100%)
Average duration of delay (No. of days)	57	18	33	20	34	32
Total ((a)+(b))						
— No. of projects completed on time	5 (23%)	8 (32%)	8 (24%)	20 (44%)	30 (63%)	71 (41%)
— No. of projects completed with delay	17 (77%)	17 (68%)	25 (76%)	25 (56%)	18 (37%)	102 (59%)
Total	22 (100%)	25 (100%)	33 (100%)	45 (100%)	48 (100%)	173 (100%)
Average duration of delay (No. of days)	75	59	54	61	34	57

Source: Audit analysis of HKPC records

*Remarks: The duration of delay was counted from the approved completion date (i.e. the original
approved completion date or the approved extended completion date, where applicable) to
the actual completion date.*

3.10   In response to Audit's enquiry, HKPC informed Audit in September 2019 that some of the delayed ITF funded projects had already delivered the completed R&D deliverables to the sponsors, and the project delays recorded in the system were largely caused by uncompleted paper work and reporting. Audit considers that HKPC needs to take measures to ensure that R&D projects are completed in a timely manner, including completion of R&D deliverables and reporting requirements.

Late submission of project reports for ITF funded R&D projects

3.11   For each ITF funded R&D project, a Project Agreement is signed between HKPC and ITC. The Project Agreement requires HKPC to submit to ITC for approval:

(a)   Progress Reports within one month from the dates of project milestones specified in the Project Agreement; and

(b)   a Final Report within two months after project completion.

The Reports are required to include information on project progress, updates on project team and financial position of the project. Funds are disbursed if ITC is satisfied with the progress and has approved the Progress Reports. ITC has the right to defer payments until the milestones have been met, or terminate the project if there is a lack of material progress. Delay in submission of the Reports may also affect the applicant's future applications for funding support from ITC.

3.12   Audit reviewed the timeliness of the submission of Progress Reports and Final Reports for 33 ITF funded R&D projects completed in the period from 2014-15 to 2018-19. Of the 106 Progress Reports and Final Reports that were due for submission, 37 (35%) were submitted late (see Table 14).

Table 14

**Late submission of Progress Reports and Final Reports
(2014-15 to 2018-19)**

Submission time	No. of Reports		
	Progress Report	**Final Report**	**Overall**
On time	47 (63%)	22 (69%)	69 (65%)
Late by 1 to 30 days	23 (31%)	6 (19%)	29 (27%)
Late by 31 to 90 days	2 (3%)	2 (6%)	4 (4%)
Late by 91 to 180 days	– (0%)	2 (6%)	2 (2%)
Late by 181 days to 428 days	2 (3%)	– (0%)	2 (2%)
Total	74 (100%)	32 (100%)	106 (100%)
Average number of days of delay	41	39	41

Late submission: 37 (35%)

Source: Audit analysis of ITC records

*Remarks: In the period from 2014-15 to 2018-19, 33 projects were completed. ITC
has approved to extend the report submission deadline of one of the
completed projects.*

3.13   To ensure effective monitoring of projects, Audit considers that HKPC
needs to take measures to ensure that Progress Reports and Final Reports of ITF
funded R&D projects are submitted to ITC in a timely manner.

Audit recommendations

3.14   **Audit has *recommended* that ED, HKPC should:**

(a)   **issue clear guidelines on the classification of projects into consultancy
projects and R&D projects and on the counting of projects for
performance measurement against targets, including making**

disclosures on projects counted against both the targets for consultancy projects and R&D projects;

(b)   **examine the suitability of using the number of on-going R&D projects as a KPI;**

(c)   **take measures to ensure that R&D projects are completed in a timely manner, including completion of R&D deliverables and reporting requirements; and**

(d)   **take measures to ensure that Progress Reports and Final Reports of ITF funded R&D projects are submitted to ITC in a timely manner.**

Response from HKPC

3.15   ED, HKPC agrees with the audit recommendations. He has said that:

(a)   HKPC will issue clear guidelines on the classification of projects into consultancy projects and R&D projects and on the counting of projects for performance measurement against targets, including making disclosures on projects counted against both the targets for consultancy projects and R&D projects;

(b)   HKPC will examine the suitability of using the number of on-going R&D projects as a KPI and report to ITC;

(c)   since July 2018, ED's approval with justifications has been required for all project delay requests. As a result of close management monitoring, the number of delayed projects has started to be trending down in 2018-19, and a majority of them were delays requested by clients. HKPC will continue to monitor closely the project progress; and

(d)   HKPC will monitor closely the submission of project Progress Reports and Final Reports and prepare monthly reports on late submission of Reports and check the justifications provided.

Commercialisation of results of R&D projects

3.16   If a product or technology developed is considered appropriate for wider commercial use, HKPC will apply for a patent for the product or technology and transfer it to the industry by way of commercialisation.   HKPC's objectives of commercialisation are:

(a)   to provide an effective and transparent channel for transferring products or technologies to industries to fully exploit their commercial potentials;

(b)   to make the products or technologies available to industries as wide as practicable under suitable intellectual property protection and management;

(c)   to derive a reasonable investment return to HKPC's development efforts; and

(d)   to ensure fair access to HKPC's products or technologies developed by potential commercialisation transferee in a transparent manner.

3.17   According to HKPC Standard Practices, there are two modes of commercialisation:

(a)   *Licensing agreement.*   Through a licensing agreement, the licensee can make use of the products or technologies developed by HKPC for a specific period by paying an upfront licensing fee and royalty fees to HKPC; and

(b)   *Sale.*   The products or technologies are sold to an external party and HKPC no longer retains the ownership of the intellectual property associated with the products or technologies.

