

2016 年
香港創新活動統計
Hong Kong
Innovation Activities Statistics 2016



香港特別行政區 政府統計處
Census and Statistics Department
Hong Kong Special Administrative Region



2016 年 香港創新活動統計 Hong Kong Innovation Activities Statistics 2016

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www.censtatd.gov.hk

2017 年 12 月出版
Published in December 2017

本刊物只備有下載版
This publication is available in download version only

目錄

Contents

		頁數 Page
緒言	Introduction	iii
大綱	Synopsis	vi
統計圖表目錄	List of Statistical Tables and Charts	ix
1. 研究及發展活動	Research and Development Activities	
研究及發展（研發）活動的整體情況	Overall research and development (R&D) activities	1
工商機構的研發活動	R&D activities in the business sector	4
高等教育機構的研發活動	R&D activities in the higher education sector	15
政府機構的研發活動	R&D activities in the government sector	16
2. 工商機構的技術創新活動	Technological Innovation Activities in the Business Sector	
工商機構進行技術創新活動的普及情況（包括產品及程序創新）	Diffusion of technological innovation (TI) activities in the business sector (including product and process innovation)	17
產品創新	Product innovation	18
程序創新	Process innovation	18
技術創新活動的開支	Expenditure on TI activities	19
技術創新活動的資金來源	Source of funds for TI activities	20
技術創新活動的特色	Characteristics of TI activities	21
3. 工商機構的非技術創新活動	Non-technological Innovation Activities in the Business Sector	
工商機構進行非技術創新活動的普及情況（包括組織及市場推廣創新）	Diffusion of non-technological innovation (non-TI) activities in the business sector (including organisational and marketing innovation)	24
工商機構進行創新活動的整體情況	Overall innovation activities in the business sector	26
4. 政府對研究及發展活動與創新活動的支援	Government's Support for Research and Development Activities and Innovation Activities	
基礎研究	Basic research	28
應用研發及創新活動	Applied R&D and innovation activities	29

		頁數 Page
統計表	Statistical Tables	34
附錄	Appendices	
甲. 用語及定義	A. Terms and Definitions	76
乙. 資料來源	B. Data Sources	87
獲取政府統計處刊物的方法	Means of Obtaining Publications of the Census and Statistics Department	91

緒言

Introduction

1. 創新是推動經濟增長及發展的主要動力。創新活動不單包括研究及發展（研發）活動，亦涉及產品和程序創新的活動，以及機構組織與市場推廣的創新活動。這些活動有助機構提升其競爭力及業務表現。政府統計處為評估本港創新活動的發展情況而編製各類統計指標。在各類關於創新活動的統計指標當中，有關研發的統計數字是其中一項至為重要的指標。在本刊物中，研發統計數字涵蓋三個機構類別，即工商機構、高等教育機構及政府機構。技術創新及非技術創新活動的統計數字則主要涉及工商機構。

2. 工商機構的研發和各類創新活動統計數字是透過「創新活動統計調查」（政府統計處自 2001 年統計年度起就有關課題進行專項統計調查）搜集得來的資料編製而成。高等教育機構的研發統計數字則根據大學教育資助委員會的行政記錄整理而成，而政府機構的研發統計數字則根據從各政府決策局、部門和半政府機構（包括公共科技支援機構）搜集而來的資料編製而成。

3. 本刊物的第 1 章描述 2016 年本港研發活動的整體情況，並分別就工商機構、高等教育機構和政府機構的研發活動進行詳細分析。在工商機構方面，刊載了研發活動開支、研發人員及研發活動的特色（例如：與其他機構進行研發活動的協作安排以及研發活動的資金來源）的詳細統計數字。第 2 及第 3 章分別集中描述 2016 年工商機構的技術創新活動與非技術創新活動的情況。第 4 章描述香港特別行政區政府對本港研發及創新活動的支援，當中有關應用研發及創新活動的資料由創新科技署提供。有關的統計方法、概念及定義和資料來源的詳情載於附錄甲及乙。

1. Innovation is a key impetus to economic growth and development. Innovation activities include not only research and development (R&D) but also product and process innovation as well as organisational and marketing innovation which help enhance competitiveness and business performance. The Census and Statistics Department (C&SD) has been compiling various statistical indicators for gauging the development of innovation activities in Hong Kong. Of the various categories of statistical indicators relating to innovation, statistics on R&D are among the most important ones. In this publication, R&D statistics cover three institutional sectors, viz. business, higher education and government sectors, while statistics on technological innovation (TI) and non-technological innovation (non-TI) activities mainly relate to the business sector.

2. R&D and various innovation activities statistics for the business sector are compiled from data collected through the Survey of Innovation Activities (SIA), which is a dedicated survey on this subject conducted by the C&SD since the reference year of 2001. R&D statistics for the higher education sector are based on administrative data provided by the University Grants Committee, while those for the government sector are based on data collected from various government bureaux, departments and quasi-government organisations (including public technology support organisations).

3. Chapter 1 of this publication provides an overall picture of R&D activities in Hong Kong in 2016, with elaborated analyses for R&D activities in the business, higher education and government sectors. For the business sector, detailed statistics of R&D expenditure, R&D personnel and R&D characteristics such as collaboration arrangements on R&D activities and sources of funds for R&D activities are published. Chapters 2 and 3 focus on TI and non-TI activities in the business sector respectively in 2016. Chapter 4 portrays the support provided by the Government of the Hong Kong Special Administrative Region (HKSAR) in promoting R&D and innovation activities in Hong Kong. The information presented in this Chapter on applied R&D and innovation activities is furnished by the Innovation and Technology Commission. Details of the methodology, concepts and definitions as well as data sources are given in Appendices A and B.

4. 政府統計處自2008年統計年度起編製這本刊物，所發布的研發和創新活動統計數字與過往透過《工商業創新活動按年統計調查報告》內所載數字的涵蓋範圍相若，並加入了高等教育機構和政府機構的研發統計數字，以更全面展示本港研發及創新活動的情況。而《工商業創新活動按年統計調查報告》自2008年統計年度起已停止出版。

5. 「創新活動統計調查」採用「香港標準行業分類」進行樣本抽選、數據搜集及發布統計調查結果。這個行業分類是以聯合國的「國際標準產業分類」為藍本，配合本地情況作出編訂，從而反映本港經濟結構。

6. 「創新活動統計調查」已於2009年統計年度起開始採用「香港標準行業分類2.0版」。為維持「香港標準行業分類2.0版」實施前及實施後數據的連貫性和可比性，政府統計處已按「香港標準行業分類2.0版」重新編製回溯至2005年的工商機構的研發及技術創新活動的主要統計數字。本報告內的行業分類及所有數字均以「香港標準行業分類2.0版」為依據。

7. 就機構規模進行工商機構的研發及創新活動的分析時，機構按其就業人數分為小型、中型及大型三個類別，詳情如下：

行業組別 Industry grouping	機構規模 Size of establishment	就業人數 No. of persons engaged		
		小型 Small	中型 Medium	大型 Large
製造業 Manufacturing		< 10	10 - 99	≥ 100
非製造業 Non-manufacturing		< 10	10 - 49	≥ 50

8. 由於四捨五入關係，個別數字或百分比之和可能不等於其總數。

4. This publication, introduced since the reference year of 2008, has the same coverage of R&D and innovation activities statistics as those previously published through the *Report on Annual Survey of Innovation Activities in the Business Sector* (which had been discontinued as from the reference year of 2008), plus R&D statistics for the higher education and government sectors. It provides a more complete picture of the R&D and innovation activities in Hong Kong.

5. The Hong Kong Standard Industrial Classification (HSIC) has been adopted in the SIA for sample selection, data collection and dissemination of survey results. The HSIC is devised by using the United Nations' International Standard Industrial Classification as the framework, with local adaptation, to reflect the structure of the Hong Kong economy.

6. HSIC Version 2.0 has been adopted in the SIA starting from the reference year of 2009. To maintain data continuity and comparability before and after implementation of HSIC Version 2.0, the C&SD has re-compiled key statistics on R&D and TI activities in the business sector dating back to 2005 in accordance with HSIC Version 2.0. The industrial classification and all figures given in this publication are based on HSIC Version 2.0.

7. For the analysis of R&D and innovation activities in the business sector by size of establishments presented in this publication, establishments are categorised into small, medium and large according to the number of persons engaged as follows:

8. Figures or percentages of components may not add up to the respective totals owing to rounding.

9. 本刊物所載列的研發開支相對本地生產總值的比率是根據2017年11月發布的本地生產總值數字計算。

10. 本刊內各代號的含意如下：

N.A. 不適用

§ 金額數值少於5萬港元或百分比少於0.05%

@ 數字在日後會作出修訂

* 修訂數字

*** 由於要為個別機構的資料保密，故此在有需要的情況下，有關個別項目的數字不在統計表內顯示。而為免從總數減去餘數後能得出該未顯示數字的數值，另一數字亦同時不會顯示。未有顯示的數字會以‘***’表示，但其數值則已包括在較闊分類層面的總數內。

9. In this publication, the ratio of R&D expenditure to Gross Domestic Product (GDP) is calculated based on the latest GDP series released in November 2017.

10. The following symbols are used throughout this publication :

N.A. Not applicable

§ Dollar values less than HK\$50,000 or percentages less than 0.05%

@ Figures are subject to revision later on

* Revised figures

*** In order to preserve the confidentiality of information relating to individual establishments, figures of relevant individual items are suppressed where necessary. An additional cell is also suppressed to prevent the deduction of a suppressed cell from the total. Where data suppression has been effected, ‘***’ is shown. The suppressed statistics are, nevertheless, included in the respective totals at some broader levels of classification.

大綱

Synopsis

1. 一個經濟體的創新和科技能力是提升其競爭力的必需元素，而研究及發展（研發）是推動技術進步的一種主要動力。根據經濟合作與發展組織所倡議的國際性定義，研發活動是指具創造性及有系統性的工作。這些工作的目的是為增進知識以發明新產品、設計新程序或開拓現有產品或程序的新用途，以及改進現有的產品、程序或其相關的用途。研發活動通常都帶有相當程度的新穎或創新元素，並可於自然科學、工程及科技、醫療及衛生科學、社會科學和人文科學及藝術等範疇進行。

2. 在 2016 年，本地研發總開支〔即工商機構、高等教育機構及政府機構（包括公共科技支援機構）在本地所進行的內部研發活動的開支總額〕達 197.13 億港元，較 2015 年上升 8%。而本地生產總值⁽¹⁾在同期錄得 4% 的增長，因此本地研發總開支相對本地生產總值的比率由 2015 年的 0.76% 升至 2016 年的 0.79%。（表 1.1）

3. 工商機構的內部研發開支（包括研發活動所涉及的勞工成本、其他的經常開支和資本開支）由 2015 年的 79.94 億港元上升至 2016 年的 85.28 億港元，增幅為 7%。（表 1.2）

1. Capabilities in innovation and technology are essential elements to enhance an economy's competitiveness while research and development (R&D) is a key impetus for technological advancement. In following the international definition promulgated by the Organisation for Economic Cooperation and Development (OECD), R&D activities refer to creative and systematic work undertaken so as to increase the stock of knowledge for devising new and improved products/processes/applications and improve existing products/processes/applications. R&D activities usually carry an appreciable element of novelty or innovation that can be conducted in such fields as natural sciences, engineering and technology, medical and health sciences, social sciences, and humanities and the arts.

2. In 2016, the gross domestic expenditure on R&D (GERD) of Hong Kong [i.e. total expenditure on in-house R&D activities performed locally in the business sector, higher education sector and government sector (including public technology support organisations)] amounted to HK\$19,713 million, representing an increase of 8% when compared with 2015. The Gross Domestic Product (GDP)⁽¹⁾ grew at 4% during the same period. Thus, the GERD as a ratio to the GDP increased from 0.76% in 2015 to 0.79% in 2016. (Table 1.1)

3. Expenditure on in-house R&D (including all the labour cost, other current expenditure and capital expenditure on R&D activities) in the business sector increased by 7% from HK\$7,994 million in 2015 to HK\$8,528 million in 2016. (Table 1.2)

(1) 以開支面編製並以當時市價計算的 2015 及 2016 年本地生產總值分別為 23,984 億港元及 24,910 億港元。數字是 2017 年 11 月發表的最新數據，並在日後會作出修訂。

(1) The expenditure-based GDP estimates at current market prices for 2015 and 2016 are HK\$2,398.4 billion and HK\$2,491.0 billion respectively. The figures are the latest data released in November 2017 and are subject to revision later on.

4. 近年來，高等教育機構的內部研發開支一直有上升的趨勢。在 2016 年，高等教育機構的內部研發開支達 102.71 億港元，較 2015 年上升 8%。在 2016 年，政府機構（主要是公共科技支援機構）的內部研發開支達 9.14 億港元，較 2015 年上升 26%。（表 1.1）

5. 另一項反映投放在研發活動內資源規模的指標是「研發人員」。這指標量度本港機構進行研發活動的人力資源。「研發人員」是指直接從事研發活動的人員，包括研究員、技術員及其他輔助人員。為了反映投放予研發活動的實際人力資源，研發人員的數字是以「相當於全日制的人數」計算，並根據有關統計年度內已投放在研發活動的工作年總數作估算。

6. 在 2016 年，研發人員總數（以相當於全日制的人數計算）為 29 047 人，而 2015 年的相應人數為 28 165 人。大部分的研發人員就業於高等教育機構和工商機構，他們分別佔 2016 年研發人員總數的 55% 和 42%。（表 1.1 及 1.4）

7. 創新並非局限於技術的開發和使用。工商機構亦可以透過實施嶄新或經顯著改良的程序和變動組織架構、機構管理以及市場推廣策略，以提升其競爭力及業務表現。

8. 根據經濟合作與發展組織發表的國際指引，創新活動可分為技術創新活動及非技術創新活動。前者包括研發和產品或程序創新的活動。後者則包括工商機構的組織架構及市場推廣策略的重要轉變。

9. 在 2016 年，約 3% 的工商機構曾進行技術創新活動。工商業技術創新活動的開支總額為 199.60 億港元，較 2015 年上升 14%。（表 2.1）

4. Expenditure on in-house R&D in the higher education sector has been on a rising trend in recent years. In 2016, expenditure on in-house R&D in the higher education sector reached HK\$10,271 million, up by 8% when compared with 2015. Expenditure on in-house R&D in the government sector (mainly public technology support organisations) amounted to HK\$914 million in 2016, up by 26% when compared with 2015. (Table 1.1)

5. Another input indicator of R&D activities is R&D personnel which measures the manpower resources deployed to R&D activities performed by undertakings in Hong Kong. “R&D personnel” refers to persons directly engaged in R&D activities, covering researchers, technicians and other supporting staff. In order to depict the actual amount of manpower resources deployed to R&D activities, figures on R&D personnel are expressed in full-time equivalent (FTE), which is estimated on the basis of the total number of person-years devoted to R&D activities during the reference year.

6. In 2016, there were a total of 29 047 R&D personnel (in FTE), compared with 28 165 (in FTE) in 2015. Most of them were engaged in the higher education and business sectors, which accounted for 55% and 42% respectively of the total number of R&D personnel in 2016. (Tables 1.1 and 1.4)

7. Innovation is not just confined to the development and use of technology. Business establishments can also enhance competitiveness and business performance through implementation of new or significantly improved processes and changes to organisations, workplace management and marketing strategy.

8. Following the international guidelines promulgated by OECD, innovation activities are further classified into technological innovation (TI) and non-technological innovation (non-TI) activities. The former comprises R&D and product or process innovation whereas the latter includes important changes in organisational structures and marketing strategies of business establishments.

9. In 2016, about 3% of the business establishments had undertaken TI activities. Business expenditure on TI activities amounted to HK\$19,960 million, representing an increase of 14% when compared with 2015. (Table 2.1)

10. 在 2016 年，約 9% 的工商機構曾進行組織創新或市場推廣創新的活動。
(表 3.1)

10. In 2016, around 9% of the business establishments had undertaken organisational or marketing innovation activities. (Table 3.1)

2013 年至 2016 年的研發開支及研發人員數目
R&D expenditure and number of R&D personnel, 2013 to 2016

研發開支 (百萬港元) Expenditure on R&D (HK\$ million)	2013	2014	2015	2016
本地研發總開支 Gross domestic expenditure on R&D =[a]+[b]+[c]	15,613 (+5%) [0.73%]	16,727 (+7%) [0.74%]	18,271 (+9%) [0.76%] [@]	19,713 (+8%) [0.79%] [@]
[a] 工商機構 Business sector	7,017 (+6%) [0.33%]	7,437 (+6%) [0.33%]	7,994 (+7%) [0.33%] [@]	8,528 (+7%) [0.34%] [@]
[b] 高等教育機構 Higher education sector	7,984 (+5%) [0.37%]	8,632 (+8%) [0.38%]	9,551 (+11%) [0.40%] [@]	10,271 (+8%) [0.41%] [@]
[c] 政府機構 Government sector	612 (+3%) [0.03%]	658 (+8%) [0.03%]	726 (+10%) [0.03%] [@]	914 (+26%) [0.04%] [@]
研發人員數目 (相當於全日制的人數計算) Number of R&D personnel (in full-time equivalent)				
整體研發人員數目 Overall R&D personnel =[d]+[e]+[f]	26 045 (+3%)	27 378 (+5%)	28 165 (+3%)	29 047 (+3%)
[d] 工商機構 Business sector	11 443 (+0.5%)	12 146 (+6%)	12 217 (+0.6%)	12 318 (+0.8%)
[e] 高等教育機構 Higher education sector	14 013 (+6%)	14 584 (+4%)	15 247 (+5%)	15 899 (+4%)
[f] 政府機構 Government sector	588 (-7%)	648 (+10%)	701 (+8%)	830 (+18%)

註釋：圓括號內數字為按年變動百分率。

Notes: Figures in round brackets refer to percentage changes over preceding year.

方括號內數字代表研發開支相對本地生產總值的比率。

Figures in square brackets represent the ratios to GDP.

統計圖表目錄

List of Statistical Tables and Charts

研究及發展活動		Research and Development Activities		頁數 Page
表 1.1	按進行機構類別劃分的本地研究及發展（研發）總開支及研發人員的統計數字	Table 1.1	Statistics on gross domestic expenditure on research and development (R&D) and R&D personnel by performing sector	34
表 1.2	按進行機構類別及研發開支類別（即經常和資本開支）劃分的本地研發總開支	Table 1.2	Gross domestic expenditure on R&D by performing sector by type of R&D expenditure (i.e. current and capital expenditure)	35
表 1.3	按資金來源劃分的本地研發總開支	Table 1.3	Gross domestic expenditure on R&D by source of funds	36
表 1.4	按進行機構類別及職能類別劃分的研發人員數目（相當於全日制的人數）	Table 1.4	Number of R&D personnel (in full-time equivalent) by performing sector by type of function	37
表 1.5	按選定行業組別／機構規模劃分的 2015 及 2016 年工商機構的研發活動主要統計數字	Table 1.5	Key statistics on R&D activities in the business sector in 2015 and 2016 by selected industry grouping/size of establishment	38
表 1.6	按研發開支類別（即經常和資本開支）及選定行業組別／機構規模劃分的 2016 年工商機構的內部研發活動總開支	Table 1.6	Total expenditure on in-house R&D activities in the business sector in 2016 by type of R&D expenditure (i.e. current and capital expenditure) by selected industry grouping/size of establishment	39
表 1.7	按研究類別及選定行業組別／機構規模劃分的 2016 年工商機構的內部研發活動總開支	Table 1.7	Total expenditure on in-house R&D activities in the business sector in 2016 by type of research by selected industry grouping/size of establishment	40
表 1.8	按研發活動範疇及選定行業組別／機構規模劃分的 2016 年工商機構的內部研發活動總開支	Table 1.8	Total expenditure on in-house R&D activities in the business sector in 2016 by field of R&D activity by selected industry grouping/size of establishment	41
表 1.9	按科技領域及選定行業組別／機構規模劃分的 2016 年工商機構的內部研發活動總開支	Table 1.9	Total expenditure on in-house R&D activities in the business sector in 2016 by technology area by selected industry grouping/size of establishment	42
表 1.10	按資金來源及機構規模劃分的 2016 年工商機構的內部研發活動總開支	Table 1.10	Total expenditure on in-house R&D activities in the business sector in 2016 by source of funds by size of establishment	44

			頁數 Page	
表 1.11	按職能類別及選定行業組別／機構規模劃分的 2016 年工商機構的研發人員數目（人數和相當於全日制的人數）	Table 1.11	R&D personnel (in headcount and full-time equivalent) in the business sector in 2016 by type of function by selected industry grouping/size of establishment	45
表 1.12	按教育程度及選定行業組別／機構規模劃分的 2016 年工商機構的研發人員數目（人數和相當於全日制的人數）	Table 1.12	R&D personnel (in headcount and full-time equivalent) in the business sector in 2016 by level of education by selected industry grouping/size of establishment	46
表 1.13	按外判機構類別及選定行業組別／機構規模劃分的 2016 年工商機構的外判研發活動總開支	Table 1.13	Total expenditure on contracted-out R&D activities in the business sector in 2016 by type of contracted-out party by selected industry grouping/size of establishment	47
表 1.14	按進行研發活動的機構類別劃分的 2016 年工商機構外判研發活動予其他機構的總開支	Table 1.14	Total expenditure on contracted-out R&D activities in the business sector in 2016 by type of performing party	48
表 1.15	按進行研發活動的機構所屬地區劃分的 2016 年工商機構外判研發活動予其他機構的總開支	Table 1.15	Total expenditure on contracted-out R&D activities in the business sector in 2016 by region in which the performing party is located	49
表 1.16	按資金來源劃分的 2016 年工商機構的外判研發活動總開支	Table 1.16	Total expenditure on contracted-out R&D activities in the business sector in 2016 by source of funds	50
表 1.17	按是否有研發活動和其他機構訂立協作安排或協作機構的類別劃分的在 2016 年有進行研發活動的工商機構分布	Table 1.17	Distribution of business establishments having undertaken R&D activities in 2016 by whether having collaboration arrangements on R&D activities with other organisations or type of collaborating organisation	51
表 1.18	按是否有研發活動和其他機構訂立協作安排或協作機構的所屬地區劃分的在 2016 年有進行研發活動的工商機構分布	Table 1.18	Distribution of business establishments having undertaken R&D activities in 2016 by whether having collaboration arrangements on R&D activities with other organisations or region in which the collaborating organisation is located	52
圖 1.1	2013 年至 2016 年本地研發總開支分布	Chart 1.1	Distribution of gross domestic expenditure on R&D, 2013 to 2016	2
圖 1.2	按進行機構類別劃分的 2016 年研發人員（相當於全日制的人數）分布	Chart 1.2	Distribution of R&D personnel (in FTE) by performing sector in 2016	3

			頁數 Page
圖 1.3	按職能類別劃分的 2016 年研發人員(相當於全日制的人數)分布	Chart 1.3	Distribution of R&D personnel (in FTE) by type of function in 2016 4
圖 1.4	按研發開支類別(即經常和資本開支)及選定行業組別/機構規模劃分的 2016 年工商機構的內部研發活動總開支	Chart 1.4	Total expenditure on in-house R&D activities in the business sector in 2016 by type of R&D expenditure (i.e. current and capital expenditure) by selected industry grouping/size of establishment 5
圖 1.5(i)	按研究類別劃分的 2016 年工商機構的內部研發活動總開支分布	Chart 1.5(i)	Distribution of total expenditure on in-house R&D activities in the business sector in 2016 by type of research 6
圖 1.5(ii)	按研究類別及選定行業組別/機構規模劃分的 2016 年工商機構的內部研發活動總開支	Chart 1.5(ii)	Total expenditure on in-house R&D activities in the business sector in 2016 by type of research by selected industry grouping/size of establishment 6
圖 1.6	按研發活動範疇及選定行業組別/機構規模劃分的 2016 年工商機構的內部研發活動總開支	Chart 1.6	Total expenditure on in-house R&D activities in the business sector in 2016 by field of R&D activity by selected industry grouping/size of establishment 7
圖 1.7	按科技領域及選定行業組別/機構規模劃分的 2016 年工商機構的內部研發活動總開支	Chart 1.7	Total expenditure on in-house R&D activities in the business sector in 2016 by technology area by selected industry grouping/size of establishment 8
圖 1.8	按資金來源劃分的 2016 年工商機構的內部研發活動總開支分布	Chart 1.8	Distribution of total expenditure on in-house R&D activities in the business sector in 2016 by source of funds 9
圖 1.9(i)	按職能類別劃分的 2016 年工商機構的研發人員數目(相當於全日制的人數)分布	Chart 1.9(i)	Distribution of R&D personnel (in FTE) in the business sector in 2016 by type of function 10
圖 1.9(ii)	按職能類別及選定行業組別/機構規模劃分的 2016 年工商機構的研發人員數目(相當於全日制的人數)	Chart 1.9(ii)	R&D personnel (in FTE) in the business sector in 2016 by type of function by selected industry grouping/size of establishment 10
圖 1.10	按教育程度劃分的 2016 年工商機構的研發人員數目(相當於全日制的人數)分布	Chart 1.10	Distribution of R&D personnel (in FTE) in the business sector in 2016 by level of education 11
圖 1.11	按進行機構的類別/所屬地區劃分的 2016 年工商機構的外判研發活動總開支	Chart 1.11	Total expenditure on contracted-out R&D activities in the business sector in 2016 by type of performing party/region in which the party performing R&D activity is located 12