Need to improve KPIs for commercialisation of R&D results

3.18   HKPC has set two KPIs relating to commercialisation of its products and technologies, namely "Number of patents/licences/royalties" and "Number of products/technologies commercialised".   Table 15 shows the targets and actual performance of the two KPIs in the period from 2014-15 to 2018-19.

Table 15

**Performance of commercialisation of new products and technologies
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19	Overall
Number of patents/licences/royalties						
Target (a)	8	8	8	10	10	44
Actual (b)	19	13	18	14	22	86
Actual as a percentage of target (c)=(b)÷(a)×100%	238%	163%	225%	140%	220%	195%
Number of products/technologies commercialised						
Target (d)	13	14	14	18	18	77
Actual (e)	15	21	19	24	18	97
Actual as a percentage of target (f)=(e)÷(d)×100%	115%	150%	136%	133%	100%	126%

Source: Audit analysis of HKPC records

3.19   ***Targets were exceeded by significant margins.*** HKPC over-performed in the period from 2014-15 to 2018-19 by a significant margin. During the period, the number of patents/licences/royalties exceeded the target by 40% to 138%. The number of products/technologies commercialised exceeded the target by up to 50%. To ensure effective performance management, Audit considers that HKPC needs to review whether the targets are realistic and challenging.

3.20   ***KPI "Number of patents/licences/royalties".*** This KPI comprised two parameters:

(a)   number of patents awarded; and

(b)   number of licence or royalty agreements entered.

Research and development projects

3.21 Audit noted that in the period from 2014-15 to 2018-19, the targets were achieved mainly due to the number of patents awarded. Of the 86 patents, licences or royalties awarded/entered during the period, 77 (90%) were patents awarded, while the number of licence or royalty agreements entered only contributed 9 (10%) of the total (see Table 16). However, a product or technology is not commercialised when a patent is awarded.

Table 16

Number of patents awarded and licence or royalty agreements entered
(2014-15 to 2018-19)

Year	No. of patents awarded (a)	No. of licence or royalty agreements entered (b)	Total (c)=(a)+(b)
2014-15	14 (74%)	5 (26%)	19 (100%)
2015-16	11 (85%)	2 (15%)	13 (100%)
2016-17	17 (94%)	1 (6%)	18 (100%)
2017-18	14 (100%)	− (0%)	14 (100%)
2018-19	21 (95%)	1 (5%)	22 (100%)
Overall	77 (90%)	9 (10%)	86 (100%)

Source: Audit analysis of HKPC records

3.22 Audit considers that to enhance performance monitoring on commercialisation of R&D results, HKPC needs to explore the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered.

3.23 ***Number of products/technologies commercialised.*** Audit reviewed the number of products or technologies commercialised in the period from 2014-15 to 2018-19 and noted that:

(a)   the number included products or technologies developed from projects other than R&D projects.   Of the 97 products or technologies commercialised during the period, only 45 (46%) were developed from R&D projects, and the remaining 52 (54%) were mainly generated by pilot technology development projects conducted by individual divisions; and

(b)   when a product or technology was sold to more than one client, the single product or technology was counted as more than one products or technologies commercialised.   For example, in 2017-18, a product was sold to five clients and HKPC counted that as five products commercialised.

3.24   In response to Audit's enquiry, HKPC informed Audit in September 2019 that the measurement of the KPI "Number of products/technologies commercialised" was intended to measure the success of a developed product/technology, which was reflected by the number of clients adopting the product/technology.

3.25   In Audit's view, there is a need to consider the merits of reporting the commercialisation of products or technologies developed from R&D projects and other projects separately with a view to enhancing transparency.   Moreover, the KPI "Number of products/technologies commercialised" was ambiguous as it was not clear whether the KPI represented the number of products/technologies commercialised or the number of commercialisation transactions of which HKPC had carried out during the year.   To ensure effective performance management, HKPC needs to report both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year in the annual review report submitted to CIT and the Council.

Need to endeavour to increase the number of patents commercialised

3.26   As at 31 August 2019, HKPC had 123 patents.   Particulars of the patents (e.g. patent title, registered country, patent number, etc.) were published on HKPC's website for licence application by interested parties.   Audit noted that of these 123 patents:

(a)   only 4 (3%) had generated licence or royalty income since patent registration, and the total licence and royalty income generated by them was $1.5 million; and

(b)   119 (97%) patents had not generated any licence or royalty income since patent registration. Audit noted that 27 of them had been registered for over five years.

3.27   In response to Audit's enquiry, HKPC informed Audit in September 2019 that:

(a)   due to the business nature of HKPC, the patents registered were not solely intended for licensing but mostly used for providing the technology basis for future projects (e.g. consultancy projects, ITF funded R&D projects, etc.) to serve the industry; and

(b)   another use of the patents was to prevent unauthorised use of HKPC's intellectual properties by other companies.

To maximise commercial use for new products/technologies developed, Audit considers that HKPC needs to endeavour to increase the number of licence/royalty agreements.

Audit recommendations

3.28   **Audit has *recommended* that ED, HKPC should:**

(a)   **review whether the targets for commercialisation of new products or technologies are realistic and challenging for effective performance management purpose;**

(b)   **explore the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered;**

(c)   **consider the merits of reporting the commercialisation of products or technologies developed from R&D projects and other projects separately with a view to enhancing transparency;**

(d) **report both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year in the annual review report submitted to CIT and the Council; and**

(e) **endeavour to increase the number of licence/royalty agreements.**

Response from HKPC

3.29   ED, HKPC agrees with the audit recommendations. He has said that:

(a) HKPC will examine whether the targets for commercialisation of new products or technologies are realistic and challenging for effective performance management;

(b) HKPC will examine the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered. HKPC will consider including additional KPIs such as "Income generated from commercialisation of technologies" to assess the commercialisation results;

(c) to accurately reflect the R&D efforts and commercialisation results generated, HKPC will record other projects that may develop products/technologies as divisional-level R&D projects for internal reference, so that commercialisation of products/technologies developed from these divisional-level R&D projects could be included for reporting;

(d) HKPC will examine with ITC the disclosure of both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year in the annual review report submitted to CIT and the Council; and

(e) HKPC will step up the marketing of relevant and market-ready HKPC's patents in Hong Kong and the Greater Bay Area.

PART 4: PROVISION OF TRAINING PROGRAMMES

4.1   This PART examines the provision of training programmes by HKPC, focusing on the following areas:

(a)   strategic planning of training programmes (paras. 4.4 to 4.13);

(b)   programme development and enrolment (paras. 4.14 to 4.27);

(c)   evaluation of training programmes (paras. 4.28 to 4.38); and

(d)   management of training venues (paras. 4.39 to 4.45).

Background

4.2   HKPC provides diversified training programmes designed to upgrade and update the knowledge and skills of practitioners in different business sectors. In 2004, HKPC established the Productivity Training Institute to provide HKPC's training programmes. In 2018, HKPC renamed the Productivity Training Institute as the HKPC Academy.

4.3   HKPC provides the following training programmes:

(a)   *Public training programmes.*   These programmes are available for enrolment by the public. Programme fees are determined by HKPC on a full-cost recovery basis. In 2018-19, HKPC organised 120 public training programmes; and

(b)   *Corporate training programmes.* These programmes are customised training programmes for companies and organisations, including in-company training programmes, training programmes conducted as part of consultancy projects and government funded projects. Topics are agreed in advance between the clients and HKPC. Fixed fees are charged on a full-cost recovery basis according to the agreements entered into between

the clients and HKPC. In 2018-19, HKPC organised 113 corporate training programmes.

Strategic planning of training programmes

4.4   According to the requirements in MAA, HKPC submits to CIT for approval annually a Three-year Forecast and an Annual Programme and Estimates (see para. 1.11), setting out the following information on HKPC's training programmes:

(a)   *For the forthcoming three years.* Strategic focus of training programmes, the estimated income and expenditure and the estimated number of training programmes; and

(b)   *For the forthcoming year.* KPIs for training programmes and the related targets.

Targets on KPIs for training programmes not met

4.5   HKPC has set four KPIs for training programmes in the Annual Programme and Estimates approved by the Council and CIT:

(a)   number of fee-charging training courses launched (Note 15);

(b)   number of people attended the fee-charging training courses (Note 15);

(c)   training participants satisfaction index; and

(d)   income from training courses (Note 16).

Note 15:   *The term "training courses" used in these KPIs refers to training programmes organised by HKPC.*

Note 16:   *KPI "Income from training courses" refers to income from public training programmes.*

Provision of training programmes

4.6   Audit analysed the performance of HKPC's training programmes for the period from 2014-15 to 2018-19 and found that:

(a)   although the target on KPI "Number of fee-charging training courses launched" was adjusted downwards by 25% from 300 in 2014-15 to 226 in 2016-17, the actual numbers in these years were only 60% to 90% of the targets;

(b)   although the target on KPI "Number of people attended the fee-charging training courses" was adjusted downwards by 7% from 5,800 in 2014-15 to 5,370 in 2015-16, the actual numbers in these years were only 52% and 79% of the targets; and

(c)   although the target on KPI "Income from training courses" was adjusted downwards every year from $19.8 million in 2014-15 to $12.6 million in 2018-19 (i.e. a reduction of 36%), the actual income amounted to only 47% to 65% of the targets, decreasing from $12.9 million in 2014-15 to $7.6 million in 2018-19 (see Table 17).

Table 17

**Achievement of targets on KPIs for training programmes
(2014-15 to 2018-19)**

KPI	Performance	2014-15	2015-16	2016-17	2017-18	2018-19
No. of fee-charging training courses launched	Target (a)	300	285	226	200	200
	Actual (b)	180	196	203	267	233
	Actual as a percentage of target (c)=(b)÷(a)×100%	*60%	*69%	*90%	134%	117%
No. of people attended the fee-charging training courses	Target (d)	5,800	5,370	3,390	3,000	3,000
	Actual (e)	3,041	4,248	4,198	6,196	6,079
	Actual as a percentage of target (f)=(e)÷(d)×100%	*52%	*79%	124%	207%	203%
Training participants satisfaction index	Target (g)	7.7	8.0	8.0	8.2	8.2
	Actual (h)	8.1	8.4	8.4	8.4	8.6
	Actual as a percentage of target (i)=(h)÷(g)×100%	105%	105%	105%	102%	105%
Income from training courses ($ million)	Target (j)	19.8	19.0	17.6	14.0	12.6
	Actual (k)	12.9	8.9	9.4	8.0	7.6
	Actual as a percentage of target (l)=(k)÷(j)×100%	*65%	*47%	*53%	*57%	*60%

Legend: * KPI target not met

Source: Audit analysis of HKPC records

4.7   Audit considers that HKPC needs to step up efforts to enhance the performance of training programmes, in particular, the income from public training programmes.

Provision of training programmes

Number of training programmes launched deviated from the Annual Programme and Estimates

4.8   In the Annual Programme and Estimates, the activities of HKPC are categorised into the following four programme areas:

(a)   environmental technology;

(b)   information technology;

(c)   management systems; and

(d)   manufacturing technology.