			頁數 Page	
圖 1.12	按資金來源劃分的 2016 年工商機構的外判研發活動總開支分布	Chart 1.12	Distribution of total expenditure on contracted-out R&D activities in the business sector in 2016 by source of funds	13
圖 1.13	按協作機構的類別及所屬地區劃分的 2016 年有研發活動和其他機構訂立協作安排的工商機構數目	Chart 1.13	Number of business establishments with collaboration arrangements on R&D activities with other organisations in 2016 by type of collaborating organisation and region in which the collaborating organisation is located	14
圖 1.14	按職能類別劃分的 2016 年高等教育機構研發人員數目(相當於全日制的人數) 分布	Chart 1.14	Distribution of R&D personnel (in FTE) in the higher education sector in 2016 by type of function	15
圖 1.15	按職能類別劃分的 2016 年政府機構研發人員數目(相當於全日制的人數) 分布	Chart 1.15	Distribution of R&D personnel (in FTE) in the government sector in 2016 by type of function	16
工商機構的技術創新活動 (包括產品及程序創新)		Technological Innovation Activities in the Business Sector (including product and process innovation)		
表 2.1	按選定行業組別/機構規模劃分的 2015 及 2016 年工商機構的技術創新活動主要統計數字	Table 2.1	Key statistics on technological innovation (TI) activities in the business sector in 2015 and 2016 by selected industry grouping/size of establishment	53
表 2.2	按在 2016 年是否有進行產品創新/推出對市場來說是嶄新的創新產品及選定行業組別/機構規模劃分的工商機構分布	Table 2.2	Distribution of business establishments by whether having undertaken product innovation/product innovation new to the market in 2016 by selected industry grouping/size of establishment	54
表 2.3	按選定行業組別/機構規模劃分的在 2016 年有進行產品創新的工商機構在發展產品創新的機構類別、產品創新數目和產品創新的收入佔業務收入總額百分比方面的概況	Table 2.3	Profile of business establishments having undertaken product innovation in 2016 in terms of development party, number of product innovation and percentage contribution of product innovation to total business receipts by selected industry grouping/size of establishment	55
表 2.4	按在 2016 年是否有進程序創新及選定行業組別/機構規模劃分的工商機構分布	Table 2.4	Distribution of business establishments by whether having undertaken process innovation in 2016 by selected industry grouping/size of establishment	57

			頁數 Page	
表 2.5	按選定行業組別／機構規模劃分的在 2016 年有進程序創新的工商機構在發展程序創新的機構類別和程序創新數目方面的概況	Table 2.5	Profile of business establishments having undertaken process innovation in 2016 in terms of development party and number of process innovation by selected industry grouping/size of establishment	58
表 2.6	按在程序創新全面實施後節省的成本開支百分比及選定行業組別／機構規模劃分的在 2016 年有進程序創新的工商機構分布	Table 2.6	Distribution of business establishments having undertaken process innovation in 2016 by percentage of cost saving after full implementation of process innovation by selected industry grouping/size of establishment	59
表 2.7	按技術創新活動類別及選定行業組別／機構規模劃分的 2016 年工商機構的技術創新活動總開支	Table 2.7	Total expenditure on TI activities in the business sector in 2016 by type of TI activity by selected industry grouping/size of establishment	60
表 2.8	按資金來源劃分的 2016 年工商機構的技術創新活動總開支	Table 2.8	Total expenditure on TI activities in the business sector in 2016 by source of funds	61
表 2.9	按技術創新活動對企業的影響程度劃分的在 2016 年有進行技術創新活動的工商機構分布	Table 2.9	Distribution of business establishments having undertaken TI activities in 2016 by degree of impact of TI activities on businesses	62
表 2.10	按是否有就技術創新活動和其他機構訂立協作安排或協作機構的類別劃分的在 2016 年有進行技術創新活動的工商機構分布	Table 2.10	Distribution of business establishments having undertaken TI activities in 2016 by whether having collaboration arrangements on TI activities with other organisations or type of collaborating organisation	63
表 2.11	按是否有就技術創新活動和其他機構訂立協作安排或協作機構的所屬地區劃分的在 2016 年有進行技術創新活動的工商機構分布	Table 2.11	Distribution of business establishments having undertaken TI activities in 2016 by whether having collaboration arrangements on TI activities with other organisations or region in which the collaborating organisation is located	64
表 2.12	按在 2016 年沒有進行技術創新活動的原因及選定行業組別／機構規模劃分的工商機構分布	Table 2.12	Distribution of business establishments by reason for not having undertaken TI activities in 2016 by selected industry grouping/size of establishment	65
表 2.13	按阻礙技術創新活動的因素劃分的在 2016 年有進行技術創新活動的工商機構分布	Table 2.13	Distribution of business establishments having undertaken TI activities in 2016 by factor hampering TI activities	66

			頁數 Page	
表 2.14	按在 2016 年是否有進行中而尚未完成的技術創新活動及選定行業組別／機構規模劃分的工商機構分布	Table 2.14	Distribution of business establishments by whether having undertaken ongoing TI activities in 2016 by selected industry grouping/size of establishment	68
表 2.15	按在 2016 年是否有已終止的技術創新活動及選定行業組別／機構規模劃分的工商機構分布	Table 2.15	Distribution of business establishments by whether having undertaken abandoned TI activities in 2016 by selected industry grouping/size of establishment	69
圖 2.1	按選定行業組別劃分在 2016 年有進行技術創新活動的工商機構分布	Chart 2.1	Distribution of business establishments having undertaken TI activities in 2016 by selected industry grouping	17
圖 2.2	按技術創新活動類別劃分的 2016 年工商機構的技術創新活動總開支分布	Chart 2.2	Distribution of total expenditure on TI activities in the business sector in 2016 by type of TI activity	20
圖 2.3	按資金來源劃分的 2016 年工商機構的技術創新活動總開支分布	Chart 2.3	Distribution of total expenditure on TI activities in the business sector in 2016 by source of funds	20
圖 2.4	在 2016 年有進行技術創新活動的工商機構評估其技術創新活動對企業的影響	Chart 2.4	Impact of TI activities on businesses for business establishments having undertaken TI activities in 2016	21
圖 2.5	按協作機構的類別及所屬地區劃分的 2016 年有就技術創新活動和其他機構訂立協作安排的工商機構數目	Chart 2.5	Number of business establishments with collaboration arrangements on TI activities with other organisations in 2016 by type of collaborating organisation and region in which the collaborating organisation is located	22
工商機構的非技術創新活動（包括組織及市場推廣創新）		Non-technological Innovation Activities in the Business Sector (including organisational and marketing innovation)		
表 3.1	按在 2016 年是否有進行組織創新或市場推廣創新及選定行業組別／機構規模劃分的工商機構分布	Table 3.1	Distribution of business establishments by whether having undertaken organisational innovation or marketing innovation in 2016 by selected industry grouping/size of establishment	70
表 3.2	按在 2016 年所進行組織創新類別及選定行業組別／機構規模劃分的工商機構分布	Table 3.2	Distribution of business establishments by type of organisational innovation undertaken in 2016 by selected industry grouping/size of establishment	71

			頁數 Page
表 3.3	按在 2016 年進行組織創新的主要目的劃分的工商機構分布	Table 3.3	Distribution of business establishments by major objective of undertaking organisational innovation in 2016 72
表 3.4	按在 2016 年所進行市場推廣創新類別及選定行業組別／機構規模劃分的工商機構分布	Table 3.4	Distribution of business establishments by type of marketing innovation undertaken in 2016 by selected industry grouping/size of establishment 73
表 3.5	按在 2016 年進行市場推廣創新的主要目的劃分的工商機構分布	Table 3.5	Distribution of business establishments by major objective of undertaking marketing innovation in 2016 74
表 3.6	按在 2016 年是否有進行技術或非技術創新活動、選定行業組別／機構規模及創新活動類別劃分的工商機構分布	Table 3.6	Distribution of business establishments by whether having undertaken technological or non-technological innovation activities in 2016 by selected industry grouping/size of establishment by type of innovation activity 75
圖 3.1	按在 2016 年是否有進行組織創新或市場推廣創新活動及選定行業組別／機構規模劃分的工商機構分布	Chart 3.1	Distribution of business establishments by whether having undertaken organisational innovation or marketing innovation activities in 2016 by selected industry grouping/size of establishment 25
圖 3.2	按在 2016 年是否有進行技術或非技術創新活動、選定行業組別／機構規模及創新活動類別劃分的工商機構分布	Chart 3.2	Distribution of business establishments by whether having undertaken technological or non-technological innovation activities in 2016 by selected industry grouping/size of establishment by type of innovation activity 27

1 研究及發展活動

1 Research and Development Activities

研究及發展（研發）活動的整體情況

1.1 在 2016 年，本地研發總開支〔即工商機構、高等教育機構及政府機構（包括公共科技支援機構）在本地所進行的內部研發活動的開支總額〕達 197.13 億港元，較 2015 年上升 8%。而本地生產總值在同期錄得 4% 的增長，因此本地研發總開支相對本地生產總值的比率由 2015 年的 0.76% 升至 2016 年的 0.79%。（表 1.1）

1.2 工商機構的內部研發開支（包括研發活動所涉及的勞工成本、其他的經常開支和資本開支）由 2015 年的 79.94 億港元上升至 2016 年的 85.28 億港元，增幅為 7%。按研發開支類別分析，工商機構的內部研發總開支中絕大部分為經常開支，佔工商機構的內部研發總開支 85%，略低於 2015 年的相應比例（88%）。（表 1.2）

1.3 近年來，高等教育機構的內部研發開支一直有上升的趨勢。在 2016 年，高等教育機構的內部研發開支達 102.71 億港元，較 2015 年上升 8%。政府機構（主要是公共科技支援機構）在 2016 年的內部研發開支達 9.14 億港元，較 2015 年上升 26%。（表 1.1）

Overall research and development (R&D) activities

1.1 In 2016, the gross domestic expenditure on R&D (GERD) of Hong Kong [i.e. total expenditure on in-house R&D activities performed locally in the business sector, higher education sector and government sector (including public technology support organisations)] amounted to HK\$19,713 million, representing an increase of 8% when compared with 2015. The Gross Domestic Product (GDP) grew at 4% during the same period. Thus, the GERD as a ratio to the GDP increased from 0.76% in 2015 to 0.79% in 2016. (Table 1.1)

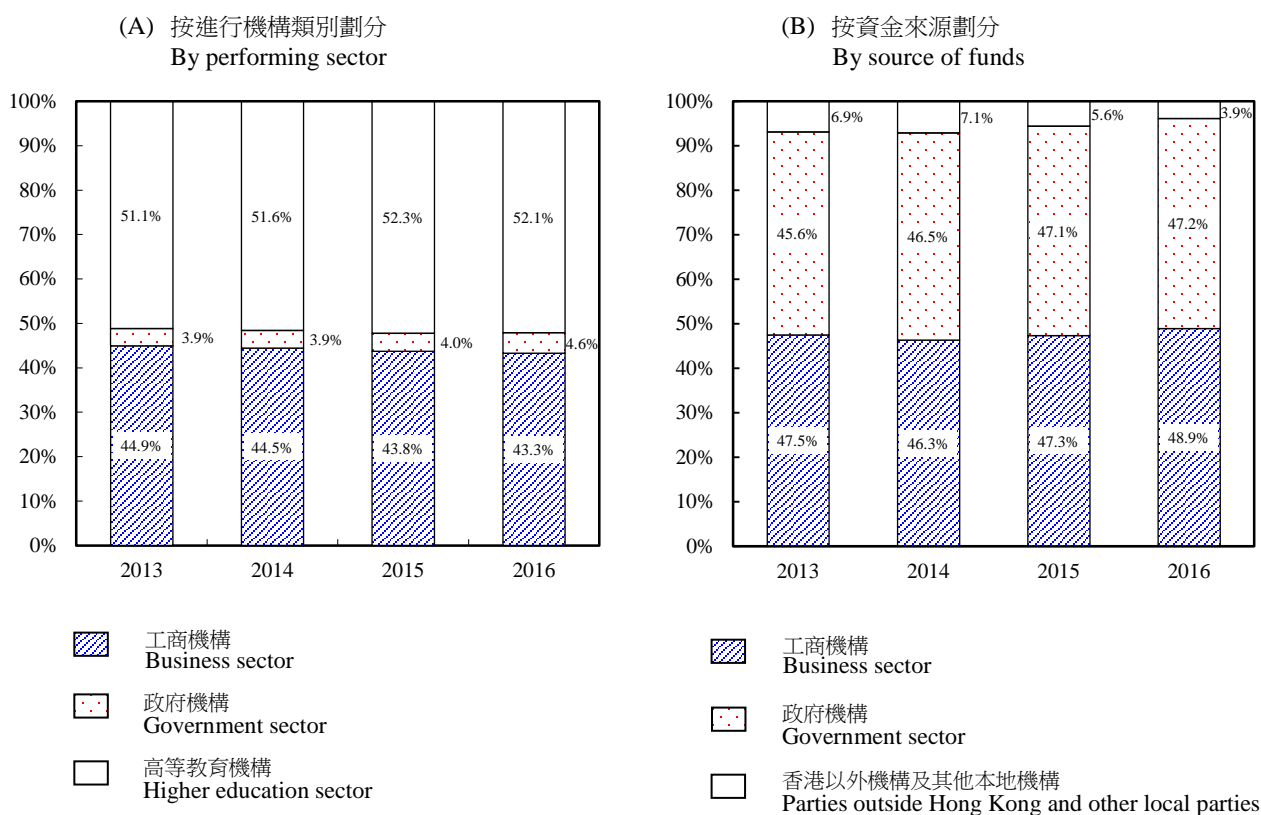
1.2 Expenditure on in-house R&D (including all the labour cost, other current expenditure and capital expenditure for R&D activities) performed in the business sector grew by 7% from HK\$7,994 million in 2015 to HK\$8,528 million in 2016. Analysed by type of expenditure, the current expenditure incurred in the business in-house R&D activities accounted for a predominant share of 85% of the total business expenditure on in-house R&D, slightly lower than the corresponding proportion in 2015 (88%). (Table 1.2)

1.3 Expenditure on in-house R&D in the higher education sector has been on a rising trend in recent years. In 2016, expenditure on in-house R&D in the higher education sector reached HK\$10,271 million, up by 8% when compared with 2015. Expenditure on in-house R&D performed in the government sector (mainly public technology support organisations) amounted to HK\$914 million in 2016, up by 26% when compared with 2015. (Table 1.1)

1.4 在本刊物中，研發活動的統計數字主要按進行研發的機構類別作出分析，而研發活動是指機構為本身及／或為其他機構進行的內部研發活動（在以下段落簡稱為「研發活動」，另有註明除外）。在 2016 年，工商機構、高等教育機構和政府機構的研發活動開支分別佔本地研發總開支的 43%、52% 和 5%。雖然政府機構（主要是公共科技支援機構）所進行的研發活動佔本地研發總開支的比重相對較小，須注意的是，政府一直以來透過提供研究設備、基礎建設和資金援助，致力推動工商機構及高等教育機構在研發、提升科技以及創新等方面的發展。按資金來源分析，在 2016 年的本地研發總開支中，政府提供了 92.98 億港元，佔研發總開支的 47%。（圖 1.1，表 1.1 及 1.3）

1.4 In this publication, R&D statistics are mainly analysed by the performing sector, and refer to R&D activities performed in-house for own establishments and/or for other organisations (hereafter referred to as “R&D activities” in the ensuing paragraphs for simplicity, unless otherwise specified). Expenditure on R&D activities performed in the business, higher education and government sectors constituted 43%, 52% and 5% respectively of total GERD in 2016. While R&D activities performed in the government sector (mainly public technology support organisations) represented a relatively small share of total GERD, it should be noted that the Government had been playing an instrumental role in facilitating R&D, technology upgrading and innovation through the provision of research facilities, infrastructure as well as funding support to business establishments and higher education institutions. Analysed by source of funds, R&D expenditure financed by the Government amounted to HK\$9,298 million or 47% of the total GERD in 2016. (Chart 1.1, Tables 1.1 and 1.3)

圖 1.1 2013 年至 2016 年本地研發總開支分布
Chart 1.1 Distribution of gross domestic expenditure on R&D, 2013 to 2016



按職能類別劃分的研發人員

1.5 除研發活動開支外，另一項反映內部研發投入的重要指標，是研發人員數目。研發人員的人數主要以「相當於全日制的人數」來計算，並根據有關統計年度內已投放在研發活動的工作年總數作估算。

1.6 在 2016 年，研發人員總數（以相當於全日制的人數計算）為 29 047 人，較 2015 年上升 3%。（表 1.1）

1.7 大部分的研發人員就業於高等教育機構⁽¹⁾和工商機構，他們分別佔 2016 年研發人員總數的 55% 和 42%。按職能類別分析，2016 年大部分研發人員是研究員（86%），其次是技術員（8%）及其他輔助人員（6%）。（圖 1.2 及 1.3，表 1.4）

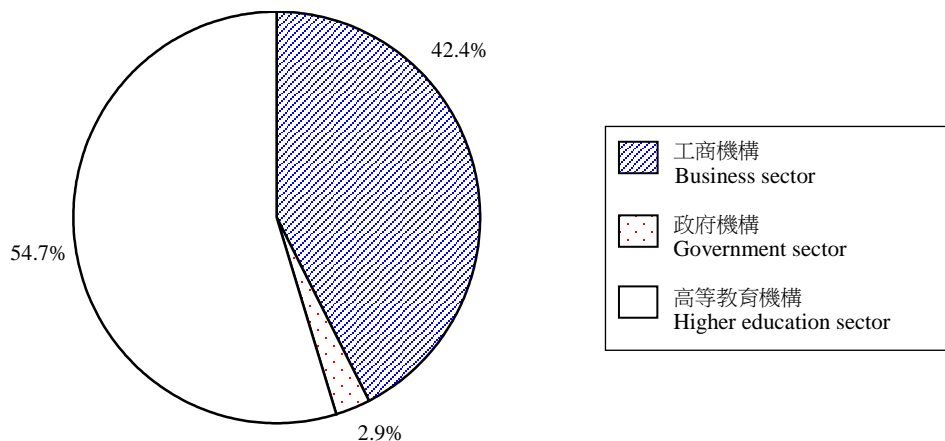
R&D personnel by type of function

1.5 In addition to the expenditure on R&D activities, another important indicator to reflect the input into in-house R&D is the number of R&D personnel. The number of R&D personnel is mainly measured in terms of full-time equivalent (FTE), which is estimated on the basis of the total number of person-years deployed to in-house R&D activities during the reference year.

1.6 A total of 29 047 R&D personnel (in FTE) were recorded in 2016, up by 3% when compared with 2015. (Table 1.1)

1.7 Most of the R&D personnel were engaged in the higher education⁽¹⁾ and business sectors, which accounted for 55% and 42% respectively of the total number of R&D personnel in 2016. Analysed by type of function, most of the R&D personnel in 2016 were researchers (86%), followed by technicians (8%) and other supporting staff (6%). (Charts 1.2 and 1.3, Table 1.4)

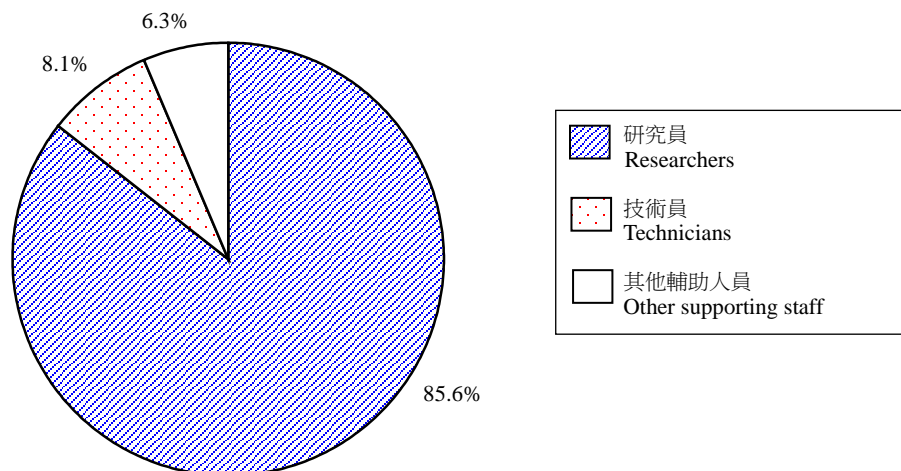
圖 1.2 按進行機構類別劃分的 2016 年研發人員（相當於全日制的人數）分布
Chart 1.2 Distribution of R&D personnel (in FTE) by performing sector in 2016



(1) 高等教育機構的研發人員數字包括大學教育資助委員會資助的大學在有關學年的「與研究有關的人員」及全日制「研究課程研究生」數目。「與研究有關的人員」是指 80% 或以上的工作時間是用於進行與研究有關工作的人員。

(1) Figures on R&D personnel in the higher education sector cover the number of "research related staff" and full-time "research postgraduate students" in the respective academic year of the universities funded by University Grants Committee. "Research related staff" refer to staff having deployed 80% or more of their time to research related activities.

圖 1.3 按職能類別劃分的 2016 年研發人員（相當於全日制的人數）分布
 Chart 1.3 Distribution of R&D personnel (in FTE) by type of function in 2016



工商機構的研發活動

1.8 工商機構是本港研發活動的重要進行者。2016 年工商機構用於內部研發活動的總開支為 85.28 億港元，較 2015 年的 79.94 億港元上升 7%。工商機構的研發開支相對本地生產總值的比率，由 2015 年的 0.33% 輕微上升至 2016 年的 0.34%。（表 1.1）

1.9 按選定行業組別分析，進出口貿易、批發及零售業以及住宿及膳食服務業的內部研發開支佔所有選定行業的內部研發活動開支總額的 40%，在各選定行業組別中所佔的比重最大。其次是資訊及通訊業（31%）。（圖 1.4，表 1.5）

1.10 在 2016 年所有曾進行研發活動（包括內部研發活動及／或外判研發活動）的工商機構當中，大型機構佔 7%，但其內部研發開支佔整體內部研發開支總額的 50%。中型和小型機構分別佔整體內部研發開支總額的 31% 和 19%。（圖 1.4，表 1.5）

R&D activities in the business sector

1.8 The local businesses constitute an important R&D performing sector in Hong Kong. The total expenditure on in-house R&D activities in the business sector amounted to HK\$8,528 million in 2016, 7% higher than 2015 (HK\$7,994 million). The ratio of business R&D expenditure to GDP slightly increased from 0.33% in 2015 to 0.34% in 2016. (Table 1.1)

1.9 Analysed by selected industry grouping, the import/export, wholesale and retail trades, and accommodation and food services sectors accounted for the largest share of 40% of the total expenditure on in-house R&D activities. It was followed by the information and communications sector (31%). (Chart 1.4, Table 1.5)

1.10 Large establishments constituted 7% of the total number of business establishments which had undertaken R&D activities (including both in-house R&D and/or contracted-out R&D activities) in 2016. However, they accounted for 50% of total in-house R&D expenditure. Medium and small establishments accounted for 31% and 19% of total in-house R&D expenditure respectively. (Chart 1.4, Table 1.5)

1.11 按研發開支類別分析，經常開支（72.35 億港元）和資本開支（12.93 億港元）分別佔工商機構的內部研發活動開支的 85% 和 15%。由於研發資本開支主要包括在該統計年度內購買供研發之用的固定資產，屬非經常性質，所以它在內部研發開支總額中，所佔的比重較經常開支相對為小。（圖 1.4，表 1.6）

1.11 Analysed by type of R&D expenditure, the proportions of current expenditure (HK\$7,235 million) and capital expenditure (HK\$1,293 million) for in-house R&D activities in the business sector were 85% and 15% respectively. Since R&D capital expenditure was not recurrent in nature and it covered mainly acquisitions of fixed assets for R&D during the reference year, its share in total in-house R&D expenditure tended to be smaller relative to the current expenditure. (Chart 1.4, Table 1.6)

圖 1.4 按研發開支類別(即經常和資本開支)及選定行業組別/機構規模劃分的 2016 年工商機構的內部研發活動總開支
Chart 1.4 Total expenditure on in-house R&D activities in the business sector in 2016 by type of R&D expenditure (i.e. current and capital expenditure) by selected industry grouping/size of establishment

按行業組別劃分
By industry grouping

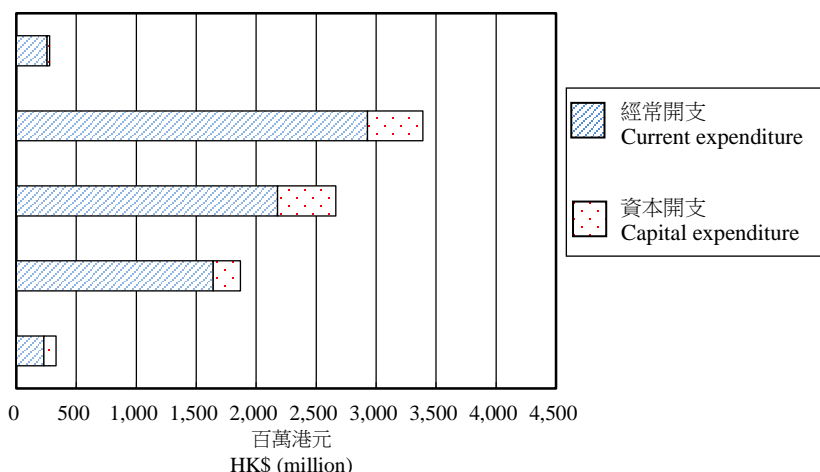
製造業
Manufacturing

進出口貿易、批發及零售業以及住宿及膳食服務業
Import/export, wholesale and retail trades, and accommodation and food services sectors