4.9   Audit compared the actual number of training programmes against that set in the Annual Programme and Estimates approved by CIT and the Council (see Table 18) for the period from 2016-17 to 2018-19 and found that the number of training programmes organised under each programme area had deviated significantly from those set out in the approved Annual Programme and Estimates:

(a)   for the programme areas of environmental technology and manufacturing technology, the actual numbers of training programmes were consistently less than the estimated numbers; and

(b)   for the programme area of information technology throughout the period and the programme area of management systems for 2017-18 and 2018-19, the actual numbers of training programmes were much more than that estimated.

Table 18

**Actual numbers of training programmes
deviated from those estimated
(2016-17 to 2018-19)**

Programme area	2016-17	2017-18	2018-19
Environmental technology			
Estimated (a)	26	28	34
Actual (b)	11	13	16
Actual as a percentage of estimated number (c)=(b)÷(a)×100%	42%	46%	47%
Information technology			
Estimated (d)	12	28	37
Actual (e)	50	87	85
Actual as a percentage of estimated number (f)=(e)÷(d)×100%	417%	311%	230%
Management systems			
Estimated (g)	133	111	66
Actual (h)	103	137	77
Actual as a percentage of estimated number (i)=(h)÷(g)×100%	77%	123%	117%
Manufacturing technology			
Estimated (j)	55	33	63
Actual (k)	39	30	55
Actual as a percentage of estimated number (l)=(k)÷(j)×100%	71%	91%	87%

Source: Audit analysis of HKPC records

4.10   In response to Audit's enquiry, HKPC informed Audit in September 2019 that the number of training programmes under each programme area in the Annual Programme and Estimates was not an approved target but only an estimate to give an indication of the distribution of training activities amongst the programme areas, and

the actual delivery of the training programmes would depend on the prevailing market demand and competition.

4.11   According to MAA, in the Annual Programme and Estimates, HKPC shall categorise its activities into different programme areas. The Annual Programme and Estimates shall include the strategic objective of each programme area and how it fits into the Government priorities and HKPC mission. In Audit's view, the estimated number of training programmes for each programme area in the Annual Programme and Estimates reflects HKPC's overall strategy on training services. Audit considers that HKPC needs to organise training programmes according to the estimated number for each programme area set out in the Annual Programme and Estimates as far as practicable, and any deviations, if considered justifiable, are properly approved by CIT and the Council.

Audit recommendations

4.12   **Audit has *recommended* that ED, HKPC should:**

(a)   **step up efforts to enhance the performance of training programmes, in particular, the income from public training programmes; and**

(b)   **organise training programmes according to the estimated number for each programme area set out in the Annual Programme and Estimates as far as practicable, and any deviations, if considered justifiable, are properly approved by CIT and the Council.**

Response from HKPC

4.13   ED, HKPC agrees with the audit recommendations. He has said that:

(a)   HKPC has taken various measures to enhance the performance of training programmes recently. The income from training programmes has started to pick up, with the income of the first quarter of 2019-20 exceeding that of the same period of 2018-19 by 41%. The income for the second quarter of 2019-20 is projected to exceed the same period of last year by 60%;

(b)   in 2019-20, HKPC established a new strategic model with a new management team with the aim to improve the performance of training programmes. Staff responsible for training programmes have enhanced communications with business divisions to ensure that the training programmes provided by HKPC can meet the latest needs of the industry;

(c)   HKPC will continue to execute the enhancement measurements and regularly review the effectiveness of these measures; and

(d)   HKPC will review and monitor quarterly the actual activities of training operation according to the approved estimates in the Annual Programme and Estimates.

Programme development and enrolment

4.14   The procedures for organising public training programmes are set out in the Guidebook for Organising Public Training Programme (Guidebook). According to the Guidebook, for all new public training programmes:

(a)   a proposal containing justifications for organising the programme, estimated income and expenditure, estimated enrolment number and minimum enrolment number shall be prepared and submitted to the management for approval; and

(b)   the responsible division should conduct a market demand assessment and pricing research to justify the launch of the programme and the pricing decision.

Low enrolment of public training programmes

4.15   *Many public training programmes under-enrolled.* In 2018-19, HKPC organised 120 public training programmes. Audit examined the enrolment rates of 30 of the 120 public training programmes by dividing the actual enrolment by the estimated enrolment and found that:

(a)   for 10 (33%) programmes, the estimated enrolment was not included in the proposals; and

(b)   for the remaining 20 (67%) programmes where the estimated enrolment was included in the proposals, the actual enrolment of 12 (60%) of these 20 programmes were less than the estimated enrolment. The enrolment rates of these 12 programmes ranged from 15% to 92%, averaging 59%. In particular, the enrolment rates of 4 (20%) of these programmes were less than 50%, ranging from 15% to 40% (see Table 19).

Table 19

**Enrolment rates of 20 public training programmes
(2018-19)**

Enrolment rate	No. of programmes	
<50%	4 (20%)	⎫
50% to <70%	3 (15%)	⎬ 12 (60%)
70% to <100%	5 (25%)	⎭
100% and above	8 (40%)	
Total	20 (100%)	

Source: Audit analysis of HKPC records

4.16   Audit considers that HKPC needs to ascertain the reasons for the low enrolments and step up efforts to improve the enrolment rates of its public training programmes. HKPC also needs to take measures to ensure that the estimated enrolment of each proposed public training programme is prepared and included in the proposal.

4.17   ***Public training programmes with very few participants.*** Audit analysed the number of participants of the 120 public training programmes organised in 2018-19 and found that 38 (32%) programmes had fewer than ten participants (see Table 20).