資訊及通訊業
Information and communications

金融及保險、地產、專業及商用服務業
Financing and insurance, real estate, professional and business services sectors

其他
Others

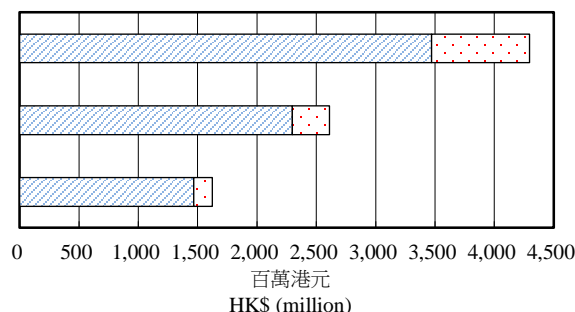


按機構規模劃分
By size of establishment

大型
Large

中型
Medium

小型
Small



按研究類別劃分的內部研發總開支

1.12 工商機構的內部研發總開支主要涉及商業應用有關的研究工作。就 2016 年的內部研發總開支而言，當中最大部分是用於實驗發展（78%），其次是應用研究（22%）和基礎研究（0.4%）。（圖 1.5(i)及 1.5(ii)，表 1.7）

Total in-house R&D expenditure by type of research

1.12 In-house R&D expenditure in the business sector was mainly targeted to research related to businesses. Of the total in-house R&D expenditure incurred in 2016, the largest share went to experimental development (78%), followed by applied research (22%) and basic research (0.4%). (Charts 1.5(i) and 1.5(ii), Table 1.7)

圖 1.5(i) 按研究類別劃分的 2016 年工商機構的內部研發活動總開支分布
Chart 1.5(i) Distribution of total expenditure on in-house R&D activities in the business sector in 2016 by type of research

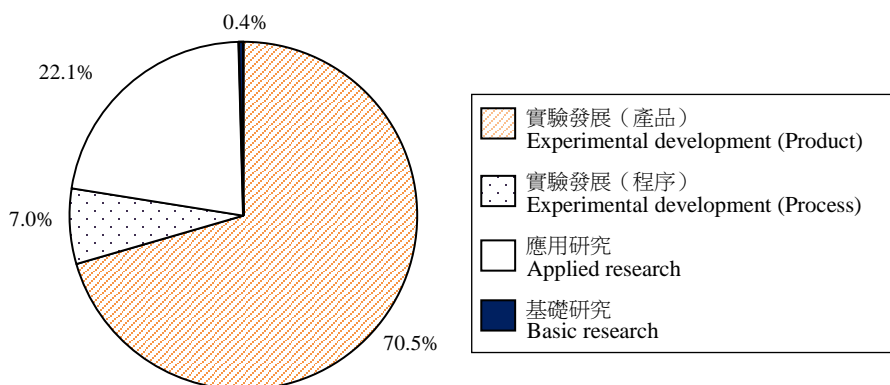
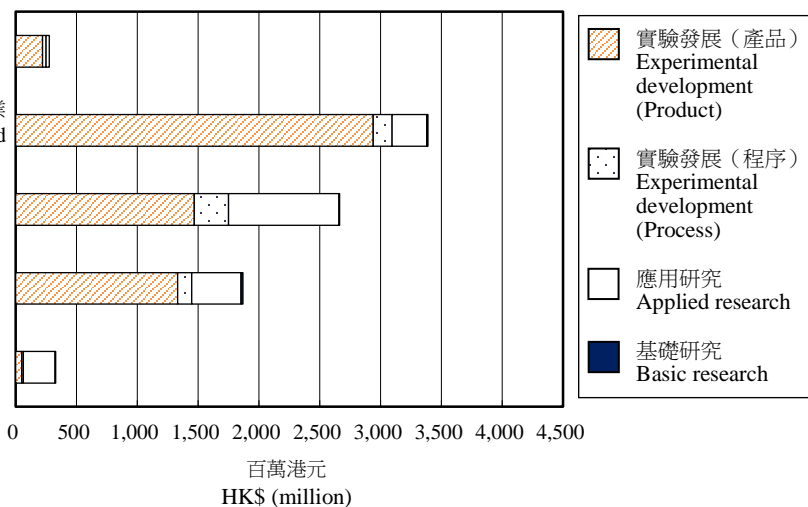


圖 1.5(ii) 按研究類別及選定行業組別／機構規模劃分的 2016 年工商機構的內部研發活動總開支
Chart 1.5(ii) Total expenditure on in-house R&D activities in the business sector in 2016 by type of research by selected industry grouping/size of establishment

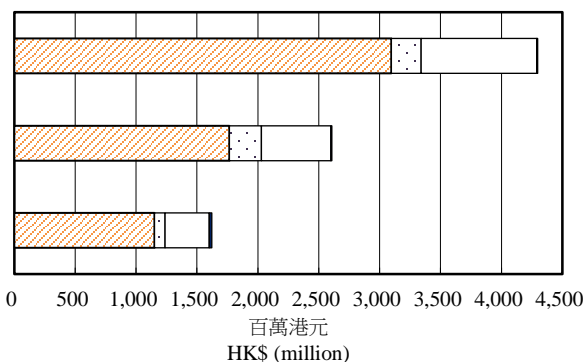
按行業組別劃分
 By industry grouping

- 製造業
Manufacturing
- 進出口貿易、批發及零售業以及住宿及膳食服務業
Import/export, wholesale and retail trades, and accommodation and food services sectors
- 資訊及通訊業
Information and communications
- 金融及保險、地產、專業及商用服務業
Financing and insurance, real estate, professional and business services sectors
- 其他
Others



按機構規模劃分
 By size of establishment

- 大型
Large
- 中型
Medium
- 小型
Small



按研發活動範疇劃分的內部研發總開支

Total in-house R&D expenditure by field of R&D activity

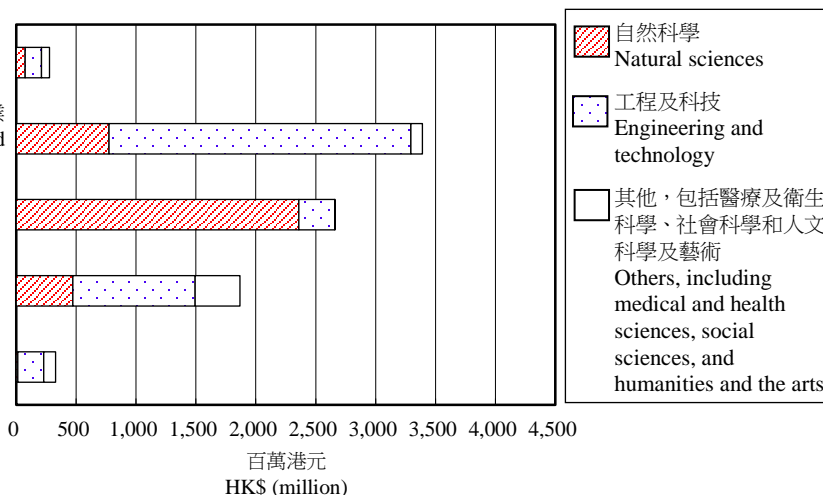
1.13 按研發活動範疇分析，大部分的內部研發活動總開支是用於工程及科技（49%）和自然科學（43%）。其他範疇（包括醫療及衛生科學、社會科學和人文科學及藝術）的研發總開支只佔小部分（7%）。（圖 1.6，表 1.8）

1.13 Analysed by field of R&D activity, a predominant portion of total expenditure on in-house R&D activities was directed to the fields of engineering and technology (49%), and natural sciences (43%). Only a small portion of total R&D expenditure was related to other fields (including medical and health sciences, social sciences, and humanities and the arts) (7%). (Chart 1.6, Table 1.8)

圖 1.6 按研發活動範疇及選定行業組別／機構規模劃分的 2016 年工商機構的內部研發活動總開支
Chart 1.6 Total expenditure on in-house R&D activities in the business sector in 2016 by field of R&D activity by selected industry grouping/size of establishment

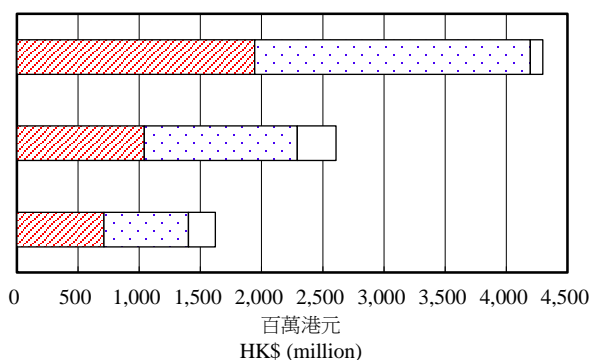
按行業組別劃分
By industry grouping

- 製造業
Manufacturing
- 進出口貿易、批發及零售業以及住宿及膳食服務業
Import/export, wholesale and retail trades, and accommodation and food services sectors
- 資訊及通訊業
Information and communications
- 金融及保險、地產、專業及商用服務業
Financing and insurance, real estate, professional and business services sectors
- 其他
Others



按機構規模劃分
By size of establishment

- 大型
Large
- 中型
Medium
- 小型
Small



按科技領域劃分的內部研發總開支

Total in-house R&D expenditure by technology area

1.14 工商機構的內部研發活動主要集中於資訊科技及工程科技領域。資訊科技和電機及電子工程科技分別佔內部研發活動總開支的 43%及 30%。(圖 1.7, 表 1.9)

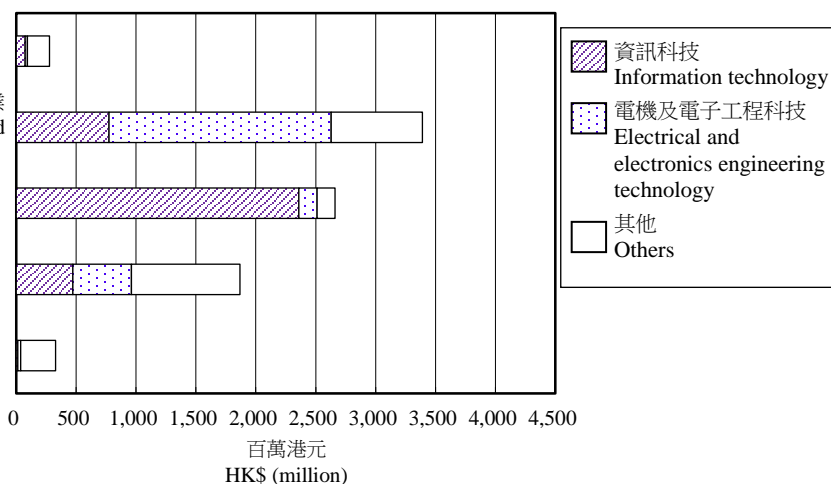
1.14 In-house R&D activities in the business sector were mainly focused on the areas of information technology and engineering technology. Information technology, and electrical and electronics engineering technology accounted for 43% and 30% of total expenditure on in-house R&D activities respectively. (Chart 1.7, Table 1.9)

圖 1.7 按科技領域及選定行業組別／機構規模劃分的 2016 年工商機構的內部研發活動總開支

Chart 1.7 Total expenditure on in-house R&D activities in the business sector in 2016 by technology area by selected industry grouping/size of establishment

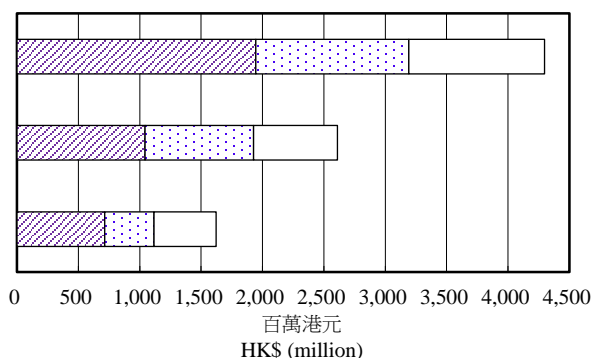
按行業組別劃分
By industry grouping

- 製造業
Manufacturing
- 進出口貿易、批發及零售業以及住宿及膳食服務業
Import/export, wholesale and retail trades, and accommodation and food services sectors
- 資訊及通訊業
Information and communications
- 金融及保險、地產、專業及商用服務業
Financing and insurance, real estate, professional and business services sectors
- 其他
Others



按機構規模劃分
By size of establishment

- 大型
Large
- 中型
Medium
- 小型
Small



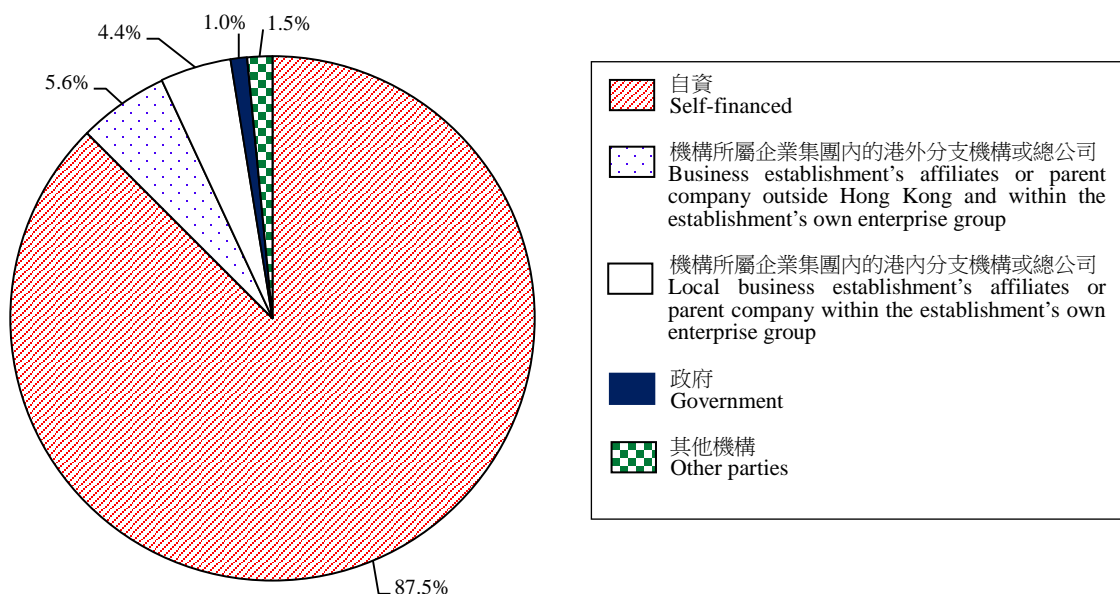
內部研發活動的資金來源

1.15 就工商機構的內部研發活動總開支而言，大約 94% 的資金來自本港。大部分的內部研發開支（87%）由進行研發活動的機構自行出資。其次是機構所屬企業集團內的本港或港外分支機構或總公司（10%）。（圖 1.8，表 1.10）

Source of funds for in-house R&D activities

1.15 Around 94% of the total expenditure on in-house R&D activities in the business sector was supported by local source of funds. Most of the in-house R&D expenditure (87%) was financed by the performing business establishments themselves, followed by business establishment's affiliates or parent company (both in and outside Hong Kong) within the establishment's own enterprise group (10%). (Chart 1.8, Table 1.10)

圖 1.8 按資金來源劃分的 2016 年工商機構的內部研發活動總開支分布
Chart 1.8 Distribution of total expenditure on in-house R&D activities in the business sector in 2016 by source of funds



按職能類別劃分的研發人員

1.16 工商機構的內部研發人員總數（以相當於全日制的人數計算）為 12 318 人，當中 77% 是研究員／科學家／工程師，14% 是技術員，其餘 9% 是其他輔助人員。（圖 1.9(i)及 1.9(ii)，表 1.11）

R&D personnel by type of function

1.16 The number of in-house R&D personnel in the business sector (in FTE) stood at 12 318, of which 77% were researchers/scientists/engineers, 14% were technicians and the remaining 9% were other supporting staff. (Charts 1.9(i) and 1.9(ii), Table 1.11)

圖 1.9(i) 按職能類別劃分的 2016 年工商機構的研發人員數目（相當於全日制的人數）分布

Chart 1.9(i) Distribution of R&D personnel (in FTE) in the business sector in 2016 by type of function

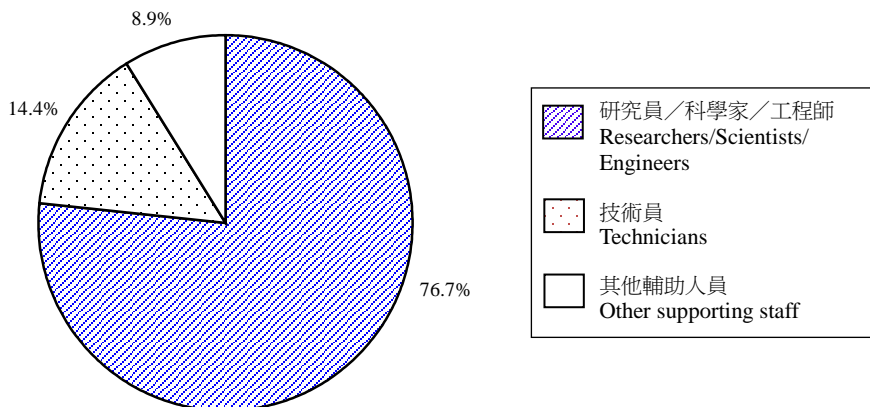


圖 1.9(ii) 按職能類別及選定行業組別／機構規模劃分的 2016 年工商機構的研發人員數目（相當於全日制的人數）

Chart 1.9(ii) R&D personnel (in FTE) in the business sector in 2016 by type of function by selected industry grouping/size of establishment

按行業組別劃分
By industry grouping

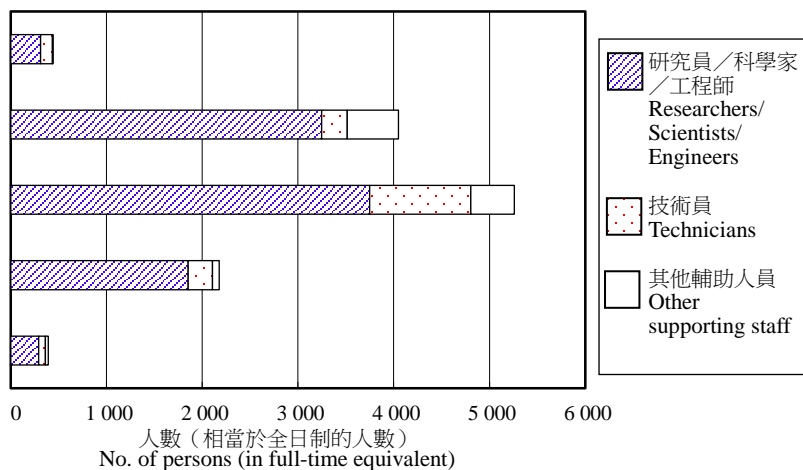
製造業
Manufacturing

進出口貿易、批發及零售業以及住宿及膳食服務業
Import/export, wholesale and retail trades, and accommodation and food services sectors

資訊及通訊業
Information and communications

金融及保險、地產、專業及商用服務業
Financing and insurance, real estate, professional and business services sectors

其他
Others

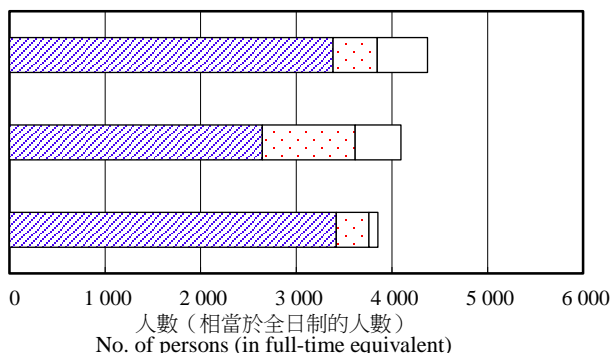


按機構規模劃分
By size of establishment

大型
Large

中型
Medium

小型
Small



按教育程度劃分的研發人員

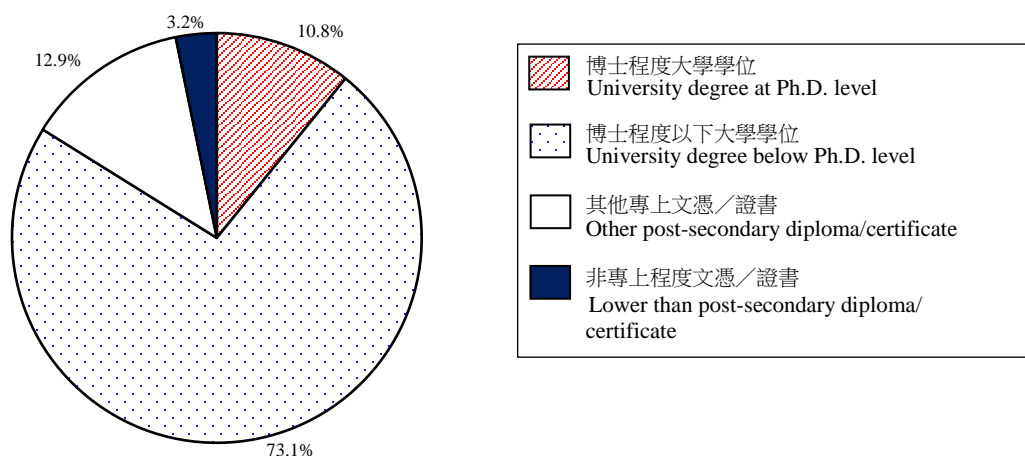
1.17 大部分研發人員具有大學學位。2016 年的 12 318 名研發人員（相當於全日制的人數）當中，11% 達博士程度，73% 擁有博士程度以下大學學位。（圖 1.10，表 1.12）

R&D personnel by level of education

1.17 The majority of the R&D personnel held university degree. Of the 12 318 R&D personnel (in FTE) in 2016, 11% attained Ph.D. level and 73% were holders of university degree below Ph.D. level. (Chart 1.10, Table 1.12)

圖 1.10 按教育程度劃分的 2016 年工商機構的研發人員數目（相當於全日制的人數）分布

Chart 1.10 Distribution of R&D personnel (in FTE) in the business sector in 2016 by level of education

外判研發活動

1.18 除內部研發活動開支的資料外，有關外判予其他機構進行研發活動的開支數字，亦有助更全面分析工商機構於研發活動的整體投資。

Contracted-out R&D activities

1.18 Apart from the information on expenditure on in-house R&D activities, statistics pertaining to expenditure on R&D activities contracted out to other organisations are also useful in providing a more comprehensive analysis on businesses' total investment in R&D activities.

1.19 在 2016 年，工商機構用於外判研發活動的資金共 30.67 億港元。當中，外判予香港以外機構的研發開支為 18.65 億港元（佔外判研發開支總額的 61%），而有關進行機構主要是位於香港、中國內地及澳門以外地方的機構。另一方面，外判予本港機構的研發開支為 12.03 億港元（39%）。（圖 1.11，表 1.13 及 1.15）

1.19 In 2016, a total of HK\$3,067 million was spent on contracted-out R&D activities in the business sector. Business expenditure on R&D contracted out to parties outside Hong Kong amounted to HK\$1,865 million (61% of the total expenditure on contracted-out R&D), with the performing parties concerned mainly located in places outside Hong Kong, the mainland of China and Macao. On the other hand, expenditure on R&D contracted out to local parties amounted to HK\$1,203 million (39%). (Chart 1.11, Tables 1.13 and 1.15)

1.20 按進行研發活動的機構類別分析，外判的研發工作主要由機構所屬企業集團的分支機構或總公司所進行，佔外判研發開支總額的 44%。其次是非機構所屬企業集團內的公司（38%）及公共科技支援機構（11%）。（圖 1.11，表 1.14）

1.20 Analysed by type of performing party, contracted-out R&D projects were mainly undertaken by affiliates or parent company of the enterprise group, which accounted for 44% of the total expenditure on contracted-out R&D activities. It was followed by companies not affiliated with the enterprise group concerned (38%) and public technology support organisations (11%). (Chart 1.11, Table 1.14)

圖 1.11 按進行機構的類別／所屬地區劃分的 2016 年工商機構的外判研發活動總開支
Chart 1.11 Total expenditure on contracted-out R&D activities in the business sector in 2016 by type of performing party/region in which the party performing R&D activity is located

按進行研發活動的機構類別

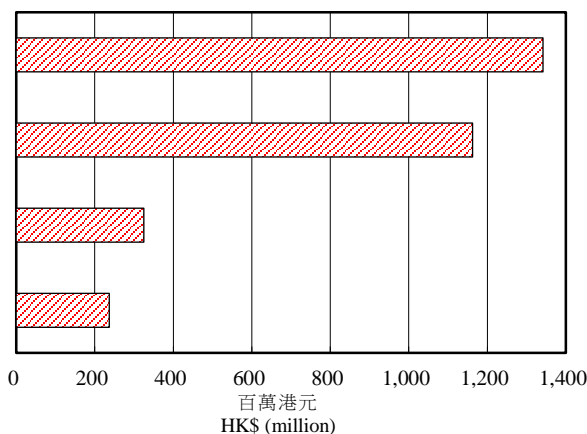
By type of party performing R&D activity

機構所屬企業集團的分支機構或總公司
 Affiliates or parent company of the enterprise group

非機構所屬企業集團內的公司
 Company not affiliated with the enterprise group

公共科技支援機構
 Public technology support organisations

高等教育機構及其他
 Higher education institutions and others



按進行研發活動的機構所屬地區

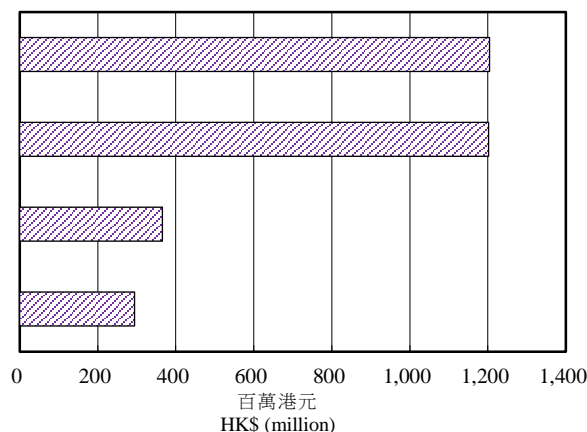
By region in which the party performing R&D activity is located

香港、中國內地及澳門以外地方
 Places outside Hong Kong, the mainland of China and Macao

香港
 Hong Kong

中國內地及澳門 - 珠江三角洲經濟區
 The mainland of China and Macao - Pearl River Delta (PRD) Economic Zone

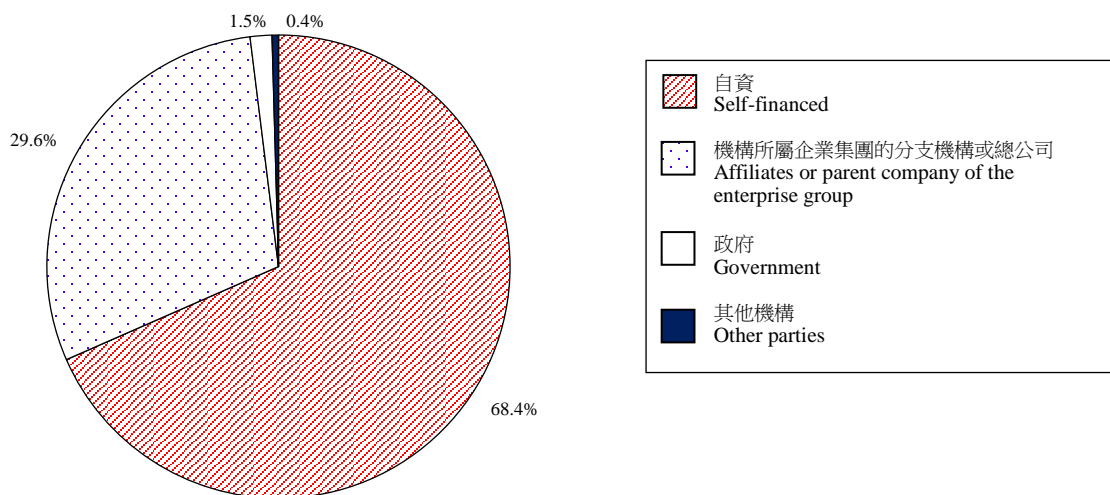
中國內地及澳門 - 珠江三角洲經濟區以外地方
 The mainland of China and Macao - Places other than PRD Economic Zone



1.21 按外判研發活動開支的資金來源分析，68%資金來自機構本身。其次分別為機構所屬企業集團的分支機構或總公司（30%）及政府（例如創新及科技基金）（2%）。（圖 1.12，表 1.16）

1.21 Analysed by source of funds for contracted-out R&D activities, 68% of the funds came from the establishments themselves. It was followed by affiliates or parent company of the enterprise group (30%) and Government (e.g. Innovation and Technology Fund) (2%). (Chart 1.12, Table 1.16)

圖 1.12 按資金來源劃分的 2016 年工商機構的外判研發活動總開支分布
Chart 1.12 Distribution of total expenditure on contracted-out R&D activities in the business sector in 2016 by source of funds



研發活動的協作安排

1.22 在 2016 年曾進行研發活動（包括內部研發活動及／或外判研發活動）的工商機構當中，16%（622 間）表示有就研發活動和其他機構訂立協作安排。按協作夥伴的類別分析，該 622 間機構當中，有 56% 與非機構所屬企業集團內的公司有協作安排，28% 則與高等教育機構有協作安排。（圖 1.13，表 1.17）

Collaboration arrangements on R&D activities

1.22 Some 16% (622) of the business establishments which undertook R&D activities (including both in-house R&D and/or contracted-out R&D activities) in 2016 reported that they had collaboration arrangements on R&D activities with other parties. Analysed by type of collaboration partner, 56% of these 622 establishments had collaboration arrangements with company not affiliated with the enterprise group, and 28% had collaboration arrangements with higher education institutions. (Chart 1.13, Table 1.17)

1.23 在有研發活動協作安排的機構中，50%的協作夥伴是在珠江三角洲經濟區。這顯示出香港的工商機構與位於中國內地珠江三角洲經濟區的機構有緊密的研發活動協作安排。（圖 1.13，表 1.18）

1.23 Among the establishments with collaboration arrangements on R&D activities, 50% had collaboration with organisations in the Pearl River Delta (PRD) Economic Zone. This indicated that there were close ties of collaboration on R&D activities between Hong Kong businesses and organisations located in the PRD Economic Zone of the mainland of China. (Chart 1.13, Table 1.18)

圖 1.13 按協作機構的類別及所屬地區劃分的 2016 年有研發活動和其他機構訂立協作安排的工商機構數目

Chart 1.13 Number of business establishments with collaboration arrangements on R&D activities with other organisations in 2016 by type of collaborating organisation and region in which the collaborating organisation is located

按協作機構類別

By type of collaborating organisation

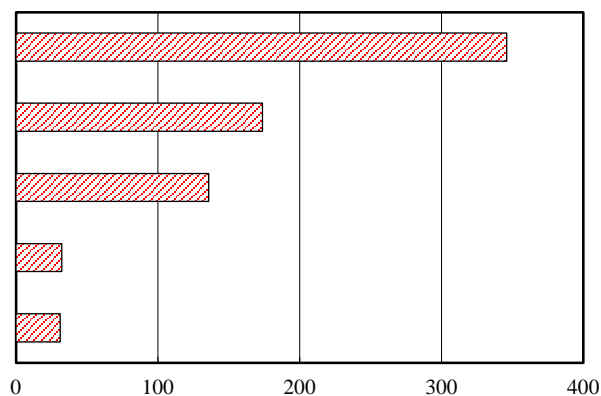
非機構所屬企業集團內的公司
Company not affiliated with the enterprise group

高等教育機構
Higher education institutions

機構所屬企業集團的分支機構或總公司
Affiliates or parent company of the enterprise group

公共科技支援機構
Public technology support organisations

政府
Government



有協作安排的機構數目
No. of establishments with collaboration arrangements

按協作機構所屬地區

By region in which the collaborating organisation is located

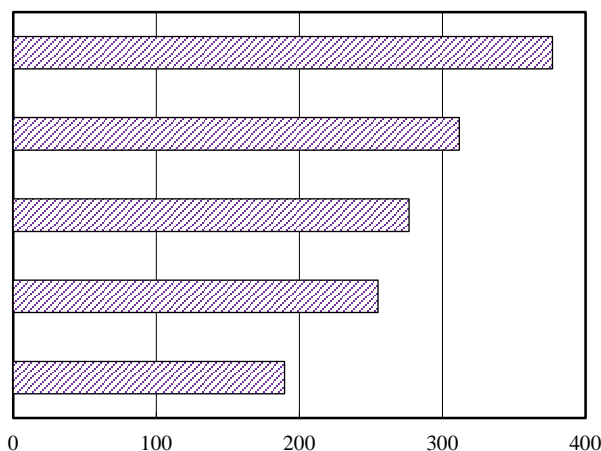
香港
Hong Kong

中國內地及澳門 - 珠江三角洲經濟區
The mainland of China and Macao - Pearl River Delta (PRD) Economic Zone

香港、中國內地及澳門以外地方
Places outside Hong Kong, the mainland of China and Macao

中國內地及澳門 - 其他地區
The mainland of China and Macao - Other regions

中國內地及澳門 - 泛珠三角區域 (珠江三角洲經濟區及香港除外)
The mainland of China and Macao - Pan-PRD Region (other than PRD Economic Zone and Hong Kong)



有協作安排的機構數目
No. of establishments with collaboration arrangements

高等教育機構的研發活動

1.24 近年來，高等教育機構⁽²⁾不斷加強研發的活動。高等教育機構在 2016 年用於研發方面的開支為 102.71 億港元，較 2015 年度的開支上升了 8%，高等教育機構的研發開支相對 2016 年本地生產總值的比率為 0.41%。（表 1.1）

1.25 在 2016 年高等教育機構的研發活動開支總額當中，經常開支佔很大比重，達 95%，資本開支則佔 5%。（表 1.2）

按職能類別劃分的研發人員

1.26 在 2016 年高等教育機構的研發人員數目（相當於全日制的人數）為 15 899 人。按職能類別分析，2016 年大部分研發人員是研究員（93%），其次是其他輔助人員（4%）及技術員（3%）。（圖 1.14，表 1.1 及 1.4）

R&D activities in the higher education sector

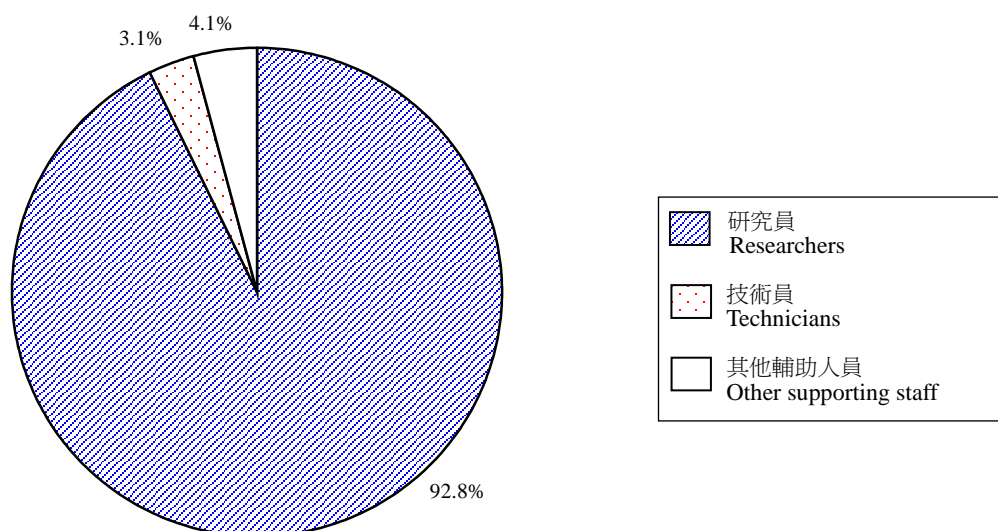
1.24 The higher education sector⁽²⁾ has been stepping up its effort in undertaking R&D activities in recent years. The R&D expenditure in the higher education sector amounted to HK\$10,271 million in 2016, 8% higher than the corresponding expenditure in 2015. This represented a ratio of 0.41% to GDP in 2016. (Table 1.1)

1.25 Current expenditure incurred in R&D activities in the higher education sector constituted a predominant share of 95% of total expenditure on R&D in this sector in 2016, while capital expenditure accounted for 5%. (Table 1.2)

R&D personnel by type of function

1.26 The number of R&D personnel (in FTE) in the higher education sector reached 15 899 in 2016. Analysed by type of function, most of the R&D personnel in 2016 were researchers (93%), followed by other supporting staff (4%) and technicians (3%). (Chart 1.14, Tables 1.1 and 1.4)

圖 1.14 按職能類別劃分的 2016 年高等教育機構研發人員數目（相當於全日制的人數）分布
Chart 1.14 Distribution of R&D personnel (in FTE) in the higher education sector in 2016 by type of function



(2) 數字包括大學教育資助委員會資助的大學在有關學年的資料。高等教育機構的學年由每年的 7 月至翌年的 6 月。

(2) Figures refer to data in the respective academic year of the universities funded by the University Grants Committee. The academic year of the higher education sector starts in July of a year and ends in June of the following year.

政府機構的研發活動

1.27 政府的主要角色並非作為研發進行者，而是透過提供資金援助及科技基礎設施，致力提升香港的科技與創新水平。

1.28 政府機構在 2016 年的研發開支達 9.14 億港元，較 2015 年度的開支上升了 26%。而政府機構的研發開支相對 2016 年本地生產總值的比率為 0.04%。(表 1.1)

1.29 按研發活動開支類別分析，經常開支和資本開支分別佔政府機構的研發開支總額的 93% 和 7%。(表 1.2)

按職能類別劃分的研發人員

1.30 在 2016 年政府機構的研發人員數目(相當於全日制的人數)為 830 人。研究員、技術員和其他輔助人員的分布分別為 80%、10% 和 10%。(圖 1.15, 表 1.1 及 1.4)

R&D activities in the government sector

1.27 Instead of being a major performer of R&D, the Government is playing a facilitating role in driving the economy's technology and innovation upgrading, through provision of funding support and technological infrastructure.

1.28 The R&D expenditure in the government sector amounted to HK\$914 million in 2016, which was 26% higher than the corresponding expenditure in 2015. This was equivalent to a ratio of 0.04% to GDP in 2016. (Table 1.1)

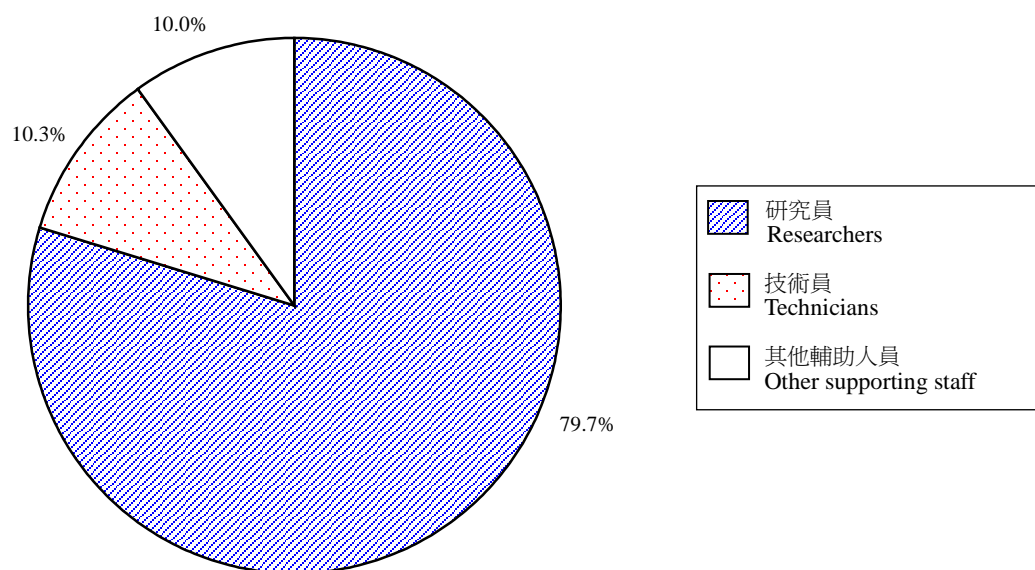
1.29 Analysed by type of R&D expenditure, the proportions of current expenditure and capital expenditure in the government sector were 93% and 7% of the total expenditure on R&D in this sector respectively. (Table 1.2)

R&D personnel by type of function

1.30 The number of R&D personnel (in FTE) in the government sector reached 830 in 2016. The distribution of researchers, technicians and other supporting staff was 80%, 10% and 10% respectively. (Chart 1.15, Tables 1.1 and 1.4)

圖 1.15 按職能類別劃分的 2016 年政府機構研發人員數目 (相當於全日制的人數) 分布

Chart 1.15 Distribution of R&D personnel (in FTE) in the government sector in 2016 by type of function



2 工商機構的技術創新活動 Technological Innovation Activities in the Business Sector

工商機構進行技術創新活動的普及情況（包括產品及程序創新）

2.1 創新活動在知識型經濟中扮演著一個重要的角色。除進行研究及發展（研發）活動外，一間機構可從事一些與研發無直接關係但對其創新活動和業務表現有所貢獻的其他技術創新活動（例如把研發成果商品化）。

2.2 約3%的工商機構在2016年曾進行一類或以上的技術創新活動。在2016年，從事資訊及通訊業的機構較普遍進行技術創新活動（佔該行業所有機構的20%）。（圖2.1，表2.1）

2.3 技術創新活動的普及程度在不同規模的機構略有差別。大型機構較中小型機構傾向於進行技術創新活動，大型機構當中有8%曾進行技術創新活動，而中型和小型機構的相應數字分別為6%和2%。（表2.1）

Diffusion of technological innovation (TI) activities in the business sector (including product and process innovation)

2.1 Innovation activities play an important role in a knowledge-based economy. Apart from conducting research and development (R&D) activities, an establishment may also undertake other TI activities not directly related to R&D (e.g. commercialisation of R&D output) and yet contribute to the innovation activity and the business performance of the establishment.

2.2 About 3% of business establishments had undertaken one or more types of TI activities in 2016. TI activities were more prevalent among establishments engaging in the information and communications sector (20% of total establishments in the sector) in 2016. (Chart 2.1, Table 2.1)

2.3 The levels of diffusion of TI activities among establishments of different sizes were different. Large establishments had a higher propensity to undertake TI activities than medium and small establishments. About 8% of large establishments were involved in TI activities, as compared with 6% and 2% among medium and small establishments respectively. (Table 2.1)

圖 2.1 按選定行業組別劃分在 2016 年有進行技術創新活動的工商機構分布
Chart 2.1 Distribution of business establishments having undertaken TI activities in 2016 by selected industry grouping

按行業組別劃分
By industry grouping

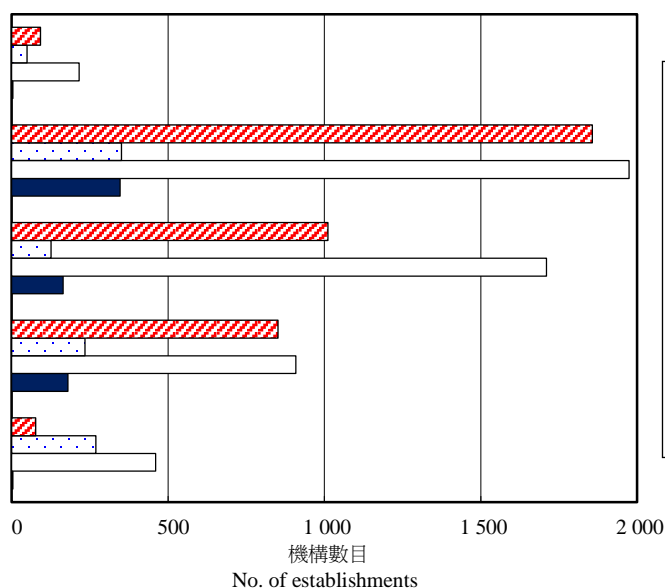
製造業
Manufacturing

進出口貿易、批發及零售業以及住宿及膳食服務業
Import/export, wholesale and retail trades, and accommodation and food services sectors

資訊及通訊業
Information and communications

金融及保險、地產、專業及商用服務業
Financing and insurance, real estate, professional and business services sectors

其他
Others



產品創新

2.4 約 1% 的工商機構曾於 2016 年在市場上推出一種或以上技術嶄新或經顯著改良的產品（貨品或服務）。這些機構平均每間推出 2.0 項技術嶄新或經顯著改良的產品。（表 2.1、2.2 及 2.3）

2.5 在 2016 年曾進行產品創新的工商機構當中，約 71% 是自行開發有關產品，以及 6% 的機構則與其他機構合作開發有關產品。整體而言，2016 年在市場上推出的創新產品所帶來的業務收入佔有關機構的業務收入總額的 6%。（表 2.3）

2.6 另外，約 0.5% 的工商機構表示曾在 2016 年推出不僅對有關機構而且對市場均是技術嶄新或經顯著改良的產品（貨品或服務）。（表 2.2）

程序創新

2.7 約有 0.4% 的工商機構在 2016 年進程序創新。各行業組別中，從事資訊及通訊業的機構進程序創新的比率較高（1%）。此外，大型機構進程序創新的比率（2%）較中型（0.4%）及小型機構（0.3%）為高。（表 2.1 及 2.4）

2.8 在 2016 年，約 89% 有進程序創新的工商機構表示，有關程序由機構自行開發，以及有 3% 的機構表示有關程序由機構本身與其他機構合作開發。曾進程序創新的機構在 2016 年平均每間實施 1.4 項程序創新項目。（表 2.5）

Product innovation

2.4 About 1% of the business establishments had introduced to the market one or more technologically new or significantly improved products (goods or services) in 2016. The average number of technologically new or significantly improved products introduced to the market by each of these establishments was 2.0. (Tables 2.1, 2.2 and 2.3)

2.5 For business establishments having undertaken product innovation in 2016, about 71% of them developed the products by themselves, and 6% cooperated with other parties in developing the products. Overall speaking, the innovative products introduced to the market in 2016 contributed 6% to the total business receipts of establishments having undertaken product innovation in 2016. (Table 2.3)

2.6 Furthermore, about 0.5% of the business establishments were involved in the introduction of technologically new or significantly improved products (goods or services) not only new to the establishment but also new to the market in 2016. (Table 2.2)

Process innovation

2.7 About 0.4% of the business establishments undertook process innovation in 2016. Among various industry groupings, the information and communications sector had a higher proportion of establishments (1%) undertaking process innovation. Besides, the proportion of establishments undertaking process innovation was higher in large establishments (2%) than in medium (0.4%) and small establishments (0.3%). (Tables 2.1 and 2.4)

2.8 Around 89% of the business establishments with process innovation in 2016 indicated that the processes were developed by the establishments themselves, and 3% indicated that the processes were developed by the establishments in cooperation with other parties. On average, the number of process innovation implemented by each of the establishments having undertaken process innovation was 1.4 in 2016. (Table 2.5)

2.9 在 2016 年曾進程序創新的工商機構中，21% 表示在技術嶄新或經顯著改良的程序全面實施後在不同程度上有助減低經營成本。（表 2.6）

2.9 Among those business establishments having undertaken process innovation in 2016, 21% indicated that the innovation would help lower their operating costs to different extent after the full implementation of the technologically new or significantly improved process. (Table 2.6)

技術創新活動的開支

Expenditure on TI activities

2.10 在 2016 年，工商機構技術創新活動的開支總額為 199.60 億港元。資訊及通訊業用於技術創新活動的金額最多，佔技術創新開支總額的 33%。其次是進出口貿易、批發及零售業以及住宿及膳食服務業，以及金融及保險、地產、專業及商用服務業（分別佔 32% 和 22%）。（表 2.1 及 2.7）

2.10 The total expenditure on TI activities in the business sector in 2016 was HK\$19,960 million. The information and communications sector spent most on TI activities, constituting 33% of the total TI expenditure. It was followed by the import/export, wholesale and retail trades, and accommodation and food services sectors; and financing and insurance, real estate, professional and business services sectors (32% and 22% respectively). (Tables 2.1 and 2.7)

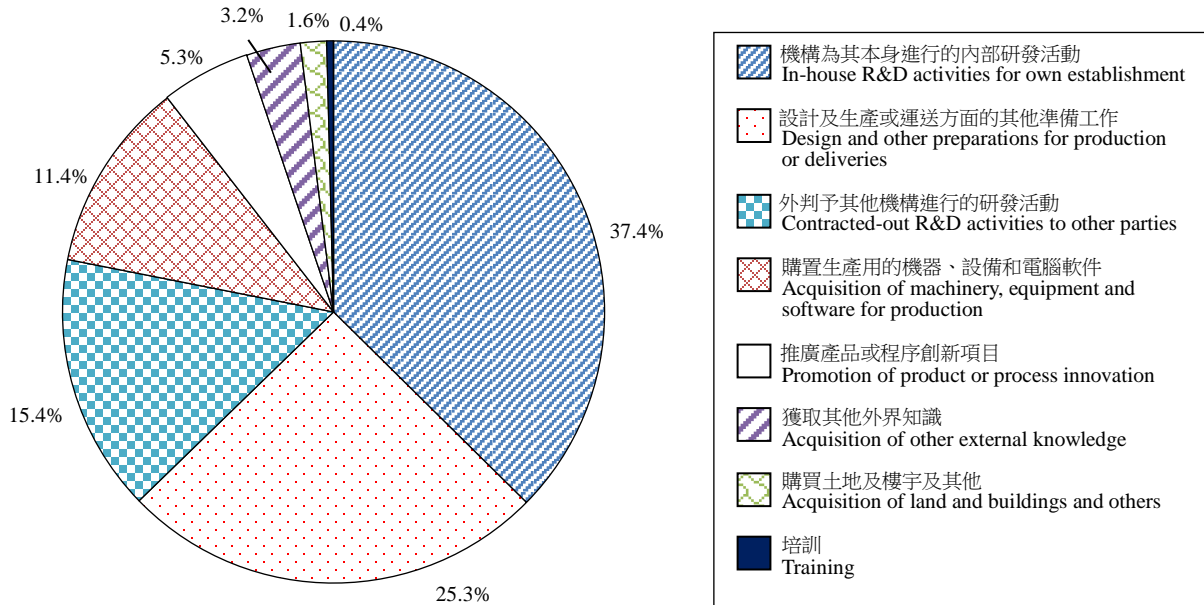
2.11 一般而言，大型機構比中小型機構傾向於用較多資金來進行技術創新活動。以機構數目而言，大、中及小型機構分別佔在 2016 年曾進行技術創新活動的機構的 7%、23% 和 70%。然而，它們佔技術創新開支總額的百分比卻分別是 58%、20% 和 22%。（表 2.1 及 2.7）