Table 20

**Number of participants of public training programmes
(2018-19)**

No. of participants			No. of programmes	
3	to	<5	4	(3%) ⎫ 38 (32%)
5	to	<10	34	(29%) ⎭
10	and	above	82	(68%)
		Total	120	(100%)

Source: Audit analysis of HKPC records

4.18   Audit examined the proposals of the 38 public training programmes with fewer than ten participants and found that:

(a)   in 15 (39%) proposals, the estimated numbers of enrolment were not included in the proposals; and

(b)   in 8 of the remaining 23 proposals, the estimated numbers of enrolment were set below ten. However, in all of these eight proposals, there was no documentary evidence showing the justifications for organising such programmes despite the fact that only a few people were expected to attend the programmes.

4.19   In response to Audit's enquiry, HKPC informed Audit in September 2019 that in considering whether to organise a programme:

(a)   HKPC would consider whether the programme could achieve cost-recovery or fulfil other missions of HKPC. Therefore, in order to provide services to the industry, HKPC would still organise a programme with a low estimated number, as long as it could achieve cost-recovery; and

(b)   for programmes that could not achieve cost-recovery, the management would only approve to organise such programmes for special reasons (e.g. to strategically introduce new technologies for awareness raising).

Provision of training programmes

4.20   In Audit's view, it may not be conducive to the efficiency and effectiveness of the training programmes if there are only a small number of participants. Audit considers that HKPC needs to consider their worthiness before public training programmes with very few expected participants are organised. HKPC also needs to ensure that full justifications are provided in the proposals for programmes with small number of expected participants.

Market demand assessment not conducted for some programmes

4.21   According to the Guidebook:

(a)   new public training programmes developed shall be in line with the mission of HKPC and meet the market or industry needs; and

(b)   the responsible division should conduct a market demand assessment to justify the launch of the programme.

4.22   Audit examined the proposals of 30 new public training programmes organised in 2018-19 and found that:

(a)   for 11 (37%) proposals, market demand assessment was not conducted; and

(b)   for 2 (7%) proposals, the programme organisers stated in the proposals that market demand assessments had been conducted. However, details and results of the market demand assessments could not be found in the proposals and there was no documentary evidence showing that market demand assessments had been conducted.

In response to Audit's enquiry, HKPC informed Audit in September 2019 that for programmes organised by subject divisions, market assessments were not necessary as the subject divisions were well aware of the market demands, had close relationship with the relevant trade associations and had first-hand information on their demands.

4.23 Audit considers that HKPC needs to ensure that the Guidebook accurately stipulates the types of new public training programmes for which market demand assessment should be conducted. HKPC also needs to take measures to ensure that market demand assessments for new public training programmes are conducted according to the Guidebook, and the details and results of the assessments are included in the proposals.

Need to improve market demand assessments

4.24 Audit noted that of the 241 public training programmes launched in 2018-19, 121 (50%) were cancelled due to insufficient enrolment. Of these cancelled programmes, 76 (63%) had zero enrolment. Audit reviewed the market demand assessments of five cancelled programmes and found that there was room for improvement in conducting the market demand assessments:

(a)   the number of target participants of the programmes in the market (e.g. the number of pertinent personnel in the industry sector covered by the training topics) was not assessed; and

(b)   availability of similar programmes provided by other training service providers in the market and the competitiveness of the proposed programmes against them was not assessed.

Case 2 shows an example:

Case 2

**The cancellation of a training programme due to zero enrolment
(October 2018 to March 2019)**

1.   In October 2018, a programme entitled "English Writing Skills for Financial Executive" was approved. The programme comprised three one-day workshops.

2.   According to the proposal, the programme fee was $1,700 per participant per workshop. The project team estimated that the programme would have a total of 45 participants and the cost recovery rate would be 107%.

3.   The first workshop was published on HKPC's website for enrolment starting from 5 October 2018. However, no enrolment was received and the whole programme was eventually cancelled on 15 March 2019. In the paper submitted for seeking approval for the programme cancellation, the project team explained that the low enrolment was mainly due to fierce market competition.

4.   Audit examined the market demand assessment contained in the proposal and noted that:

  (a)   the assessment consisted of only two Internet articles covering the benefits of attending this training topic. The number of financial executives in the market and assessment on the market demand on English writing skills for financial executives were not available; and

  (b)   there was no documentary evidence showing that the project team had considered whether similar programmes were provided by other training service providers in the market, and assessed the competitiveness of the proposed training programme against them.

Audit comments

5.   In Audit's view, there was room for improvement in the market demand assessment conducted by the project team as it did not actually assess the market demand and competitiveness of the programme.

Source: Audit analysis of HKPC records

4.25   Audit considers that HKPC needs to take measures to improve the market demand assessments for new public training programmes.

Audit recommendations

4.26   **Audit has *recommended* that ED, HKPC should:**

(a)   **ascertain the reasons for the low enrolments of some public training programmes and step up efforts to improve the enrolment rates;**

(b)   **take measures to ensure that the estimated enrolment of each proposed public training programme is prepared and included in the proposal;**

(c)   **consider their worthiness before public training programmes with very few expected participants are organised;**

(d)   **ensure that full justifications are provided in the proposals for public training programmes with small number of expected participants;**

(e)   **ensure that the Guidebook accurately stipulates the types of new public training programmes requiring market demand assessment;**

(f)   **take measures to ensure that market demand assessments for new public training programmes are conducted according to the Guidebook, and the details and results of the assessments are included in the proposals; and**

(g)   **take measures to improve the market demand assessments for new public training programmes.**

Response from HKPC

4.27   ED, HKPC agrees with the audit recommendations. He has said that HKPC will:

(a)   continue to enhance promotion of the training programmes to improve the enrolment rates;

(b)   include the estimated enrolment number of each proposed public training programme in the proposal;

(c)   provide justifications for programmes with a large variance of the actual versus the estimated number of participants;

(d)   document the reasons for launching public training programmes with small number of expected participants;

(e)   monitor closely the conduct of proper market demand assessments for new public training programmes;

(f)   update the Guidebook to stipulate accurately the requirement for market demand assessment; and

(g)   improve the quality of market demand assessment including competitor analysis.

Evaluation of training programmes

4.28   According to the Guidebook, all public training programmes organised would be subject to the following three-level evaluation mechanism:

(a)   *Class observation.* The Officer-in-charge (OIC) of the programme carries out a class observation and completes a "Class Observation Form", which records the teaching quality of the trainer.   The OIC will share his observations and expectations with the trainer for improvements;

(b)   ***Programme-end evaluation.*** The programme administrator distributes and collects feedbacks from the trainees using an end-of-programme evaluation form. The performance of the trainer and the logistic support provided by HKPC are evaluated by the trainees using a scale of 1 to 5. Results from the evaluation forms are input into the Public Training Administration (PTA) system for review by the OIC and management. If the rating score of any of the evaluation items is 3 or below, the OIC will investigate the cause of the low score and suggest follow-up actions for management's approval. The PTA system will compute an overall participants satisfaction index for all programmes, which is one of the KPIs for HKPC's training programmes (see para. 4.5(c)); and

(c)   ***Annual review.*** The OIC of each programme conducts an annual review to determine whether the programme should be continued in the coming year.

The Guidebook does not cover evaluation of corporate training programmes.

Evaluation data for some programmes not available in PTA system

4.29   ***Evaluation data of some public training programmes not available in the PTA system.*** In the period from 2015-16 to 2018-19, HKPC organised 559 public training programmes. Audit examined the records in the PTA system and noted that the programme-end evaluation data of 242 (43%) programmes were not available in the PTA system. It was not known whether programme-end evaluation had been conducted for these programmes.

4.30   ***Evaluation data of some corporate training programmes found in the PTA system.*** In the period from 2015-16 to 2018-19, HKPC also organised 340 corporate training programmes. While there were no internal guidelines on whether the evaluation data of corporate training programmes should also be kept in the PTA system, Audit found that the evaluation data of 65 (19%) corporate training programmes were also kept in the PTA system and used for the computation of the overall participants satisfaction index (i.e. one of the KPIs for training programmes). The evaluation data of the remaining 275 corporate training programmes were not kept in the PTA system. In other words, the overall participants satisfaction index was computed based on the programme-end evaluation data of some (57%) public training programmes and a small percentage (19%) of corporate training programmes.

Provision of training programmes

4.31   Audit considers that HKPC needs to take measures to ensure that programme-end evaluation data for public training programmes are collected and properly input into the PTA system according to the requirements stipulated in the Guidebook. HKPC also needs to issue guidelines to clarify whether evaluation data of corporate training programmes should also be kept in the PTA system for the computation of the overall participants satisfaction index.

Need to improve the response rate of programme evaluation forms

4.32   Audit examined the number of end-of-programme evaluation forms for both public and corporate training programmes distributed and received in the period from 2015-16 to 2018-19, and noted that the annual response rate of the evaluation forms decreased from 51％ in 2015-16 to 43％ in 2018-19 (see Table 21).

Table 21

**Response rates of programme evaluation forms
(2015-16 to 2018-19)**

	2015-16	2016-17	2017-18	2018-19
No. of evaluation forms distributed (a)	3,938	4,335	3,313	2,296
No. of evaluation forms received (b)	2,017	2,154	1,918	996
Response rate (c)＝(b)÷(a)×100％	51％	50％	58％	43％

Source: Audit analysis of HKPC records

Remarks: The number of evaluation forms distributed does not add up to the number of participants because more than one evaluation form would be distributed for programmes with more than one trainer.

4.33   In Audit's view, the results of programme-end evaluation are useful in understanding the areas of possible improvement for the purpose of monitoring programme quality. Audit considers that HKPC needs to take measures to improve the response rate of end-of-programme evaluation forms.

Annual review not conducted for some programmes

4.34   According to the Guidebook, the OIC of each public training programme should conduct an annual review to determine the continuation of the programme (see para. 4.28(c)).   The review covers the following aspects and the results are subject to management's approval:

(a)   alignment with HKPC's strategic plan;

(b)   uniqueness of technology or knowledge covered by the programme in the current market; and

(c)   public reception for the past 18 consecutive months, particularly the performance of the last three intakes, by comparing actual enrolment to minimum enrolment.

4.35   Audit found that in the period from 2015-16 to 2018-19, annual reviews had not been conducted for some public training programmes, ranging from 9% to 33% of the programmes organised (see Table 22).

Table 22

Public training programmes not covered by annual reviews
(2015-16 to 2018-19)

	2015-16	2016-17	2017-18	2018-19
No. of programmes organised	113	170	156	120
No. of programmes not covered by annual reviews	10 (9%)	29 (17%)	17 (11%)	39 (33%)

Source: Audit analysis of HKPC records

4.36   In Audit's view, the annual review can help ensure that public training programmes organised align with HKPC's strategic plan and there is a market demand for the programmes.   Omission in conducting the annual review may lead to continuation of programmes that are no longer in demand, and eventually very low enrolment of the programmes.   Audit considers that HKPC needs to take measures to ensure that annual reviews of public training programmes are conducted according to the Guidebook.