2.11 In general, large establishments tended to spend more in TI activities than small to medium sized establishments. While large, medium and small establishments respectively constituted 7%, 23% and 70% of the establishments that had undertaken TI activities in 2016, their shares in total TI expenditure were 58%, 20% and 22% respectively. (Tables 2.1 and 2.7)

2.12 按技術創新開支類別分析，頗大部分的技术創新開支是用於機構本身的內部研發活動（37%），其次是設計及生產或運送方面的其他準備工作（25%），以及外判予其他機構進行研發活動（15%）。（圖 2.2，表 2.7）

2.12 Analysed by type of TI expenditure, a fairly large portion of TI expenditure was spent on in-house R&D activities for own establishment (37%), followed by design and other preparations for production or deliveries (25%), and contracted-out R&D activities to other parties (15%). (Chart 2.2, Table 2.7)

圖 2.2 按技術創新活動類別劃分的 2016 年工商機構的技術創新活動總開支分布
Chart 2.2 Distribution of total expenditure on TI activities in the business sector in 2016 by type of TI activity



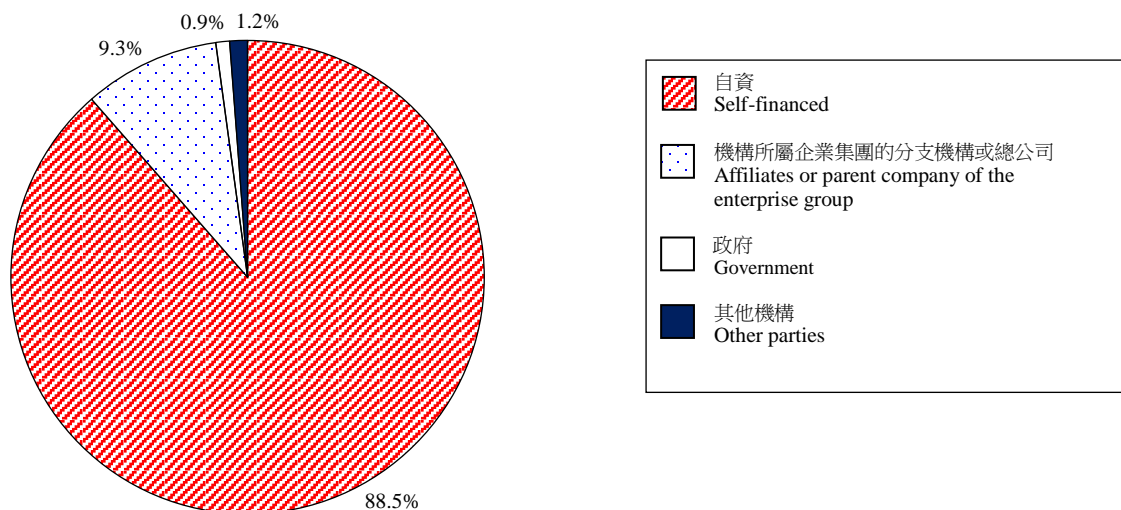
技術創新活動的資金來源

2.13 按資金來源分析，89% 的技術創新開支由機構本身出資。第二大資金來源則是機構所屬企業集團的分支機構或總公司（技術創新開支的 9%）。（圖 2.3，表 2.8）

Source of funds for TI activities

2.13 Analysed by source of funds, 89% of the TI expenditure was financed by the establishments themselves. The second major funding source came from affiliates or parent company of the enterprise group (9% of TI expenditure). (Chart 2.3, Table 2.8)

圖 2.3 按資金來源劃分的 2016 年工商機構的技術創新活動總開支分布
Chart 2.3 Distribution of total expenditure on TI activities in the business sector in 2016 by source of funds



技術創新活動的特色

Characteristics of TI activities

技術創新活動的影響

Impact of TI activities

2.14 整體而言，在 2016 年曾進行技術創新活動的工商機構中有頗大比例均報稱有關活動對其機構有正面的影響，而在產品及符合行業規例／標準方面的影響尤為顯著。技術創新活動對機構產生的影響（以獲機構評為高影響程度的百分比計算）是：

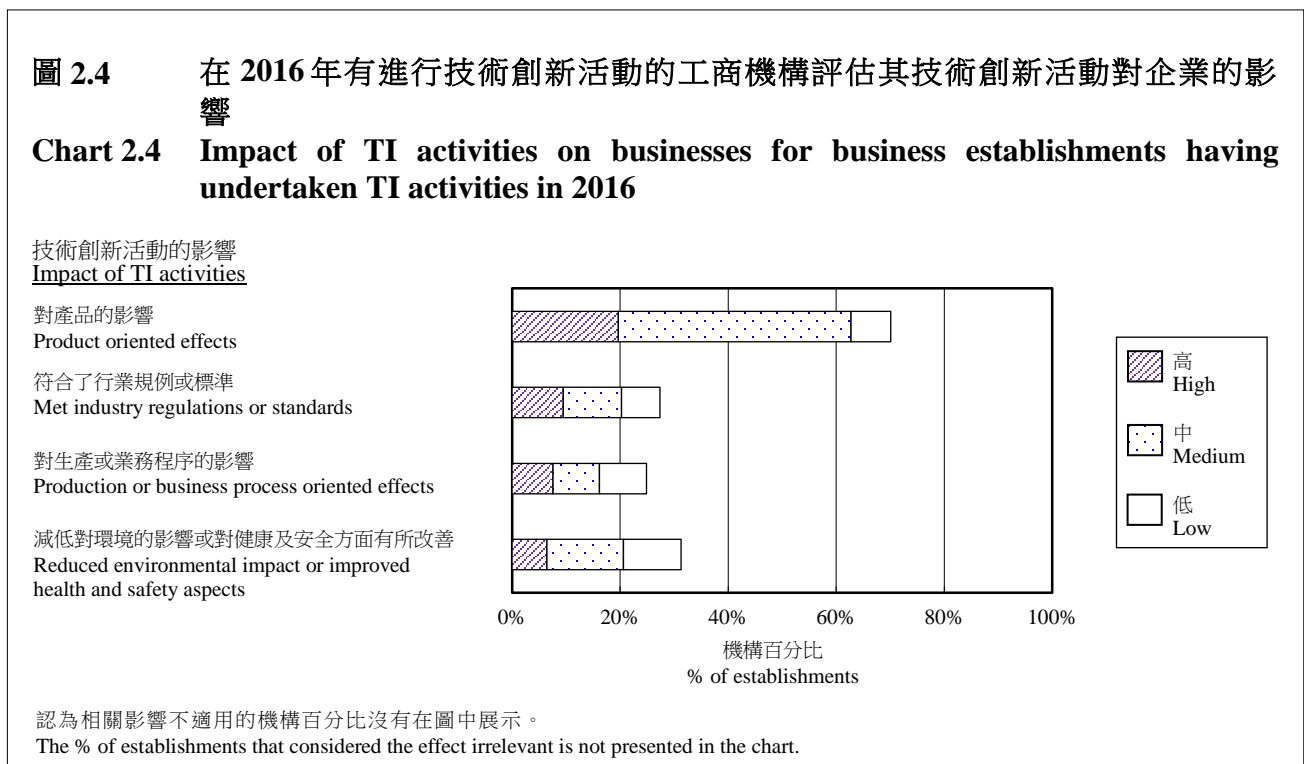
2.14 Overall speaking, a good proportion of the business establishments having undertaken TI activities in 2016 reported that there was positive impact of undertaking TI activities. The more significant positive effects were related to the products and compliance with industry regulations/standards. The effects of TI activities on the establishments (in terms of the percentage of establishments with high rating on such aspects) were:

- (a) 對產品的影響（例如：擴大了產品（貨品或服務）的範圍或市場佔有率；改善了產品的質素等）（20%）
- (b) 符合了行業規例或標準（10%）
- (c) 對生產或業務程序的影響（例如：改善了生產靈活性；提高了生產量；減低了每件產品的生產成本等）（8%）
- (d) 減低對環境的影響，或對健康及安全方面有所改善（6%）

- (a) Product oriented effects (e.g. increased range of products (goods or services) or market share; improved quality of products, etc.) (20%)
- (b) Met industry regulations or standards (10%)
- (c) Production or business process oriented effects (e.g. improved production flexibility; increased production capacity; reduced production cost per unit, etc.) (8%)
- (d) Reduced environmental impact or improved health and safety aspects (6%)

（圖 2.4，表 2.9）

(Chart 2.4, Table 2.9)



技術創新活動的協作安排

2.15 在 2016 年，約 19% (1 436 間) 有進行技術創新活動的工商機構報稱有就技術創新活動和其他機構訂立協作安排。按協作機構所屬地區分析，有 66% 與香港的機構訂立協作安排，而 35% 與珠江三角洲經濟區的機構訂立協作安排。(圖 2.5，表 2.11)

2.16 至於協作機構的類別，47% 與非機構所屬企業集團內的公司有協作安排，其次是公共科技支援機構 (33%)。(圖 2.5，表 2.10)

Collaboration arrangements on TI activities

2.15 About 19% (1 436) of the business establishments with TI activities in 2016 reported to have collaboration arrangements on TI activities with other organisations. Analysed by the location of the collaborating organisations, 66% co-operated with organisations in Hong Kong, and 35% with organisations in Pearl River Delta (PRD) Economic Zone. (Chart 2.5, Table 2.11)

2.16 As regards the type of collaborating organisations, 47% were with the company not affiliated with the enterprise group. It was followed by public technology support organisations (33%) (Chart 2.5, Table 2.10)

圖 2.5 按協作機構的類別及所屬地區劃分的 2016 年有就技術創新活動和其他機構訂立協作安排的工商機構數目
Chart 2.5 Number of business establishments with collaboration arrangements on TI activities with other organisations in 2016 by type of collaborating organisation and region in which the collaborating organisation is located

按協作機構類別

By type of collaborating

非機構所屬企業集團內的公司

Company not affiliated with the enterprise group

公共科技支援機構高等教育機構

Public technology support organisations

機構所屬企業集團的分支機構或總公司

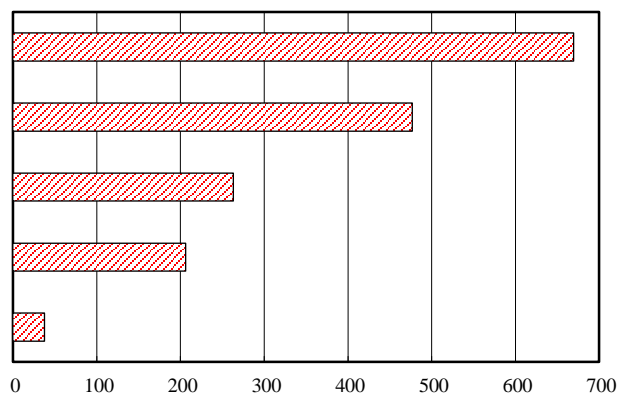
Affiliates or parent company of the enterprise group

高等教育機構

Higher education institutions

政府

Government



按協作機構所屬地區

By region in which the collaborating organisation is located

香港

Hong Kong

中國內地及澳門 - 珠江三角洲經濟區

The mainland of China and Macao - Pearl River Delta (PRD) Economic Zone

香港、中國內地及澳門以外地方

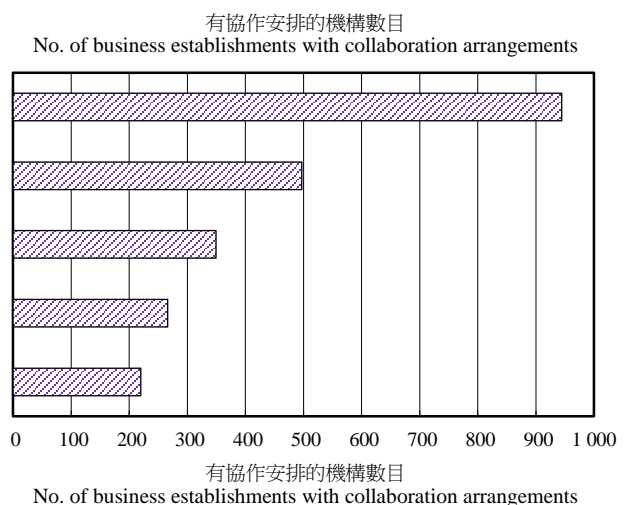
Places outside Hong Kong, the mainland of China and Macao

中國內地及澳門 - 其他地區

The mainland of China and Macao - Other regions

中國內地及澳門 - 泛珠三角區域 (珠江三角洲經濟區及香港除外)

The mainland of China and Macao - Pan-PRD Region (other than PRD Economic Zone and Hong Kong)



阻礙技術創新的因素

2.17 在 2016 年沒有進行技術創新活動的工商機構中，他們的最主要原因是「由於市場或行業情況，因此暫無需要」（92%）。（表 2.12）

2.18 對於在 2016 年有進行技術創新活動的工商機構來說，阻礙技術創新活動的最重要因素（以獲機構評為高影響程度的百分比計算）是「創新成本太高」（27%）。其次是「機構內部或所屬企業集團缺乏資金」（23%）及「顧客對創新產品或服務的需求不明確」（21%）。（表 2.13）

仍在進行而尚未完成或已終止的技術創新活動

2.19 約 2% 的工商機構在 2016 年有仍在進行中的技術創新活動，當中大型機構的相應比率最高（6%）。另一方面，極小部分的機構（0.3%）在 2016 年曾終止已開展的技術創新活動。（表 2.1、2.14 及 2.15）

Barriers to TI

2.17 Among those business establishments which had not undertaken TI activities in 2016, the major reason was “no need due to market or business conditions” (92%). (Table 2.12)

2.18 As for those business establishments which had undertaken TI activities in 2016, the most important factors (in terms of the percentage of establishments with high rating on the degree of impact of the factor) that inhibited their TI activities was “innovation costs too high” (27%). This was followed by “lack of funds within the establishment or enterprise group” (23%) and “Uncertain demand for innovation goods or services” (21%). (Table 2.13)

TI activities ongoing but not yet completed or TI activities abandoned

2.19 Around 2% of the business establishments had ongoing TI activities in 2016. Large establishments registered the highest percentage of establishments with ongoing TI activities (6%). On the other hand, only a meagre 0.3% of the establishments had abandoned their TI activities in 2016. (Tables 2.1, 2.14 and 2.15)

3 工商機構的非技術創新活動

Non-technological Innovation Activities in the Business Sector

工商機構進行非技術創新活動的普及情況（包括組織及市場推廣創新）

3.1 除技術創新活動外，一間機構亦可以從事與技術沒有直接關係的非技術創新活動，包括組織及市場推廣創新活動，以助提升其競爭力及業務表現。

3.2 組織創新是指一間工商機構在業務模式、工作架構或對外關係上實施嶄新的組織方法。市場推廣創新是指一間工商機構實行一種嶄新的市場推廣概念或策略，而這些新概念或策略與該機構現行的市場推廣方法截然不同，亦未嘗在該機構內採用。

3.3 在 2016 年，約 9% 的工商機構曾進行組織或市場推廣創新活動。香港的工商機構一向以迅速適應外在環境轉變見稱，故此工商機構進行非技術創新活動的比率普遍遠較技術創新活動的比率為高的情況是在預期之內。（表 3.1）

3.4 在 2016 年，進行組織或市場推廣創新活動最多的行業組別是資訊及通訊業（14%），其次是進出口貿易、批發及零售業以及住宿及膳食服務業（10%）。按機構規模分析，大型及中型機構相對較熱衷於進行非技術創新活動，比率分別為 11% 及 14%，而小型機構的比率則為 8%。（圖 3.1，表 3.1）

Diffusion of non-technological innovation (non-TI) activities in the business sector (including organisational and marketing innovation)

3.1 Apart from technological innovation (TI) activities, an establishment may engage in non-TI activities, comprising organisational and marketing innovation activities, that are not directly associated with technology but may help enhance its competitiveness and business performance.

3.2 Organisational innovation refers to the implementation of a new organisational method in a business establishment's business practices, workplace organisation or external relations that has not been previously used. As regards marketing innovation, it refers to the implementation of a new marketing concept or strategy which differs significantly from the existing marketing methods of a business establishment and has not been used before.

3.3 In 2016, about 9% of the business establishments had undertaken organisational or marketing innovation activities. The much higher diffusion rate of non-TI activities as compared with TI activities in the business sector is expected, given that the business establishments in Hong Kong are renowned for their quick adaptation to the changes in the external environment. (Table 3.1)

3.4 The industry grouping with the highest propensity to undertake organisational or marketing innovation activities was the information and communications sector (14%) in 2016, followed by the import/export, wholesale and retail trades, and accommodation and food services sectors (10%). Analysed by size of establishment, large (11%) and medium (14%) establishments were more keen to undertake non-TI activities than small establishments (8%). (Chart 3.1, Table 3.1)

圖 3.1 按在 2016 年是否有進行組織創新或市場推廣創新活動及選定行業組別／機構規模劃分的工商機構分布

Chart 3.1 Distribution of business establishments by whether having undertaken organisational innovation or marketing innovation activities in 2016 by selected industry grouping/size of establishment

按行業組別劃分

By industry grouping

製造業

Manufacturing

進出口貿易、批發及零售業以及住宿及膳食服務業
Import/export, wholesale and retail trades, and
accommodation and food services sectors

資訊及通訊業

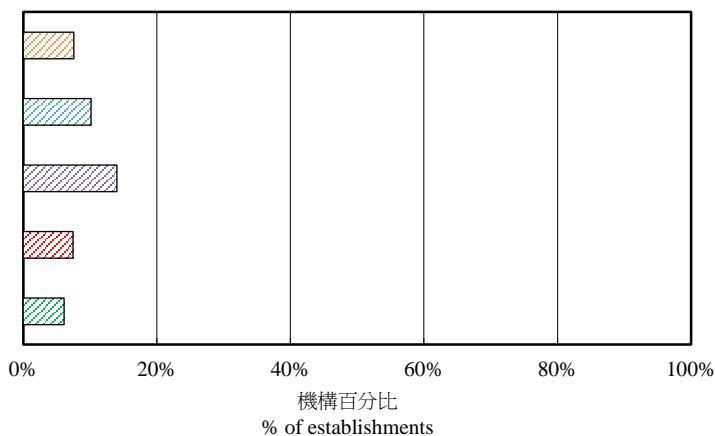
Information and communications

金融及保險、地產、專業及商用服務業

Financing and insurance, real estate, professional
and business services sectors

其他

Others



按機構規模劃分

By size of establishment

大型

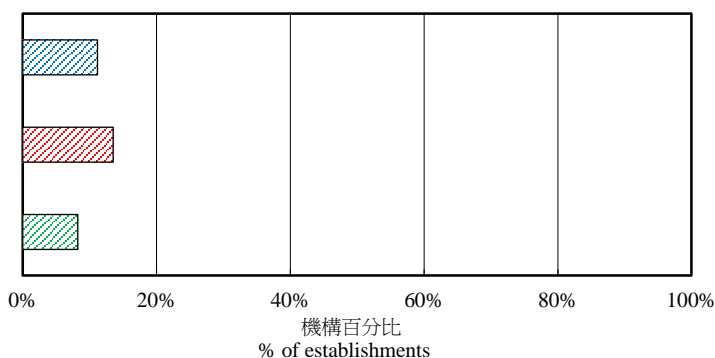
Large

中型

Medium

小型

Small



組織創新

3.5 約 3% 的工商機構在 2016 年曾進行組織創新活動。大型機構較中型及小型機構傾向於進行組織創新活動。大型機構曾進行組織創新活動的比率為 7%，而中型及小型機構的相應數字分別為 4% 和 3%。（表 3.1）

3.6 就組織創新類別而言，在曾進行組織創新的機構中，67% 採用新方法以建立與其他公司或公營機構的業務關係、61% 採用新方法以釐定員工的工作責任及決策權及 45% 採用新業務模式以訂定營運的程序。（表 3.2）

Organisational innovation

3.5 About 3% of the business establishments reported to have undertaken organisational innovation activities in 2016. Large establishments had a higher propensity to undertake organisational innovation activities than medium and small establishments. About 7% of large establishments were involved in the organisational innovation activities, as compared with 4% in medium establishments and 3% in small establishments. (Table 3.1)

3.6 As regards the type of organisational innovation, among the business establishments having undertaken organisational innovation, 67% adopted new methods of organising external relations with other firms or public institutions, 61% adopted new methods of organising work responsibilities and decision-making, and 45% adopted new business practices for organising procedures. (Table 3.2)

3.7 曾進行組織創新的工商機構中，約 34% 表示「改善貨品或服務質素」是進行有關創新項目的重要目的。此外，有 30% 表示「縮減回應顧客或供應商訴求所需的時間」是進行有關組織創新項目的重要目的。（表 3.3）

市場推廣創新

3.8 約 7% 的工商機構在 2016 年曾進行市場推廣創新活動。中型機構較大型及小型機構傾向於進行市場推廣創新活動。中型機構當中有 11% 曾進行市場推廣創新活動，而大型及小型機構的相應數字同為 7%。（表 3.1）

3.9 曾進行市場推廣創新項目的機構中，64% 採用新媒體或技術以推廣產品。（表 3.4）

3.10 曾進行市場推廣創新的工商機構中，約 39% 表示「為產品開拓新客源」是進行有關創新項目的重要目的。此外，有 33% 表示「擴大或維持市場佔有率」是進行有關市場推廣創新項目的重要目的。（表 3.5）

工商機構進行創新活動的整體情況

3.11 創新並非全然局限於技術的開發或使用。工商機構有時會改變業務策略，並往往結合技術改革，藉以增加競爭力。從較宏觀的角度把技術創新、組織創新及市場推廣創新活動整體計算，約 11% 的工商機構在 2016 年曾進行創新活動。（圖 3.2，表 3.6）

3.12 按行業組別分析，以整體創新活動計算，在 2016 年，從事資訊及通訊業的機構進行創新活動的百分比最高，達 28%。此外，中型機構進行創新活動的比率較高（17%）。（圖 3.2，表 3.6）

3.7 Around 34% of the business establishments that had undertaken organisational innovation considered that the objective of “improved quality of goods or services” was highly important for undertaking such innovation. Besides, 30% indicated that “reduced time to respond to customer or supplier needs” was a highly important objective. (Table 3.3)

Marketing innovation

3.8 About 7% of the business establishments reported to have undertaken marketing innovation activities in 2016. Medium establishments had a higher propensity to implement marketing innovation activities than large and small establishments. About 11% of medium establishments were involved in the marketing innovation activities, as compared with 7% in both large establishments and small establishments. (Table 3.1)

3.9 Among the business establishments having undertaken marketing innovation, 64% had adopted new media or techniques for product promotion. (Table 3.4)

3.10 About 39% of the business establishments having undertaken marketing innovation considered that the objective of “introduce products to new customer groups” was highly important for undertaking such innovation. Besides, 33% indicated that “increase or maintain market share” was a highly important objective. (Table 3.5)

Overall innovation activities in the business sector

3.11 Innovation is not necessarily confined to development or use of technology. Business establishments may change their business strategies to make themselves more competitive, often in conjunction with technological change. From a wider perspective by taking TI, organisational innovation and marketing innovation activities as a whole, some 11% of establishments had undertaken innovation activities in 2016. (Chart 3.2, Table 3.6)

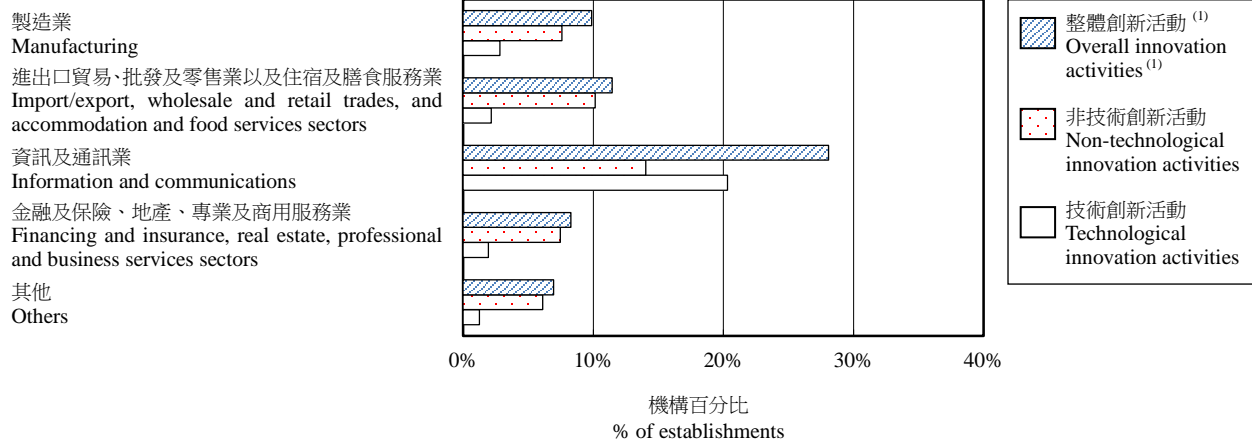
3.12 Analysed by industry grouping, and measured in terms of overall innovation activities, the information and communications sector had the highest percentage of establishments having undertaken innovation activities in 2016, at 28%. Besides, the proportion undertaking innovation activities was higher for medium establishments (17%). (Chart 3.2, Table 3.6)

圖 3.2 按在 2016 年是否有進行技術或非技術創新活動、選定行業組別／機構規模及創新活動類別劃分的工商機構分布

Chart 3.2 Distribution of business establishments by whether having undertaken technological or non-technological innovation activities in 2016 by selected industry grouping/size of establishment by type of innovation activity

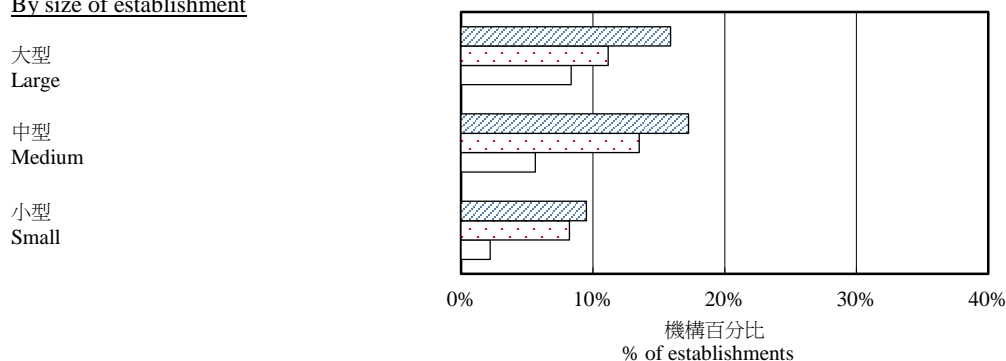
按行業組別劃分

By industry grouping



按機構規模劃分

By size of establishment



註釋: (1) 數字代表有進行技術或非技術創新活動或兩者皆有進行的機構的百分比。

Note: (1) The figures refer to the % of establishments that had undertaken technological or non-technological innovation activities or both.

4 政府對研究及發展活動與創新活動的支援

Government's Support for Research and Development Activities and Innovation Activities

4.1 發展科學與科技是取得技術突破的關鍵，亦有助促進經濟增長及改善生活質素。香港特別行政區政府一直不斷投放資源支援各類科研工作，包括為卓越科學領域打穩根基的基礎研究，以至切合廣大市民的日常生活和工商界需要的應用研究及發展（研發）及創新活動。

基礎研究

4.2 基礎研究主要由大學教育資助委員會（教資會）資助的大學負責進行。於 2016/17 財政年度，各大學匯報的研究開支總額達 102.71 億港元。這筆大學研究經費主要來自教資會和研究資助局（研資局）提供的補助金，以及政府及其相關機構所提供的資助。政府的撥款承擔額自 2004/05 年度起不斷增加。在 2016/17 年度，各大學的研究總開支中約有 83%（即 84.86 億港元）由政府資助，較上年度增加 7%。

4.1 Development in science and technology is a key to technological breakthroughs. It also fuels economic growth and improves quality of life. The Government of Hong Kong Special Administrative Region (HKSAR) has made continued investments in supporting the whole spectrum of research capabilities, from basic research for building the foundation for scientific excellence, to applied research and development (R&D) and innovation activities with close interface with the daily lives of our citizens as well as the needs of the business community.

Basic research

4.2 Basic research is principally undertaken by the University Grants Committee (UGC)-funded universities. The aggregate research expenditure in the financial year 2016/17 reported by the universities amounted to HK\$10,271 million. Of this amount, the grants from UGC and Research Grants Council (RGC) together with other financial support from the Government and Government-related organisations constituted the bulk of research expenditure for the universities. Funding commitment from the Government has been on a rising trend since 2004/05. In 2016/17, about 83% of the total research expenditure of the universities came from the Government which amounted to HK\$8,486 million representing 7% growth over the previous year.

按資金來源劃分的 2012/13 年度至 2016/17 年度教資會資助的大學的研究開支

Research expenditure of UGC-funded universities by source of funds, 2012/13 to 2016/17

資金來源（百萬港元） Source of funds (HK\$ million)	2012/13	2013/14	2014/15	2015/16	2016/17
香港特區政府 HKSAR Government	6,192.1 (82%)	6,558.9 (82%)	7,186.2 (83%)	7,943.0 (83%)	8,485.8 (83%)
教資會 UGC	4,962.0 (65%)	5,175.2 (65%)	5,618.2 (65%)	6,146.9 (64%)	6,547.0 (64%)
研資局 RGC	702.1 (9%)	755.9 (9%)	843.4 (10%)	945.2 (10%)	998.3 (10%)
政府及其相關機構 Government & Government-related organisations	528.0 (7%)	627.7 (8%)	724.5 (8%)	851.0 (9%)	940.5 (9%)
香港私人資金 Hong Kong private	1,216.0 (16%)	1,253.3 (16%)	1,256.2 (15%)	1,418.5 (15%)	1,569.2 (15%)
香港以外 Non-Hong Kong	168.2 (2%)	172.0 (2%)	189.4 (2%)	189.3 (2%)	215.9 (2%)
總計 Total	7,576.3 (100%)	7,984.2 (100%)	8,631.8 (100%)	9,550.8 (100%)	10,270.9 (100%)

註釋：括號內的數字顯示金額佔該年度總額的百分比。

數字只包括教資會資助的大學。這些大學的財政年度由每年 7 月至翌年 6 月。

Notes: Figures in brackets represent the percentages in respect of total in the respective year.

Figures cover only the UGC-funded universities. The financial year of these universities starts in July of a year and ends in June of the following year.

應用研發及創新活動

4.3 政府致力推動創新及科技的發展，目標是締造一個充滿活力的生態系統，讓官、產、學、研各界別，能在具備優越軟硬件支援的有利環境下合作。

4.4 在硬件方面，香港科學園（科學園）和數碼港是主要的科技基礎設施，為以科技為本的公司提供一站式的基礎設施支援服務。

4.5 科學園共分三期發展。第1期造價達29.07億港元，由政府全資興建，於2004年完成。第2期造價39.14億港元，當中約62%（即24.35億港元）由政府以注資方式支付，餘額由政府貸款及香港科技園公司（科技園公司）出資支付，第2期於2008年大致完成。第3期造價約49億港元，當中約30%由政府以注資方式支付，餘額由政府貸款、政府提供擔保的商業貸款及科技園公司內部資源支付。第3期於2011年動工，首三幢大樓已於2014年3月落成，餘下兩幢大樓亦已於2016年4月竣工。第3期全面落成後，科學園總樓面面積已增至330 000平方米。截至2017年3月，科學園的整體租用率為81%，超過600家夥伴企業進駐，提供約13 000個就業機會。

Applied R&D and innovation activities

4.3 The Government attaches great importance in promoting innovation and technology development. The goal is to create a vibrant ecosystem for all key players including the Government, industry, academic and research sectors to collaborate in a favourable environment with excellent software and hardware support.

4.4 On the hardware front, the Hong Kong Science Park (Science Park) and the Cyberport are the major technology infrastructure. They provide a one-stop infrastructural support services to technology-based companies.

4.5 Science Park was developed in three phases. Phase 1, with a development cost of HK\$2,907 million and fully financed by the Government, was completed in 2004. For Phase 2, the development cost was HK\$3,914 million and about 62% (HK\$2,435 million) was financed by the Government in the form of equity injection. The rest was financed by Government loan and the Hong Kong Science and Technology Parks Corporation (HKSTPC). It was largely completed in 2008. The development cost of Phase 3 was around HK\$4.9 billion, of which about 30% was financed by the Government in the form of equity injection. The rest was financed by Government loan, commercial loan guaranteed by the Government and internal resources of HKSTPC. The development of Phase 3 commenced in 2011. The first three buildings were completed in March 2014, while the remaining two buildings were also completed in April 2016. Upon full completion of Phase 3, the gross floor area of Science Park has increased to 330 000 square metres. The overall occupancy rate of Science Park was 81% as at March 2017. There were over 600 partner companies, providing about 13 000 job opportunities.

4.6 政府採用公私營合作模式發展數碼港計劃。該計劃包括數碼港部分及附屬的住宅發展部分。政府就數碼港計劃負責撥地，以及提供道路、污水處理等基本的基礎設施。政府在整項計劃上的出資額相等於 79.3 億港元，包括提供基本基礎設施的成本約 11 億港元。數碼港部分已於 2004 年完成，包括四座寫字樓、一家酒店和一個商場。四座寫字樓共提供 94 700 平方米的辦公空間，截至 2017 年 3 月，寫字樓租用率為 93%，共有 505 個租戶，它們共聘用約 5 700 人。

4.7 從事應用研發的公營機構在創新的生態體系中發揮重要角色。政府在 2016-17 財政年度撥出 4.76 億港元資助這些機構營運，以期提升工商界在創新及科技方面的能力。

4.8 在軟件方面，創新及科技基金於 2016-17 財政年度撥款共 9.88 億港元，資助 1 860 個應用研發項目，包括進行中的項目及於該年度獲批的項目。立法會財務委員會在 2016 年 6 月批准向創新及科技基金注資 20 億港元作為資本，透過其產生的投資收入，成立院校中游研發計劃，以及在 2016 年 7 月批准再向創新及科技基金注資 20 億港元，以資助創科創投基金。

4.9 政府在 2016 年 12 月推出院校中游研發計劃，鼓勵教資會資助的大學與世界各地頂尖的科研機構合作，在重點科技領域進行更多跨學科及可轉化作應用的研發工作，令更多研究成果可進一步供下游研究或產品開發。每個項目的資助上限為 500 萬港元。項目如涉及多門學科或由多所院校／科研機構合作，將獲優先考慮，每個項目的資助上限亦會提高至 1,000 萬港元。

4.6 The Government developed the Cyberport Project under a public-private partnership model. The Cyberport Project comprises a Cyberport Portion and an ancillary Residential Portion. The Government is to contribute the land and provide the basic infrastructure, such as roads and sewage treatment, for the Cyberport Project. The capital contribution by the Government is equivalent to HK\$7.93 billion, including the estimated cost of HK\$1.1 billion for the basic infrastructure. The Cyberport Portion was completed in 2004. It has four office buildings, a hotel and an arcade. Four office buildings provide a total of 94 700 square metres office space. As of March 2017, the occupancy rate of the office buildings was 93%. There were 505 tenants, employing a total of around 5 700 people.

4.7 Public funded organisations engaged in applied R&D have played an important role in the innovation ecosystem. In the financial year 2016-17, the Government committed a sum of HK\$476 million to support their operations aiming to enhance the innovation and technological capability of the business community.

4.8 On the software side, the Innovation and Technology Fund (ITF) made a total of HK\$988 million funding support in the financial year 2016-17 for 1 860 applied R&D projects including the ongoing projects plus those that were approved in the report period. The Legislative Council (LegCo) Finance Committee approved the injection of HK\$2 billion into the ITF as an endowment capital to generate investment income to establish the Midstream Research Programme for Universities (MRP) in June 2016; and approved another HK\$2 billion into the ITF for financing the Innovation and Technology Venture Fund in July 2016.

4.9 The MRP was launched in December 2016 by the Government to encourage universities funded by UGC to collaborate with leading research institutions worldwide to conduct more inter-disciplinary and translational R&D work in focused technology areas, such that more research outcomes could be made available for further downstream research work or product development. Funding ceiling for each project is HK\$5 million. Projects involving collaboration across multiple disciplines, universities or research institutions will be accorded priority and a higher funding ceiling of HK\$10 million per project.

4.10 為鼓勵私營機構增加對研發活動的投資，以及與指定本地公營科研機構⁽¹⁾加強合作，政府於 2010 年 4 月推出投資研發現金回贈計劃。在該計劃下，獲創新及科技基金資助或與指定本地公營科研機構合作進行應用研發項目的企業，可就合資格的研發開支享有現金回贈。自 2016 年 2 月起，合資格研發開支的現金回贈水平已增加至 40%。於 2016-17 財政年度，該計劃共批出 285 宗申請，涉及現金回贈總額超過 7,200 萬港元。

4.11 政府於 2016 年 11 月在創新及科技基金下推出 5 億港元的科技券計劃，資助本地中小企使用科技服務及方案，以提高生產力或升級轉型。政府會向每家合資格的中小企提供最多 20 萬港元資助，進行最多三個項目。

4.12 國家重點實驗室夥伴實驗室（夥伴實驗室）是在特定科技範疇有卓越研究表現的本地實驗室，獲國家科學技術部（科技部）認可為內地相應國家重點實驗室的研發夥伴。這些夥伴實驗室擔當着高水平研發、匯聚及培育優秀研究人員以及促進交流的角色。本港現時共有 16 間夥伴實驗室。創新及科技基金批出撥款承擔額共 8,000 萬港元，以資助夥伴實驗室於 2016-17 財政年度的研發相關開支。

4.10 To encourage more private sector investment in R&D activities and collaboration with designated local public research institutions⁽¹⁾, the R&D Cash Rebate Scheme was launched by the Government in April 2010 under which enterprises conducting applied R&D projects with the support of the ITF or in partnership with designated local public research institutions would enjoy a cash rebate for the qualified R&D expenditure. Since February 2016, the level of cash rebate for qualified R&D expenditure has been increased to 40%. In the financial year 2016-17, the Scheme approved 285 applications, with a sum of cash rebate amounted to over HK\$72 million.

4.11 The HK\$500 million Technology Voucher Programme was launched under the ITF in November 2016 by the Government to subsidise local small and medium enterprises (SMEs) in using technological services and solutions to improve productivity, or upgrade or transform their business processes. Funding up to HK\$200,000 will be provided for each eligible SME to carry out a maximum of 3 projects.

4.12 A Partner State Key Laboratory (PSKL) is a laboratory in Hong Kong recognised by the Ministry of Science and Technology (MOST) as an R&D partner of a corresponding Mainland's State Key Laboratory (SKL) for its research excellence in a particular technology area. PSKLs serve as a base for conducting quality R&D, congregating and nurturing outstanding researchers, as well as facilitating exchanges. There are currently 16 PSKLs in Hong Kong. The ITF committed a total of HK\$80 million to support R&D related expenditure incurred by the PSKLs in the financial year 2016-17.

(1) 指定本地公營科研機構包括：

- (a) 本地大學：
 - 香港中文大學
 - 香港城市大學
 - 香港浸會大學
 - 香港理工大學
 - 香港科技大學
 - 香港大學
- (b) 創新及科技基金下成立的研發中心：
 - 香港汽車零部件研發中心
 - 香港物流及供應鏈管理應用技術研發中心
 - 香港紡織及成衣研發中心有限公司
 - 納米及先進材料研發院有限公司
 - 香港應用科技研究院有限公司（香港資訊及通訊技術研發中心）
- (c) 香港生產力促進局
- (d) 職業訓練局
- (e) 香港生物科技研究院

(1) Designated local public research institutions include:

- (a) Local universities:
 - The Chinese University of Hong Kong
 - City University of Hong Kong
 - Hong Kong Baptist University
 - The Hong Kong Polytechnic University
 - The Hong Kong University of Science and Technology
 - The University of Hong Kong
- (b) R&D Centres set up under the ITF:
 - Automotive Parts and Accessory Systems R&D Centre
 - Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies
 - The Hong Kong Research Institute of Textiles and Apparel Limited
 - Nano and Advanced Materials Institute Limited
 - Hong Kong Applied Science and Technology Research Institute Company Limited (Hong Kong R&D Centre for Information and Communications Technologies)
- (c) Hong Kong Productivity Council
- (d) Vocational Training Council
- (e) Hong Kong Institute of Biotechnology

4.13 國家工程技術研究中心由科技部負責管理，是推動內地基礎及應用科技研發的重要措施。獲科技部批准成為國家工程技術研究中心的科研機構，具有雄厚的研發實力，在內地以至國際上都在其專注的技術領域佔據領先地位。本港現時共有六間國家工程技術研究中心香港分中心（香港分中心），當中五間是在 2015 年 10 月獲批成立。創新及科技基金批出撥款承擔額共 3,000 萬港元，以資助香港分中心於 2016-17 財政年度的研發相關開支。

4.14 本港的大專院校仍然是推動研發成果商品化的重要對象。六所本地大學⁽²⁾已各自成立技術轉移處，從事技術轉移工作。為提升它們的能力，政府自 2013-14 年度起透過創新及科技基金，向每所大學提供每年最高 400 萬港元的資助。立法會工商事務委員會（事務委員會）在 2016 年 1 月支持政府繼續向本地大學的技術轉移處提供資助，為期三年（即直至 2018-19 年度為止）。創新及科技基金批出撥款承擔額共 2,400 萬港元，以資助各技術轉移處於 2016-17 財政年度的技術轉移相關開支。

4.15 政府於 2014-15 年度向六所本地大學⁽²⁾推出大學科技初創企業資助計劃，鼓勵大學團隊成立科技初創企業，將其研發成果商品化。事務委員會在 2016 年 12 月支持政府繼續推行計劃，為期三年（即直至 2019-20 年度為止）。每所大學每年可獲最高 400 萬港元的資助。在 2016-17 財政年度，該計劃共資助 67 間科技初創企業，所涉的撥款承擔額約 2,400 萬港元。

(2) 這些大學包括香港城市大學、香港浸會大學、香港中文大學、香港理工大學、香港科技大學及香港大學。

4.13 Chinese National Engineering Research Centre(s) (CNERC(s)) are under the auspices of MOST and serve as a major initiative in driving basic as well as applied technological R&D in the Mainland. Research institutions approved by MOST as CNERCs have strong R&D capabilities and enjoy leading positions in their chosen areas of expertise both in the Mainland and internationally. There are currently six Hong Kong Branches of CNERCs, five of which were approved to be set up in October 2015. The ITF committed a total of HK\$30 million to support R&D related expenditure incurred by the Hong Kong Branches of CNERCs in the financial year 2016-17.

4.14 Tertiary institutions in Hong Kong remain to be important targets for promoting commercialisation of R&D results. Six local universities⁽²⁾ have set up their Technology Transfer Offices (TTOs) to engage in technology transfer activity. To enhance their capabilities, the Government provides an annual funding of up to HK\$4 million to each university through the ITF from 2013-14 onwards. In January 2016, the LegCo Panel on Commerce and Industry (the Panel) supported the Government to continue the funding support to TTOs of local universities for another three years up to 2018-19. The ITF committed a total of HK\$24 million to technology transfer related expenditure incurred by the TTOs in the financial year 2016-17.

4.15 The Technology Start-up Support Scheme for Universities (TSSSU) was launched in 2014-15 by the Government to encourage the teams of six local universities⁽²⁾ to start technology businesses and commercialise their R&D results. In December 2016, the Panel supported the Government to continue TSSSU for another three years up to 2019-20. An annual funding of up to HK\$4 million is provided to each university. In the financial year 2016-17, 67 technology start-ups got confirmation of TSSSU funding. A total amount of approximately HK\$24 million was committed.

(2) These universities are City University of Hong Kong, Hong Kong Baptist University, The Chinese University of Hong Kong, The Hong Kong Polytechnic University, The Hong Kong University of Science and Technology and The University of Hong Kong.

4.16 企業支援計劃是創新及科技基金下的其中一個資助計劃，為本地私營機構提供財政支援，以供它們進行內部研發項目。在香港註冊的公司，不論其規模大小，均可提交申請。在該計劃下，每個獲批項目的資助以等額出資方式批出，資助上限為 1,000 萬港元。在 2016-17 財政年度，創新及科技基金批出撥款承擔額約 3,900 萬港元資助該計劃的研發項目。

4.16 The Enterprise Support Scheme (ESS) is one of the funding programmes under the ITF. It provides financial support for local companies in the private sector to undertake in-house R&D projects. Hong Kong registered companies, regardless of their sizes, can apply. Under the ESS, funding of up to HK\$10 million for each approved project will be provided on a dollar-for-dollar matching basis. In the financial year 2016-17, the ITF committed a total amount of approximately HK\$39 million to support R&D projects funded by the ESS.

4.17 政府支援及不時舉辦推廣活動，以推動和鼓勵業界以至社會大眾及年輕一代等各界別，更多參與研發及創新活動。在 2016-17 財政年度，創新科技署撥出約 4,800 萬港元進行這些推廣活動。

4.17 The Government supports and organises promotional activities to facilitate and encourage more participation in R&D and innovation activities by various sectors from the industry to the general community and young generation. In the financial year 2016-17, the Innovation and Technology Commission (ITC) committed some HK\$48 million to these promotional activities.

4.18 創新科技署在 2016-17 財政年度撥款共 15.97 億港元，用以為應用研發及創新活動提供支援。

4.18 ITC's funding support for applied R&D and innovation activities amounted to a sum of HK\$1,597 million in the financial year 2016-17.

創新科技署用以推動應用研發及創新活動的撥款資助
ITC funding support for fostering applied R&D and innovation activities

創新科技署的撥款資助 (百萬港元) ITC funding support (HK\$ million)	2012-13	2013-14	2014-15	2015-16	2016-17
應用研發項目 (進行中及獲批項目的數目) ⁽³⁾ Applied R&D projects (no. of ongoing and approved projects) ⁽³⁾	574.5 (1 236)	677.3 (1 361)	766.2 (1 628)	862.6 (1 787)	988.1 (1 860)
專利申請資助計劃 Patent Application Grants	19.8	13.4	16.6	33.0	36.0
公營科技支援機構的營運 Operation of public technology support organisations	425.0	421.2	441.6	469.1	476.2
技術轉移及科技創業 ⁽⁴⁾ Technology Transfer and Technopreneurship ⁽⁴⁾	—	19.4	41.1	45.0	48.0
推廣創新及科技文化 Promotion of innovation and technology culture	31.0	41.4	42.0	28.5	48.3
總計⁽⁴⁾ Total⁽⁴⁾	1,050.5	1,172.8	1,307.5	1,438.2	1,596.6

註釋： (3) 2012-13 至 2015-16 年度的數字已經修訂。

Notes : (3) Figures for the period from 2012-13 to 2015-16 have been revised.

(4) 2015-16 年度的數字已經修訂。

(4) Figures for the period 2015-16 have been revised.

括號內的數字顯示該年度進行中及獲批研發項目的數目。

Figures in brackets represent the number of research projects that were ongoing plus those that were approved in the report period.

表 1.1 按進行機構類別劃分的本地研究及發展（研發）總開支及研發人員的統計數字
Table 1.1 Statistics on gross domestic expenditure on research and development (R&D) and R&D personnel by performing sector

機構類別 Sector	年度 Year	本地研發總開支（百萬港元） Gross domestic expenditure on R&D (HK\$ million)			研發人員數目（相當於全日制的人數） No. of R&D personnel (in full-time equivalent)	
工商機構 Business	2013	7,017.4	(44.9%)	[0.33%]	11 443	(43.9%)
	2014	7,437.5	(44.5%)	[0.33%]	12 146	(44.4%)
	2015	7,993.7	(43.8%)	[0.33%] @	12 217	(43.4%)
	2016	8,528.1	(43.3%)	[0.34%] @	12 318	(42.4%)
高等教育機構 Higher education	2013	7,984.2	(51.1%)	[0.37%]	14 013	(53.8%)
	2014	8,631.8	(51.6%)	[0.38%]	14 584	(53.3%)
	2015	9,550.8	(52.3%)	[0.40%] @	15 247	(54.1%)
	2016	10,270.9	(52.1%)	[0.41%] @	15 899	(54.7%)
政府機構 Government	2013	611.6	(3.9%)	[0.03%]	588	(2.3%)
	2014	658.0	(3.9%)	[0.03%]	648	(2.4%)
	2015	726.2	(4.0%)	[0.03%] @	701	(2.5%)
	2016	914.1	(4.6%)	[0.04%] @	830	(2.9%)
總計 Total	2013	15,613.3	(100.0%)	[0.73%]	26 045	(100.0%)
	2014	16,727.3	(100.0%)	[0.74%]	27 378	(100.0%)
	2015	18,270.7	(100.0%)	[0.76%] @	28 165	(100.0%)
	2016	19,713.1	(100.0%)	[0.79%] @	29 047	(100.0%)

註釋：圓括號內數字顯示佔總計的百分比。

Notes: Figures in round brackets represent the percentages in respect of total.

方括號內數字顯示研發開支相對本地生產總值的比率。本地生產總值是根據2017年11月10日發表，以開支面編製的以當時市價計算的本地生產總值估算。

Figures in square brackets represent the ratios to Gross Domestic Product (GDP). The GDP estimates are based on expenditure-based GDP estimates at current market prices released on 10 November 2017.