Audit recommendations

4.37   **Audit has *recommended* that ED, HKPC should:**

(a)   **take measures to ensure that programme-end evaluation data for public training programmes are collected and properly input into the PTA system;**

(b)   **issue guidelines to clarify whether evaluation data of corporate training programmes should also be kept in the PTA system for the computation of the overall participants satisfaction index;**

(c)   **take measures to improve the response rate of end-of-programme evaluation forms; and**

(d)   **take measures to ensure that annual reviews of public training programmes are conducted according to the Guidebook.**

Response from HKPC

4.38   ED, HKPC agrees with the audit recommendations.   He has said that:

(a)   starting from 2019-20 (which started in April 2019), all divisions have started to implement the arrangements of inputting the evaluation data of all public training programmes into the PTA system;

(b)   HKPC has reminded divisions to record the evaluation data of all public training programmes in the PTA system;

(c)   HKPC will provide guidelines to state clearly that only the public training programme evaluation data are required to be kept in the PTA system for computation of the overall participants satisfaction index;

(d)   HKPC will monitor the response rate of end-of-programme evaluation forms and follow-up closely on non-responding participants;

(e)   the original purpose of the annual review on a programme-by-programme basis is to review if certain training programmes should be continued or exited. However, as the market changes more and more rapidly, HKPC has improved the process by reviewing whether a particular programme should be continued or not on a weekly basis by the management. Accordingly, the annual review exercise on a programme-by-programme basis has become redundant. Instead, HKPC will conduct an annual review on the strategic areas of training in association with all subject divisions in the coming year; and

(f)   HKPC will revise the Guidebook to reflect the latest training programme review arrangements.

Management of training venues

4.39   All the training venues of HKPC (see Table 23) are in the HKPC Building located in Kowloon Tong. Apart from training programmes organised by HKPC, the venues are also available for use by outside organisations including companies, B/Ds and other non-governmental organisations in Hong Kong. Every year, HKPC reviews the venue rates by benchmarking the rates charged by HKPC against those by similar organisations in the market (e.g. the Hong Kong Science and Technology Parks Corporation).

Table 23

Training venues of HKPC
(31 August 2019)

Venue	No.	Area (Square feet)	Capacity (No. of seats)
Conference hall (see Photograph 7)	1	5,048	300
Theatres (see Photograph 8)	2	3,537	65 and 100
Standard classrooms	13	10,914	19 to 70
Computer classrooms	2	1,437	30

Source: Audit analysis of HKPC records

Photograph 7

The conference hall of HKPC

Source: HKPC records

Photograph 8

A theatre of HKPC

Source: HKPC records

Need to improve utilisation of training venues

4.40   The utilisation of the training venues is recorded in the PTA system. The PTA system calculates the utilisation rate of a training venue by dividing the actual usage hours (including hours used by outside organisations) of the venue by the total number of opening hours of the venue during the period. Venue utilisation reports can be generated from the PTA system to show the utilisation rate of each training venue.

4.41   Audit examined the venue utilisation reports of 2017-18 and 2018-19 and found that the overall utilisation rates of HKPC training venues were low (i.e. 17% and 16% respectively). In particular, it was not satisfactory that the utilisation rate of each and every training venue was less than 50% during both office hours and non-office hours (see Table 24). Audit considers that HKPC needs to step up efforts to promote the hiring of training venues by outside organisations, and take effective measures (e.g. improving public awareness of the availability of its training venues, converting the training venues which are surplus to requirement into other gainful uses, etc.) to improve the utilisation of the training venues.

Table 24

**Utilisation rates of training venues
(2017-18 and 2018-19)**

Venue	2017-18		2018-19	
	Office hours	Non-office hours	Office hours	Non-office hours
Conference hall	40%	29%	35%	30%
Theatre 1	16%	9%	17%	15%
Theatre 2	16%	39%	12%	33%
Standard classrooms	17%	14%	16%	12%
Computer classrooms	15%	8%	17%	5%
Overall	17%		16%	

Source:　*Audit analysis of HKPC records*

Remarks:　*Office hours refer to 9:00 a.m. to 6:00 p.m. from Monday to Friday. Non-office hours refer to 6:00 p.m. to 10:00 p.m. from Monday to Friday, and from 9:00 a.m. to 5:00 p.m. on Saturday. All training venues are closed on Sunday and public holidays.*

Need to provide online venue booking

4.42　　To use the training venues of HKPC, hirers are required to follow booking procedures, as follows:

(a)　　the hirer is required to call HKPC during office hours to check the availability of the venue (see para. 4.43);

(b)　　if the venue is available, the hirer is requested to complete and submit a booking form and relevant supporting documents (e.g. business registration certificate) to HKPC by fax or e-mail; and

(c) upon the receipt and checking of the booking form and supporting documents from the hirer, HKPC sends a confirmation reply e-mail to the hirer to confirm the booking.

4.43 In Audit's view, the existing venue booking system is not user-friendly as the potential hirers can only call to check the availability of the venues during office hours. To allow more efficient and user-friendly booking of HKPC training venues by hirers, there is a need to upload information about venue availability and provide online booking function for the hirers on HKPC's website.