表 1.2 按進行機構類別及研發開支類別（即經常和資本開支）劃分的本地研發總開支
Table 1.2 Gross domestic expenditure on R&D by performing sector by type of R&D expenditure (i.e. current and capital expenditure)

（百萬港元）
(HK\$ million)

	年度 Year	經常開支 Current expenditure		資本開支 Capital expenditure		總計 Total	
機構類別 Sector							
工商機構 Business	2013	6,358.5	(90.6%)	658.9	(9.4%)	7,017.4	(100.0%)
	2014	6,766.0	(91.0%)	671.5	(9.0%)	7,437.5	(100.0%)
	2015	7,065.9	(88.4%)	927.8	(11.6%)	7,993.7	(100.0%)
	2016	7,234.7	(84.8%)	1,293.4	(15.2%)	8,528.1	(100.0%)
高等教育機構 Higher education	2013	7,629.5	(95.6%)	354.8	(4.4%)	7,984.2	(100.0%)
	2014	8,207.0	(95.1%)	424.9	(4.9%)	8,631.8	(100.0%)
	2015	8,886.1	(93.0%)	664.6	(7.0%)	9,550.8	(100.0%)
	2016	9,739.6	(94.8%)	531.3	(5.2%)	10,270.9	(100.0%)
政府機構 Government	2013	571.4	(93.4%)	40.2	(6.6%)	611.6	(100.0%)
	2014	613.6	(93.3%)	44.4	(6.7%)	658.0	(100.0%)
	2015	678.2	(93.4%)	48.0	(6.6%)	726.2	(100.0%)
	2016	849.3	(92.9%)	64.8	(7.1%)	914.1	(100.0%)
總計 Total	2013	14,559.3	(93.2%)	1,053.9	(6.8%)	15,613.3	(100.0%)
	2014	15,586.5	(93.2%)	1,140.7	(6.8%)	16,727.3	(100.0%)
	2015	16,630.3	(91.0%)	1,640.4	(9.0%)	18,270.7	(100.0%)
	2016	17,823.6	(90.4%)	1,889.5	(9.6%)	19,713.1	(100.0%)

註釋：括號內數字顯示佔總計的百分比。

Note: Figures in brackets represent the percentages in respect of total.

表 1.3 按資金來源劃分的本地研發總開支
Table 1.3 Gross domestic expenditure on R&D by source of funds

資金來源 Source of funds	本地研發總開支（百萬港元） Gross domestic expenditure on R&D (HK\$ million)			
	2013	2014	2015	2016
本地機構 Local parties				
工商機構 Business	7,413.2 (47.5%)	7,747.3 (46.3%)	8,642.0 (47.3%)	9,641.3 (48.9%)
政府機構 Government	7,121.0 (45.6%)	7,785.8 (46.5%)	8,601.8 (47.1%)	9,298.4 (47.2%)
高等教育機構 Higher education	2.6 (\$)	8.0 (\$)	3.9 (\$)	6.6 (\$)
其他 Others	15.8 (0.1%)	13.3 (0.1%)	16.1 (0.1%)	0.3 (\$)
香港以外機構 Parties outside Hong Kong	1,060.6 (6.8%)	1,173.0 (7.0%)	1,007.0 (5.5%)	766.6 (3.9%)
總計 Total	15,613.3 (100.0%)	16,727.3 (100.0%)	18,270.7 (100.0%)	19,713.1 (100.0%)

註釋：括號內數字顯示佔總計的百分比。

Note: Figures in brackets represent the percentages in respect of total.

表 1.4 按進行機構類別及職能類別劃分的研發人員數目（相當於全日制的人數）
Table 1.4 Number of R&D personnel (in full-time equivalent) by performing sector by type of function

機構類別 Sector	年度 Year	職能類別 Type of function						總計 Total	
		研究員 Researchers		技術員 Technicians		其他輔助人員 Other supporting staff			
工商機構 Business	2013	8 962	(78.3%)	1 571	(13.7%)	910	(8.0%)	11 443	(100.0%)
	2014	9 738	(80.2%)	1 487	(12.2%)	921	(7.6%)	12 146	(100.0%)
	2015	9 000	(73.7%)	2 125	(17.4%)	1 092	(8.9%)	12 217	(100.0%)
	2016	9 446	(76.7%)	1 775	(14.4%)	1 097	(8.9%)	12 318	(100.0%)
高等教育機構 Higher education	2013	13 011	(92.9%)	447	(3.2%)	554	(4.0%)	14 013	(100.0%)
	2014	13 575	(93.1%)	417	(2.9%)	593	(4.1%)	14 584	(100.0%)
	2015	14 112	(92.6%)	482	(3.2%)	653	(4.3%)	15 247	(100.0%)
	2016	14 757	(92.8%)	491	(3.1%)	651	(4.1%)	15 899	(100.0%)
政府機構 Government	2013	493	(83.7%)	62	(10.5%)	34	(5.8%)	588	(100.0%)
	2014	519	(80.0%)	81	(12.5%)	48	(7.5%)	648	(100.0%)
	2015	563	(80.3%)	84	(12.0%)	53	(7.6%)	701	(100.0%)
	2016	662	(79.7%)	85	(10.3%)	83	(10.0%)	830	(100.0%)
總計 Total	2013	22 466	(86.3%)	2 080	(8.0%)	1 499	(5.8%)	26 045	(100.0%)
	2014	23 831	(87.0%)	1 985	(7.2%)	1 563	(5.7%)	27 378	(100.0%)
	2015	23 675	(84.1%)	2 692	(9.6%)	1 799	(6.4%)	28 165	(100.0%)
	2016	24 865	(85.6%)	2 351	(8.1%)	1 831	(6.3%)	29 047	(100.0%)

註釋：括號內數字顯示佔總計的百分比。

Note: Figures in brackets represent the percentages in respect of total.

表 1.5 按選定行業組別／機構規模劃分的2015及2016年工商機構的研發活動主要統計數字
Table 1.5 Key statistics on R&D activities in the business sector in 2015 and 2016 by selected industry grouping/size of establishment

	年度 Year	機構數目 總計 Total no. of establishments	有進行研發活動 的機構數目 ⁽¹⁾ No. of establishments having undertaken R&D activities ⁽¹⁾	內部研發活動總開支 ⁽²⁾ (百萬港元) Total expenditure on in-house R&D activities ⁽²⁾ (HK\$ million)	研發人員數目 (相當於全日制的人數) No. of R&D personnel (in full-time equivalent)
按行業組別劃分 By industry grouping					
製造業 Manufacturing	2015	9 166	150 (3.9%)	269.9 (3.4%)	407 (3.3%)
	2016	9 238	163 (4.1%)	278.2 (3.3%)	441 (3.6%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	2015	149 982	1 789 (46.1%)	2,963.9 (37.1%)	3 911 (32.0%)
	2016	136 538	1 895 (48.1%)	3,389.7 (39.7%)	4 050 (32.9%)
資訊及通訊業 Information and communications	2015	10 625	1 074 (27.7%)	2,662.3 (33.3%)	5 206 (42.6%)
	2016	11 090	1 094 (27.7%)	2,662.6 (31.2%)	5 258 (42.7%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	2015	66 823	679 (17.5%)	1,748.8 (21.9%)	2 143 (17.5%)
	2016	73 990	640 (16.2%)	1,868.0 (21.9%)	2 178 (17.7%)
其他 Others	2015	42 915	193 (5.0%)	348.8 (4.4%)	551 (4.5%)
	2016	43 022	151 (3.8%)	329.6 (3.9%)	391 (3.2%)
總計 Total	2015	279 511	3 885 (100.0%)	7,993.7 (100.0%)	12 217 (100.0%)
	2016	273 877	3 942 (100.0%)	8,528.1 (100.0%)	12 318 (100.0%)
按機構規模劃分 By size of establishment					
大型 Large	2015	5 922	280 (7.2%)	3,943.5 (49.3%)	4 642 (38.0%)
	2016	6 243	282 (7.2%)	4,297.3 (50.4%)	4 372 (35.5%)
中型 Medium	2015	31 169	947 (24.4%)	2,323.5 (29.1%)	3 812 (31.2%)
	2016	29 710	1 034 (26.2%)	2,609.0 (30.6%)	4 093 (33.2%)
小型 Small	2015	242 420	2 658 (68.4%)	1,726.8 (21.6%)	3 763 (30.8%)
	2016	237 923	2 626 (66.6%)	1,621.8 (19.0%)	3 853 (31.3%)
總計 Total	2015	279 511	3 885 (100.0%)	7,993.7 (100.0%)	12 217 (100.0%)
	2016	273 877	3 942 (100.0%)	8,528.1 (100.0%)	12 318 (100.0%)

註釋：(1) 數字包括從事內部研發活動的機構及把研發活動外判的機構。

Notes: (1) Figures include establishments with in-house R&D activities and establishments with R&D activities contracted out to other parties.

(2) 數字包括本地機構為本身及／或為其他機構進行的內部研發活動開支。

(2) Figures include expenditure on in-house R&D activities conducted by a local party for itself and/or for other organisations.

表 1.6 按研發開支類別（即經常和資本開支）及選定行業組別／機構規模劃分的2016年工商機構的內部研發活動總開支
Table 1.6 Total expenditure on in-house R&D activities in the business sector in 2016 by type of R&D expenditure (i.e. current and capital expenditure) by selected industry grouping/size of establishment

	(百萬港元) (HK\$ million)		
	內部研發活動經常開支 Current expenditure on in-house R&D activities	內部研發活動資本開支 Capital expenditure on in-house R&D activities	內部研發活動總開支 ⁽¹⁾ Total expenditure on in-house R&D activities ⁽¹⁾
按行業組別劃分			
By industry grouping			
製造業	257.3	20.9	278.2
Manufacturing	(92.5%)	(7.5%)	(100.0%)
進出口貿易、批發及零售業以及住宿及膳食服務業	2,928.5	461.2	3,389.7
Import/export, wholesale and retail trades, and accommodation and food services sectors	(86.4%)	(13.6%)	(100.0%)
資訊及通訊業	2,176.8	485.8	2,662.6
Information and communications	(81.8%)	(18.2%)	(100.0%)
金融及保險、地產、專業及商用服務業	1,642.3	225.7	1,868.0
Financing and insurance, real estate, professional and business services sectors	(87.9%)	(12.1%)	(100.0%)
其他	229.8	99.8	329.6
Others	(69.7%)	(30.3%)	(100.0%)
總計	7,234.7	1,293.4	8,528.1
Total	(84.8%)	(15.2%)	(100.0%)
按機構規模劃分			
By size of establishment			
大型	3,469.6	827.7	4,297.3
Large	(80.7%)	(19.3%)	(100.0%)
中型	2,298.5	310.4	2,609.0
Medium	(88.1%)	(11.9%)	(100.0%)
小型	1,466.6	155.2	1,621.8
Small	(90.4%)	(9.6%)	(100.0%)
總計	7,234.7	1,293.4	8,528.1
Total	(84.8%)	(15.2%)	(100.0%)

註釋：(1) 數字包括本地機構為本身及／或為其他機構進行的內部研發活動開支。

Note: (1) Figures include expenditure on in-house R&D activities conducted by a local party for itself and/or for other organisations.

表 1.7 按研究類別及選定行業組別／機構規模劃分的2016年工商機構的內部研發活動總開支
Table 1.7 Total expenditure on in-house R&D activities in the business sector in 2016 by type of research by selected industry grouping/size of establishment

(百萬港元)
(HK\$ million)

	研究類別 Type of research				總計 ⁽¹⁾ Total ⁽¹⁾
	基礎研究 Basic research	應用研究 Applied research	實驗發展 Experimental development		
			產品發展 Product development	程序發展 Process development	
按行業組別劃分 By industry grouping					
製造業 Manufacturing	***	26.7 (9.6%)	222.3 (79.9%)	***	278.2 (100.0%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	11.4 (0.3%)	282.7 (8.3%)	2,938.9 (86.7%)	156.7 (4.6%)	3,389.7 (100.0%)
資訊及通訊業 Information and communications	3.8 (0.1%)	907.4 (34.1%)	1,469.9 (55.2%)	281.6 (10.6%)	2,662.6 (100.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	15.6 (0.8%)	405.1 (21.7%)	1,332.8 (71.3%)	114.6 (6.1%)	1,868.0 (100.0%)
其他 Others	***	259.3 (78.7%)	49.5 (15.0%)	***	329.6 (100.0%)
總計 Total	36.6 (0.4%)	1,881.2 (22.1%)	6,013.3 (70.5%)	597.1 (7.0%)	8,528.1 (100.0%)
按機構規模劃分 By size of establishment					
大型 Large	6.8 (0.2%)	948.5 (22.1%)	3,095.6 (72.0%)	246.4 (5.7%)	4,297.3 (100.0%)
中型 Medium	9.6 (0.4%)	570.6 (21.9%)	1,767.1 (67.7%)	261.7 (10.0%)	2,609.0 (100.0%)
小型 Small	20.2 (1.2%)	362.1 (22.3%)	1,150.6 (70.9%)	88.9 (5.5%)	1,621.8 (100.0%)
總計 Total	36.6 (0.4%)	1,881.2 (22.1%)	6,013.3 (70.5%)	597.1 (7.0%)	8,528.1 (100.0%)

註釋：(1) 數字包括本地機構為本身及／或為其他機構進行的內部研發活動開支。

Note: (1) Figures include expenditure on in-house R&D activities conducted by a local party for itself and/or for other organisations.

表 1.8 按研發活動範疇及選定行業組別／機構規模劃分的2016年工商機構的內部研發活動總開支
Table 1.8 Total expenditure on in-house R&D activities in the business sector in 2016 by field of R&D activity by selected industry grouping/size of establishment

(百萬港元)
(HK\$ million)

	研發活動範疇 Field of R&D activity					總計 ⁽¹⁾ Total ⁽¹⁾
	自然科學及工程科技 Natural sciences and engineering technology			社會科學及人文科學 Social sciences and humanities		
	自然科學 Natural sciences	工程及科技 Engineering and technology	醫療及衛生科學 Medical and health sciences	社會科學 Social sciences	人文科學及藝術 Humanities and the arts	
按行業組別劃分 By industry grouping						
製造業 Manufacturing	75.8 (27.3%)	136.0 (48.9%)	***	***	***	278.2 (100.0%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	775.6 (22.9%)	2,519.1 (74.3%)	90.1 (2.7%)	0.7 (\$)	4.2 (0.1%)	3,389.7 (100.0%)
資訊及通訊業 Information and communications	2,361.0 (88.7%)	297.4 (11.2%)	***	3.4 (0.1%)	***	2,662.6 (100.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	472.6 (25.3%)	1,021.7 (54.7%)	372.8 (20.0%)	***	***	1,868.0 (100.0%)
其他 Others	14.7 (4.5%)	215.2 (65.3%)	91.9 (27.9%)	4.3 (1.3%)	3.5 (1.1%)	329.6 (100.0%)
總計 Total	3,699.7 (43.4%)	4,189.5 (49.1%)	621.6 (7.3%)	9.2 (0.1%)	8.2 (0.1%)	8,528.1 (100.0%)
按機構規模劃分 By size of establishment						
大型 Large	1,944.7 (45.3%)	2,250.0 (52.4%)	94.7 (2.2%)	***	***	4,297.3 (100.0%)
中型 Medium	1,041.6 (39.9%)	1,250.9 (47.9%)	316.3 (12.1%)	***	***	2,609.0 (100.0%)
小型 Small	713.3 (44.0%)	688.5 (42.5%)	210.5 (13.0%)	4.8 (0.3%)	4.7 (0.3%)	1,621.8 (100.0%)
總計 Total	3,699.7 (43.4%)	4,189.5 (49.1%)	621.6 (7.3%)	9.2 (0.1%)	8.2 (0.1%)	8,528.1 (100.0%)

註釋：(1) 數字包括本地機構為本身及／或為其他機構進行的內部研發活動開支。

Note: (1) Figures include expenditure on in-house R&D activities conducted by a local party for itself and/or for other organisations.

表 1.9 按科技領域及選定行業組別／機構規模劃分的2016年工商機構的內部研發活動總開支

Table 1.9 Total expenditure on in-house R&D activities in the business sector in 2016 by technology area by selected industry grouping/size of establishment

(百萬港元)
(HK\$ million)

	科技領域 Technology area							
	資訊科技 Information technology					小計 Subtotal	生物科技 Bio- technology	中藥 Chinese medicine
	資訊系統及科技 Information system and technology	電腦硬件科技 Computer hardware technology	電腦軟件科技 Computer software technology	通訊科技 Communication technology	其他 Others			
按行業組別劃分 By industry grouping								
製造業 Manufacturing	0.2 (0.1%)	70.0 (25.2%)	1.8 (0.7%)	***	***	75.8 (27.3%)	50.8 (18.3%)	15.6 (5.6%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	202.2 (6.0%)	120.2 (3.5%)	192.1 (5.7%)	236.9 (7.0%)	24.2 (0.7%)	775.6 (22.9%)	85.1 (2.5%)	3.6 (0.1%)
資訊及通訊業 Information and communications	659.4 (24.8%)	52.5 (2.0%)	1,297.9 (48.7%)	350.5 (13.2%)	0.7 (\$)	2,361.0 (88.7%)	0.4 (\$)	***
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	319.1 (17.1%)	37.3 (2.0%)	74.0 (4.0%)	41.8 (2.2%)	0.4 (\$)	472.6 (25.3%)	358.0 (19.2%)	***
其他 Others	7.9 (2.4%)	0.3 (0.1%)	5.7 (1.7%)	***	***	14.7 (4.5%)	91.1 (27.6%)	0.8 (0.2%)
總計 Total	1,188.8 (13.9%)	280.4 (3.3%)	1,571.5 (18.4%)	630.1 (7.4%)	28.9 (0.3%)	3,699.7 (43.4%)	585.4 (6.9%)	20.6 (0.2%)
按機構規模劃分 By size of establishment								
大型 Large	713.2 (16.6%)	***	899.5 (20.9%)	276.3 (6.4%)	***	1,944.7 (45.3%)	80.9 (1.9%)	13.8 (0.3%)
中型 Medium	375.6 (14.4%)	103.0 (3.9%)	296.3 (11.4%)	239.8 (9.2%)	26.9 (1.0%)	1,041.6 (39.9%)	306.3 (11.7%)	1.9 (0.1%)
小型 Small	100.0 (6.2%)	***	375.7 (23.2%)	113.9 (7.0%)	***	713.3 (44.0%)	198.1 (12.2%)	4.8 (0.3%)
總計 Total	1,188.8 (13.9%)	280.4 (3.3%)	1,571.5 (18.4%)	630.1 (7.4%)	28.9 (0.3%)	3,699.7 (43.4%)	585.4 (6.9%)	20.6 (0.2%)

(待續)
(to be cont'd)

表 1.9 (續) 按科技領域及選定行業組別／機構規模劃分的2016年工商機構的內部研發活動總開支
Table 1.9 (cont'd) Total expenditure on in-house R&D activities in the business sector in 2016 by technology area by selected industry grouping/size of establishment

(百萬港元)
(HK\$ million)

	科技領域 Technology area								總計 ⁽²⁾ Total ⁽²⁾
	電機及電子 工程科技 ⁽¹⁾ Electrical and electronics engineering technology ⁽¹⁾	製造科技 Manufacturing technology	納米科技 Nano- technology	先進材料科技 Advanced materials technology	環保科技 Environmental technology	社會科學 Social sciences	人文科學及藝術 Humanities and the arts	其他 Others	
按行業組別劃分 By industry grouping									
製造業 Manufacturing	17.6 (6.3%)	83.1 (29.9%)	***	***	10.2 (3.7%)	***	***	1.7 (0.6%)	278.2 (100.0%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	1,853.8 (54.7%)	521.4 (15.4%)	3.7 (0.1%)	29.2 (0.9%)	109.5 (3.2%)	0.7 (\$)	4.2 (0.1%)	2.7 (0.1%)	3,389.7 (100.0%)
資訊及通訊業 Information and communications	150.8 (5.7%)	13.2 (0.5%)	***	***	20.6 (0.8%)	3.4 (0.1%)	***	112.7 (4.2%)	2,662.6 (100.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	488.4 (26.1%)	329.1 (17.6%)	84.0 (4.5%)	77.5 (4.1%)	38.2 (2.0%)	***	***	18.9 (1.0%)	1,868.0 (100.0%)
其他 Others	22.9 (6.9%)	11.9 (3.6%)	0.6 (0.2%)	12.8 (3.9%)	16.8 (5.1%)	4.3 (1.3%)	3.5 (1.1%)	150.3 (45.6%)	329.6 (100.0%)
總計 Total	2,533.5 (29.7%)	958.8 (11.2%)	94.1 (1.1%)	137.1 (1.6%)	195.2 (2.3%)	9.2 (0.1%)	8.2 (0.1%)	286.3 (3.4%)	8,528.1 (100.0%)
按機構規模劃分 By size of establishment									
大型 Large	1,247.3 (29.0%)	719.2 (16.7%)	82.4 (1.9%)	38.2 (0.9%)	8.9 (0.2%)	***	***	153.9 (3.6%)	4,297.3 (100.0%)
中型 Medium	883.7 (33.9%)	160.2 (6.1%)	6.2 (0.2%)	52.0 (2.0%)	34.8 (1.3%)	***	***	122.2 (4.7%)	2,609.0 (100.0%)
小型 Small	402.4 (24.8%)	79.4 (4.9%)	5.5 (0.3%)	46.9 (2.9%)	151.5 (9.3%)	4.8 (0.3%)	4.7 (0.3%)	10.3 (0.6%)	1,621.8 (100.0%)
總計 Total	2,533.5 (29.7%)	958.8 (11.2%)	94.1 (1.1%)	137.1 (1.6%)	195.2 (2.3%)	9.2 (0.1%)	8.2 (0.1%)	286.3 (3.4%)	8,528.1 (100.0%)

註釋：(1) 電機及電子工程科技若涉及電腦硬件（如集成電路）則包括在電腦硬件科技領域；若涉及通訊科技則包括在通訊科技領域。

(2) 數字包括本地機構為本身及／或為其他機構進行的內部研發活動開支。

Notes: (1) Electrical and electronics engineering technology associated with computer hardware (such as integrated circuits) was included in the area of computer hardware technology; while that associated with communication technology was included in the area of communication technology.

(2) Figures include expenditure on in-house R&D activities conducted by a local party for itself and/or for other organisations.

表 1.10 按資金來源及機構規模劃分的2016年工商機構的內部研發活動總開支
Table 1.10 Total expenditure on in-house R&D activities in the business sector in 2016 by source of funds by size of establishment

(百萬港元)
(HK\$ million)

	資金來源 Source of funds									總計 ⁽¹⁾ Total ⁽¹⁾
	本地機構 Local parties				香港以外機構 Parties outside Hong Kong					
	政府 (例如創新及 自資 Self- financed Government (e.g. Innovation and Technology Fund)	高等 教育機構 Higher education institutions	私募投資基金 (例如創業 基金等) Private investment fund (e.g. venture capital, etc.)	機構所屬企業 集團的分支 機構或總公司 Affiliates or parent company of the enterprise group	非機構所屬 企業集團 內的公司 Company not affiliated with the enterprise group	私募投資基金 (例如創業 基金等) Private investment fund (e.g. venture capital, etc.)	機構所屬企業 集團的分支 機構或總公司 Affiliates or parent company of the enterprise group	非機構所屬 企業集團 內的公司 Company not affiliated with the enterprise group		
按機構規模劃分 By size of establishment										
大型 Large	3,987.5 (92.8%)	17.0 (0.4%)	***	***	119.1 (2.8%)	***	***	171.3 (4.0%)	***	4,297.3 (100.0%)
中型 Medium	2,158.0 (82.7%)	24.9 (1.0%)	***	***	234.2 (9.0%)	***	1.3 (\$)	186.3 (7.1%)	***	2,609.0 (100.0%)
小型 Small	1,315.6 (81.1%)	43.9 (2.7%)	4.0 (0.2%)	95.5 (5.9%)	20.3 (1.3%)	6.7 (0.4%)	***	118.5 (7.3%)	***	1,621.8 (100.0%)
總計 Total	7,461.1 (87.5%)	85.8 (1.0%)	6.6 (0.1%)	97.3 (1.1%)	373.5 (4.4%)	9.1 (0.1%)	11.9 (0.1%)	476.1 (5.6%)	6.7 (0.1%)	8,528.1 (100.0%)

註釋：(1) 數字包括本地機構為本身及／或為其他機構進行的內部研發活動開支。

Note: (1) Figures include expenditure on in-house R&D activities conducted by a local party for itself and/or for other organisations.