Audit recommendations

4.44 **Audit has *recommended* that ED, HKPC should:**

(a) **step up efforts to promote the hiring of HKPC training venues by outside organisations;**

(b) **take effective measures (e.g. improving public awareness of the availability of HKPC training venues, converting the training venues which are surplus to requirement into other gainful uses, etc.) to improve the utilisation of the training venues; and**

(c) **upload information about venue availability and provide online booking function for the hirers on HKPC's website.**
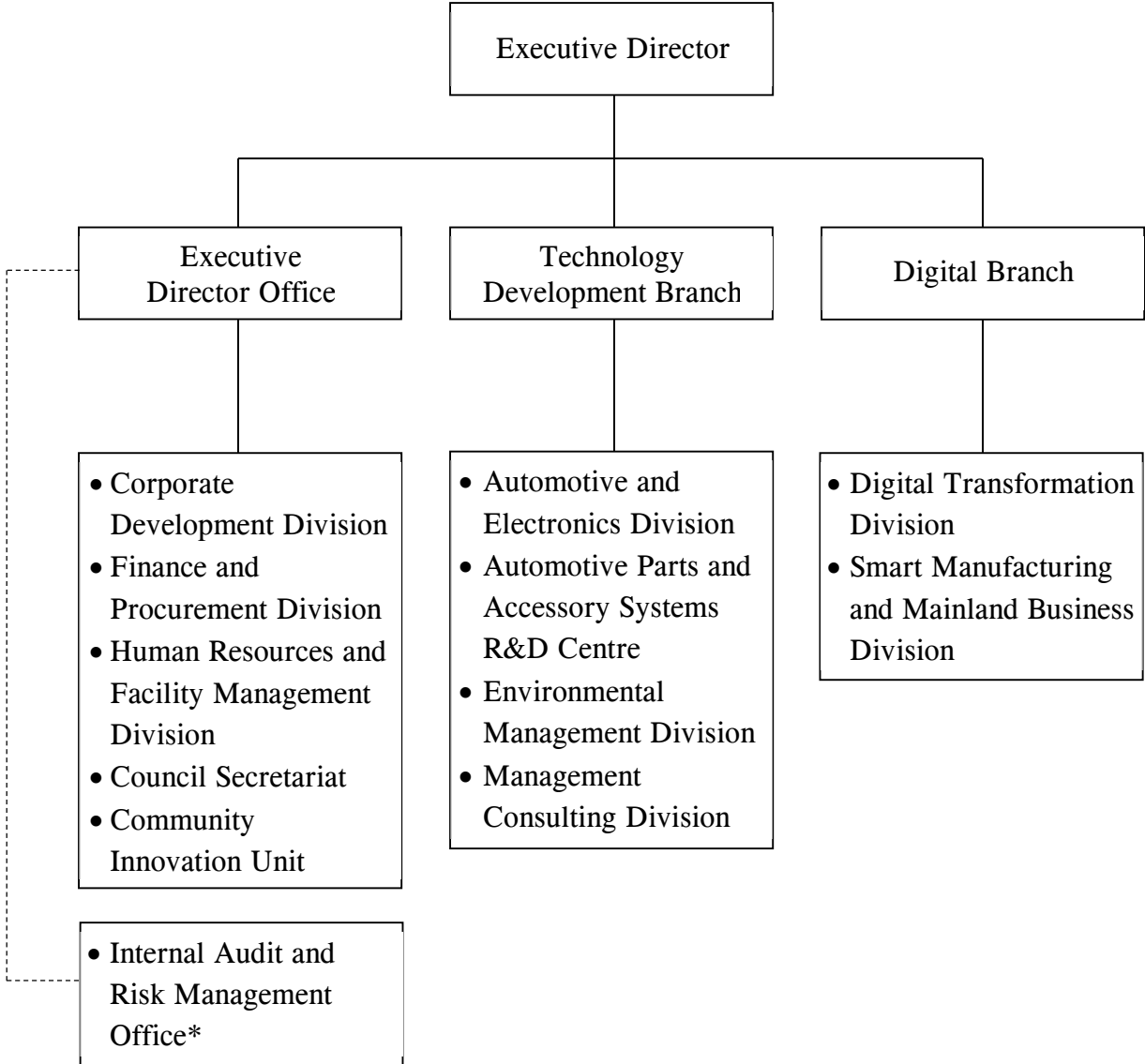
Response from HKPC

4.45 ED, HKPC agrees with the audit recommendations. He has said that:

(a) HKPC has taken various measures to improve the overall utilisation rate of HKPC training venues such as:

(i) modernising venue facilities (such as the renovated conference hall);

Provision of training programmes

  (ii) stepping up marketing effort to enhance the utilisation of venues; and

  (iii) reviewing and putting in place a competitive rate (such as giving a 30% discount on all venue fees for SMEs until the end of March 2020);

(b) HKPC will monitor closely the implementation of the enhancement measures and venue utilisation rates; and

(c) an online training venue booking system will be launched in October 2019.

HKPC: Organisation chart (extract)
(31 March 2019)

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                          ┌─────────────────────┐
                          │  Executive Director │
                          └─────────────────────┘
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Executive Director Office	Technology Development Branch	Digital Branch
• Corporate Development Division • Finance and Procurement Division • Human Resources and Facility Management Division • Council Secretariat • Community Innovation Unit	• Automotive and Electronics Division • Automotive Parts and Accessory Systems R&D Centre • Environmental Management Division • Management Consulting Division	• Digital Transformation Division • Smart Manufacturing and Mainland Business Division

• Internal Audit and Risk Management Office*

*Functionally reported to the Audit Committee of HKPC

Source: HKPC records

Acronyms and abbreviations

AED	Automotive and Electronics Division
APAS	Automotive Parts and Accessory Systems Research and Development Centre
ARO	Internal Audit and Risk Management Office
Audit	Audit Commission
B/Ds	Government bureaux/departments
CE	Chief Executive
CIT	Commissioner for Innovation and Technology
CRDF	Commercial Research and Development Fund
ED	Executive Director
Guidebook	Guidebook for Organising Public Training Programme
HKPC	Hong Kong Productivity Council
IPSC	Intellectual Property Services Centre
ITC	Innovation and Technology Commission
ITF	Innovation and Technology Fund
KPI	Key performance indicator
MAA	Memorandum of Administrative Arrangements
OIC	Officer-in-charge
OMW	Optics Manufacturing Workshop
PTA	Public Training Administration
R&D	Research and development
SME	Small and medium enterprise