表 1.11 按職能類別及選定行業組別／機構規模劃分的2016年工商機構的研發人員數目（人數和相當於全日制的人數）
Table 1.11 R&D personnel (in headcount and full-time equivalent) in the business sector in 2016 by type of function by selected industry grouping/size of establishment

	職能類別 Type of function							
	研究員／科學家／工程師 Researchers/Scientists/Engineers		技術員 Technicians		其他輔助人員 Other supporting staff		總計 Total	
	人數 Headcount	相當於全日 制的人數 Full-time equivalent	人數 Headcount	相當於全日 制的人數 Full-time equivalent	人數 Headcount	相當於全日 制的人數 Full-time equivalent	人數 Headcount	相當於全日 制的人數 Full-time equivalent
按行業組別劃分 By industry grouping								
製造業 Manufacturing	356 (66.1%)	310 (70.2%)	170 (31.6%)	124 (28.2%)	13 (2.4%)	7 (1.5%)	539 (100.0%)	441 (100.0%)
進出口貿易、批發及零售業以及住宿及 膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	4 122 (78.4%)	3 245 (80.1%)	300 (5.7%)	268 (6.6%)	837 (15.9%)	536 (13.2%)	5 259 (100.0%)	4 050 (100.0%)
資訊及通訊業 Information and communications	4 464 (72.6%)	3 749 (71.3%)	1 115 (18.1%)	1 056 (20.1%)	572 (9.3%)	453 (8.6%)	6 150 (100.0%)	5 258 (100.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	2 350 (83.2%)	1 851 (85.0%)	368 (13.0%)	256 (11.8%)	107 (3.8%)	70 (3.2%)	2 825 (100.0%)	2 178 (100.0%)
其他 Others	401 (68.9%)	291 (74.3%)	127 (21.8%)	70 (17.8%)	54 (9.3%)	31 (7.8%)	583 (100.0%)	391 (100.0%)
總計 Total	11 693 (76.1%)	9 446 (76.7%)	2 081 (13.5%)	1 775 (14.4%)	1 583 (10.3%)	1 097 (8.9%)	15 356 (100.0%)	12 318 (100.0%)
按機構規模劃分 By size of establishment								
大型 Large	3 852 (76.1%)	3 385 (77.4%)	590 (11.7%)	461 (10.6%)	620 (12.2%)	525 (12.0%)	5 062 (100.0%)	4 372 (100.0%)
中型 Medium	3 243 (65.6%)	2 644 (64.6%)	1 082 (21.9%)	971 (23.7%)	620 (12.5%)	478 (11.7%)	4 946 (100.0%)	4 093 (100.0%)
小型 Small	4 598 (86.0%)	3 417 (88.7%)	408 (7.6%)	342 (8.9%)	343 (6.4%)	94 (2.4%)	5 349 (100.0%)	3 853 (100.0%)
總計 Total	11 693 (76.1%)	9 446 (76.7%)	2 081 (13.5%)	1 775 (14.4%)	1 583 (10.3%)	1 097 (8.9%)	15 356 (100.0%)	12 318 (100.0%)

表 1.12 按教育程度及選定行業組別／機構規模劃分的2016年工商機構的研發人員數目（人數和相當於全日制的人數）
Table 1.12 R&D personnel (in headcount and full-time equivalent) in the business sector in 2016 by level of education by selected industry grouping/size of establishment

	教育程度 Level of education								總計 Total	
	博士程度大學學位 University degree at Ph.D. level		博士程度以下大學學位 University degree below Ph.D. level		其他專上文憑／證書 Other post-secondary diploma/certificate		非專上程度文憑／證書 Lower than post-secondary diploma/certificate			
	人數 Headcount	相當於 全日制的 人數 Full-time equivalent	人數 Headcount	相當於 全日制的 人數 Full-time equivalent	人數 Headcount	相當於 全日制的 人數 Full-time equivalent	人數 Headcount	相當於 全日制的 人數 Full-time equivalent	人數 Headcount	相當於 全日制的 人數 Full-time equivalent
按行業組別劃分 By industry grouping										
製造業 Manufacturing	34 (6.3%)	27 (6.1%)	314 (58.2%)	274 (62.2%)	94 (17.5%)	80 (18.2%)	97 (18.0%)	59 (13.5%)	539 (100.0%)	441 (100.0%)
進出口貿易、批發及零售業以及住宿及 膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	389 (7.4%)	254 (6.3%)	3 771 (71.7%)	3 055 (75.4%)	741 (14.1%)	513 (12.7%)	359 (6.8%)	228 (5.6%)	5 259 (100.0%)	4 050 (100.0%)
資訊及通訊業 Information and communications	672 (10.9%)	623 (11.8%)	4 767 (77.5%)	3 978 (75.7%)	658 (10.7%)	611 (11.6%)	54 (0.9%)	46 (0.9%)	6 150 (100.0%)	5 258 (100.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	381 (13.5%)	272 (12.5%)	2 005 (71.0%)	1 555 (71.4%)	377 (13.3%)	299 (13.7%)	63 (2.2%)	52 (2.4%)	2 825 (100.0%)	2 178 (100.0%)
其他 Others	175 (30.1%)	155 (39.6%)	272 (46.7%)	137 (35.0%)	109 (18.8%)	87 (22.3%)	26 (4.5%)	12 (3.1%)	583 (100.0%)	391 (100.0%)
總計 Total	1 650 (10.7%)	1 331 (10.8%)	11 128 (72.5%)	8 999 (73.1%)	1 979 (12.9%)	1 590 (12.9%)	599 (3.9%)	397 (3.2%)	15 356 (100.0%)	12 318 (100.0%)
按機構規模劃分 By size of establishment										
大型 Large	317 (6.3%)	277 (6.3%)	3 968 (78.4%)	3 445 (78.8%)	457 (9.0%)	395 (9.0%)	319 (6.3%)	255 (5.8%)	5 062 (100.0%)	4 372 (100.0%)
中型 Medium	467 (9.4%)	340 (8.3%)	3 420 (69.2%)	2 874 (70.2%)	945 (19.1%)	786 (19.2%)	113 (2.3%)	92 (2.3%)	4 946 (100.0%)	4 093 (100.0%)
小型 Small	866 (16.2%)	714 (18.5%)	3 740 (69.9%)	2 680 (69.6%)	577 (10.8%)	409 (10.6%)	166 (3.1%)	50 (1.3%)	5 349 (100.0%)	3 853 (100.0%)
總計 Total	1 650 (10.7%)	1 331 (10.8%)	11 128 (72.5%)	8 999 (73.1%)	1 979 (12.9%)	1 590 (12.9%)	599 (3.9%)	397 (3.2%)	15 356 (100.0%)	12 318 (100.0%)

表 1.13 按外判機構類別及選定行業組別／機構規模劃分的2016年工商機構的外判研發活動總開支

Table 1.13 Total expenditure on contracted-out R&D activities in the business sector in 2016 by type of contracted-out party by selected industry grouping/size of establishment

(百萬港元)
(HK\$ million)

	外判予本地機構的研發活動開支 Expenditure on contracted-out R&D activities to local parties	外判予香港以外機構的研發活動開支 Expenditure on contracted-out R&D activities to parties outside Hong Kong	外判研發活動總開支 Total expenditure on contracted-out R&D activities
按行業組別劃分 By industry grouping			
製造業 Manufacturing	25.6 (16.0%)	134.2 (84.0%)	159.8 (100.0%)
進出口貿易、批發及零售業以及住宿及 膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	469.1 (44.5%)	586.1 (55.5%)	1,055.2 (100.0%)
資訊及通訊業 Information and communications	141.7 (37.7%)	233.7 (62.3%)	375.4 (100.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	340.9 (36.4%)	594.5 (63.6%)	935.4 (100.0%)
其他 Others	225.2 (41.6%)	316.3 (58.4%)	541.5 (100.0%)
總計 Total	1,202.5 (39.2%)	1,864.8 (60.8%)	3,067.3 (100.0%)
按機構規模劃分 By size of establishment			
大型 Large	534.9 (33.5%)	1,063.9 (66.5%)	1,598.9 (100.0%)
中型 Medium	327.7 (56.9%)	247.8 (43.1%)	575.5 (100.0%)
小型 Small	339.9 (38.1%)	553.1 (61.9%)	892.9 (100.0%)
總計 Total	1,202.5 (39.2%)	1,864.8 (60.8%)	3,067.3 (100.0%)

表 1.14 按進行研發活動的機構類別劃分的2016年工商機構外判研發活動予其他機構的總開支
Table 1.14 Total expenditure on contracted-out R&D activities in the business sector in 2016 by type of performing party

進行研發活動的機構類別 Type of party performing the R&D activity	(百萬港元) (HK\$ million)	
	外判研發活動總開支 Total expenditure on contracted-out R&D activities	
公共科技支援機構 ⁽¹⁾ Public technology support organisations ⁽¹⁾	325.3	(10.6%)
高等教育機構 Higher education institutions	230.7	(7.5%)
機構所屬企業集團的分支機構或總公司 Affiliates or parent company of the enterprise group	1,342.4	(43.8%)
非機構所屬企業集團內的公司 Company not affiliated with the enterprise group	1,162.4	(37.9%)
其他 Others	6.6	(0.2%)
總計 Total	3,067.3	(100.0%)

註釋：(1) 例子包括香港生產力促進局、香港應用科技研究院有限公司及由政府資助的研發中心。

括號內數字顯示佔外判研發活動予其他機構的開支總計的百分比。

Notes: (1) Examples are Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited and Government-funded R&D Centres.

Figures in brackets represent the percentages in respect of total expenditure for the R&D activities contracted out to other organisations.

表 1.15 按進行研發活動的機構所屬地區劃分的2016年工商機構外判研發活動予其他機構的總開支
Table 1.15 Total expenditure on contracted-out R&D activities in the business sector in 2016 by region in which the performing party is located

(百萬港元)
(HK\$ million)

進行研發活動的機構所屬地區 Region in which the party performing the R&D activity is located	外判研發活動總開支 Total expenditure on contracted-out R&D activities	
香港 Hong Kong	1,202.5	(39.2%)
中國內地及澳門 The mainland of China and Macao	660.0	(21.5%)
珠江三角洲經濟區 ⁽¹⁾ Pearl River Delta (PRD) Economic Zone ⁽¹⁾	365.7	(11.9%)
泛珠三角區域 ⁽²⁾ (珠江三角洲經濟區及香港除外) Pan-PRD Region ⁽²⁾ (other than PRD Economic Zone and Hong Kong)	11.9	(0.4%)
其他地區 Other regions	282.4	(9.2%)
香港、中國內地及澳門以外地方 Places outside Hong Kong, the mainland of China and Macao	1,204.7	(39.3%)
總計 Total	3,067.3	(100.0%)

註釋：(1) 珠江三角洲經濟區包括13個市及縣(區)；分別是廣州、深圳、珠海、佛山、江門、東莞、中山、惠州市區、惠東縣、博羅縣、肇慶市區、高要市和四會市。

(2) 泛珠三角區域包括福建省、江西省、湖南省、廣東省、廣西壯族自治區、海南省、四川省、貴州省、雲南省等9個省/區，以及香港和澳門特別行政區。表中此組別的數字並不包括珠江三角洲經濟區及香港的機構。

括號內數字顯示佔外判研發活動予其他機構的開支總計的百分比。

Notes: (1) The PRD Economic Zone covers urban area of 13 cities and counties (district) including Guangzhou, Shenzhen, Zhuhai, Foshan, Jiangmen, Dongguan, Zhongshan, Huizhou urban district, Huidong County, Boluo County, Zhaoqing urban district, Gaoyao and Sihui.

(2) The Pan-PRD Region covers 9 provinces/regions (including Fujian, Jiangxi, Hunan, Guangdong, Guangxi Zhuang Autonomous Region, Hainan, Sichuan, Guizhou, Yunnan) as well as Hong Kong and Macao Special Administrative Regions. Organisations in PRD Economic Zone and Hong Kong are excluded from this category in the table.

Figures in brackets represent the percentages in respect of total expenditure for the R&D activities contracted out to other organisations.

表 1.16 按資金來源劃分的2016年工商機構的外判研發活動總開支
Table 1.16 Total expenditure on contracted-out R&D activities in the business sector in 2016 by source of funds

	(百萬港元) (HK\$ million)	
	外判研發活動總開支 Total expenditure on contracted-out R&D activities	
自資 Self-financed	2,098.7	(68.4%)
政府（例如創新及科技基金） Government (e.g. Innovation and Technology Fund)	46.4	(1.5%)
高等教育機構 Higher education institutions	***	
私募投資基金（例如創業基金等） Private investment fund (e.g. venture capital, etc.)	3.7	(0.1%)
機構所屬企業集團的分支機構或總公司 Affiliates or parent company of the enterprise group	908.6	(29.6%)
非機構所屬企業集團內的公司 Company not affiliated with the enterprise group	9.8	(0.3%)
其他 Others	***	
總計 Total	3,067.3	(100.0%)

註釋：括號內數字顯示佔外判研發活動予其他機構的開支總計的百分比。

Note: Figures in brackets represent the percentages in respect of total expenditure for the R&D activities contracted out to other organisations.

表 1.17 按是否有研發活動和其他機構訂立協作安排或協作機構的類別劃分的在2016年有進行研發活動的工商機構⁽¹⁾分布
Table 1.17 Distribution of business establishments having undertaken R&D activities⁽¹⁾ in 2016 by whether having collaboration arrangements on R&D activities with other organisations or type of collaborating organisation

是否有研發活動和其他機構訂立協作安排或協作機構類別 ⁽²⁾ Whether having collaboration arrangements on R&D activities with other organisations or type of collaborating organisation ⁽²⁾	機構數目 No. of establishments	
有研發活動和其他機構訂立協作安排 Having collaboration arrangements on R&D activities with other organisations	622	[15.8%]
政府 Government	31	(5.0%)
公共科技支援機構 ⁽³⁾ Public technology support organisations ⁽³⁾	32	(5.2%)
高等教育機構 Higher education institutions	174	(27.9%)
機構所屬企業集團的分支機構或總公司 Affiliates or parent company of the enterprise group	136	(21.9%)
非機構所屬企業集團內的公司 Company not affiliated with the enterprise group	346	(55.6%)
沒有研發活動和其他機構訂立協作安排 Not having collaboration arrangements on R&D activities with other organisations	3 321	[84.2%]
總計 Total	3 942	[100.0%]

註釋：(1) 數字包括從事內部研發活動的機構及把研發活動外判的機構。

Notes: (1) Figures include establishments with in-house R&D activities and establishments with R&D activities contracted out to other parties.

(2) 可涉及多於一個機構類別。

(2) May involve more than one type of organisation.

(3) 例子包括香港生產力促進局、香港應用科技研究院有限公司及由政府資助的研發中心。

(3) Examples are Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited and Government-funded R&D Centres.

方括號內數字顯示佔有進行研發活動的機構數目總計的百分比。

Figures in square brackets represent the percentages in respect of total no. of establishments having undertaken R&D activities.

圓括號內數字顯示佔有研發活動和其他機構訂立協作安排的機構數目總計的百分比。

Figures in round brackets represent the percentages in respect of total no. of establishments having collaboration arrangements on R&D activities with other organisations.

表 1.18 按是否有研發活動和其他機構訂立協作安排或協作機構的所屬地區劃分的在2016年有進行研發活動的工商機構⁽¹⁾分布
Table 1.18 Distribution of business establishments having undertaken R&D activities⁽¹⁾ in 2016 by whether having collaboration arrangements on R&D activities with other organisations or region in which the collaborating organisation is located

是否有研發活動和其他機構訂立協作安排或協作機構所屬地區 ⁽²⁾ Whether having collaboration arrangements on R&D activities with other organisations or region in which the collaborating organisation is located ⁽²⁾	機構數目 No. of establishments	
有研發活動和其他機構訂立協作安排 Having collaboration arrangements on R&D activities with other organisations	622	[15.8%]
香港 Hong Kong	377	(60.6%)
中國內地及澳門 The mainland of China and Macao		
珠江三角洲經濟區 ⁽³⁾ Pearl River Delta (PRD) Economic Zone ⁽³⁾	312	(50.2%)
泛珠三角區域 ⁽⁴⁾ (珠江三角洲經濟區及香港除外) Pan-PRD Region ⁽⁴⁾ other than PRD Economic Zone and Hong Kong	190	(30.5%)
其他地區 Other regions	255	(41.0%)
香港、中國內地及澳門以外地方 Places outside Hong Kong, the mainland of China and Macao	277	(44.5%)
沒有研發活動和其他機構訂立協作安排 Not having collaboration arrangements on R&D activities with other organisations	3 321	[84.2%]
總計 Total	3 942	[100.0%]

註釋：(1) 數字包括從事內部研發活動的機構及把研發活動外判的機構。

(2) 可涉及多於一個地點。

(3) 珠江三角洲經濟區包括13個市及縣(區)；分別是廣州、深圳、珠海、佛山、江門、東莞、中山、惠州市區、惠東縣、博羅縣、肇慶市區、高要市和四會市。

(4) 泛珠三角區域包括福建省、江西省、湖南省、廣東省、廣西壯族自治區、海南省、四川省、貴州省、雲南省等9個省/區，以及香港和澳門特別行政區。表中此組別的數字並不包括珠江三角洲經濟區及香港的機構。

方括號內數字顯示佔有進行研發活動的機構數目總計的百分比。

圓括號內數字顯示佔有研發活動和其他機構訂立協作安排的機構數目總計的百分比。

Notes: (1) Figures include establishments with in-house R&D activities and establishments with R&D activities contracted out to other parties.

(2) May involve more than one location.

(3) The PRD Economic Zone covers urban area of 13 cities and counties (district) including Guangzhou, Shenzhen, Zhuhai, Foshan, Jiangmen, Dongguan, Zhongshan, Huizhou urban district, Huidong County, Boluo County, Zhaoqing urban district, Gaoyao and Sihui.

(4) The Pan-PRD Region covers 9 provinces/regions (including Fujian, Jiangxi, Hunan, Guangdong, Guangxi Zhuang Autonomous Region, Hainan, Sichuan, Guizhou, Yunnan) as well as Hong Kong and Macao Special Administrative Regions. Organisations in PRD Economic Zone and Hong Kong are excluded from this category in the table.

Figures in square brackets represent the percentages in respect of total no. of establishments having undertaken R&D activities.

Figures in round brackets represent the percentages in respect of total no. of establishments having collaboration arrangements on R&D activities with other organisations.

表 2.1 按選定行業組別／機構規模劃分的2015及2016年工商機構的技術創新活動主要統計數字
Table 2.1 Key statistics on technological innovation (TI) activities in the business sector in 2015 and 2016 by selected industry grouping/size of establishment

	年度 Year	機構 數目總計 Total no. of establish- ments	有進行技術創新 活動的機構 數目 ⁽¹⁾ No. of establishments having undertaken TI activities ⁽¹⁾		有進行產品 創新的 機構數目 No. of establishments having undertaken product innovation		有進程序 創新的 機構數目 No. of establishments having undertaken process innovation		有進行中而尚未完 成的技術創新活動 的機構數目 No. of establishments having undertaken ongoing TI activities		有已終止的技術 創新活動的 機構數目 No. of establishments having undertaken abandoned TI activities		技術創新 活動開支 (百萬港元) TI expenditure (HK\$ million)	
按行業組別劃分 By industry grouping														
製造業 Manufacturing	2015	9 166	252	(2.8%)	85	(0.9%)	59	(0.6%)	196	(2.1%)	***		637.9	[3.6%]
	2016	9 238	260	(2.8%)	91	(1.0%)	49	(0.5%)	215	(2.3%)	***		727.2	[3.6%]
進出口貿易、批發及零售業以及 住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	2015	149 982	2 865	(1.9%)	1 152	(0.8%)	465	(0.3%)	1 879	(1.3%)	154	(0.1%)	6,540.3	[37.4%]
	2016	136 538	2 935	(2.1%)	1 856	(1.4%)	351	(0.3%)	1 973	(1.4%)	346	(0.3%)	6,459.3	[32.4%]
資訊及通訊業 Information and communications	2015	10 625	2 492	(23.5%)	998	(9.4%)	358	(3.4%)	1 599	(15.1%)	58	(0.5%)	4,389.1	[25.1%]
	2016	11 090	2 253	(20.3%)	1 011	(9.1%)	126	(1.1%)	1 709	(15.4%)	165	(1.5%)	6,665.1	[33.4%]
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	2015	66 823	1 313	(2.0%)	380	(0.6%)	373	(0.6%)	936	(1.4%)	***		4,087.9	[23.4%]
	2016	73 990	1 433	(1.9%)	851	(1.2%)	234	(0.3%)	909	(1.2%)	180	(0.2%)	4,350.6	[21.8%]
其他 Others	2015	42 915	422	(1.0%)	225	(0.5%)	52	(0.1%)	201	(0.5%)	25	(0.1%)	1,840.9	[10.5%]
	2016	43 022	533	(1.2%)	77	(0.2%)	269	(0.6%)	460	(1.1%)	***		1,758.0	[8.8%]
總計 Total	2015	279 511	7 344	(2.6%)	2 840	(1.0%)	1 307	(0.5%)	4 812	(1.7%)	259	(0.1%)	17,496.1	[100.0%]
	2016	273 877	7 413	(2.7%)	3 886	(1.4%)	1 029	(0.4%)	5 267	(1.9%)	698	(0.3%)	19,960.2	[100.0%]
按機構規模劃分 By size of establishment														
大型 Large	2015	5 922	599	(10.1%)	270	(4.6%)	188	(3.2%)	389	(6.6%)	34	(0.6%)	9,202.6	[52.6%]
	2016	6 243	522	(8.4%)	325	(5.2%)	146	(2.3%)	345	(5.5%)	80	(1.3%)	11,522.5	[57.7%]
中型 Medium	2015	31 169	1 830	(5.9%)	722	(2.3%)	437	(1.4%)	1 155	(3.7%)	85	(0.3%)	3,891.0	[22.2%]
	2016	29 710	1 668	(5.6%)	640	(2.2%)	124	(0.4%)	1 365	(4.6%)	40	(0.1%)	4,070.9	[20.4%]
小型 Small	2015	242 420	4 914	(2.0%)	1 848	(0.8%)	682	(0.3%)	3 267	(1.3%)	140	(0.1%)	4,402.5	[25.2%]
	2016	237 923	5 223	(2.2%)	2 920	(1.2%)	758	(0.3%)	3 557	(1.5%)	578	(0.2%)	4,366.8	[21.9%]
總計 Total	2015	279 511	7 344	(2.6%)	2 840	(1.0%)	1 307	(0.5%)	4 812	(1.7%)	259	(0.1%)	17,496.1	[100.0%]
	2016	273 877	7 413	(2.7%)	3 886	(1.4%)	1 029	(0.4%)	5 267	(1.9%)	698	(0.3%)	19,960.2	[100.0%]

註釋：(1) 數字顯示在該統計年有參與技術創新活動的機構，不論其為產品創新、程序創新、進行中而尚未完成的技術創新活動或已終止的技術創新活動。

Notes: (1) The figures refer to establishments that had been engaged in TI activities in respective reference years, whether they be product innovation, process innovation, ongoing TI activities or abandoned TI activities.

圓括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有機構的百分比。

Figures in round brackets represent the percentages in respect of all establishments in the respective industry grouping/size of establishment group.

方括號內數字顯示佔技術創新活動開支總計的百分比。

Figures in square brackets represent the percentages in respect of total TI expenditure.

表 2.2 按在2016年是否有進行產品創新／推出對市場來說是嶄新的創新產品及選定行業組別／機構規模劃分的工商機構分布
Table 2.2 Distribution of business establishments by whether having undertaken product innovation/product innovation new to the market in 2016 by selected industry grouping/size of establishment

	機構數目 總計 Total no. of establishments	有進行產品創新 的機構數目 No. of establishments having undertaken product innovation		有推出對市場來說是嶄新的 創新產品的機構數目 No. of establishments having undertaken product innovation new to the market	
按行業組別劃分 By industry grouping					
製造業 Manufacturing	9 238	91	(1.0%)	84	(0.9%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	136 538	1 856	(1.4%)	780	(0.6%)
資訊及通訊業 Information and communications	11 090	1 011	(9.1%)	409	(3.7%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	73 990	851	(1.2%)	216	(0.3%)
其他 Others	43 022	77	(0.2%)	13	(§)
總計 Total	273 877	3 886	(1.4%)	1 503	(0.5%)
按機構規模劃分 By size of establishment					
大型 Large	6 243	325	(5.2%)	168	(2.7%)
中型 Medium	29 710	640	(2.2%)	344	(1.2%)
小型 Small	237 923	2 920	(1.2%)	991	(0.4%)
總計 Total	273 877	3 886	(1.4%)	1 503	(0.5%)

註釋：括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有機構的百分比。

Note: Figures in brackets represent the percentages in respect of all establishments in the respective industry grouping/size of establishment group.

表 2.3 按選定行業組別／機構規模劃分的在2016年有進行產品創新的工商機構在發展產品創新的機構類別、產品創新數目和產品創新的收入佔業務收入總額⁽¹⁾百分比方面的概況

Table 2.3 Profile of business establishments having undertaken product innovation in 2016 in terms of development party, number of product innovation and percentage contribution of product innovation to total business receipts⁽¹⁾ by selected industry grouping/size of establishment

	發展產品創新的機構類別 ⁽²⁾								產品創新的 收入佔業務收入 總額 ⁽¹⁾ 百分比 % contribution of product innovation to total business receipts ⁽¹⁾
	Party for developing product innovation ⁽²⁾								
	機構本身 The establishment itself		機構與其他機構合作 Establishment in cooperation with other parties			其他機構 Other parties			
有進行產品 創新的 機構數目 No. of establishments having undertaken product innovation	機構 數目 No. of establishments	產品 創新數目 No. of product innovation	機構 數目 No. of establishments	產品 創新數目 No. of product innovation	機構 數目 No. of establishments	產品 創新數目 No. of product innovation	產品 創新總數 Total no. of product innovation		
按行業組別劃分									
By industry grouping									
製造業 Manufacturing	91	90 (98.9%)	803	***	***	***	***	815	8.0%
進出口貿易、批發及零售業以及住宿及 膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	1 856	1 282 (69.1%)	2 322	140 (7.6%)	343	554 (29.8%)	1 090	3 756	11.1%
資訊及通訊業 Information and communications	1 011	900 (89.0%)	1 795	69 (6.8%)	144	57 (5.6%)	65	2 004	32.6%
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services	851	421 (49.5%)	603	29 (3.4%)	50	495 (58.1%)	509	1 162	3.0%
其他 Others	77	71 (92.2%)	133	***	***	***	***	152	1.2%
總計 Total	3 886	2 764 (71.1%)	5 656	246 (6.3%)	557	1 110 (28.6%)	1 676	7 889	5.7%

(待續)
(to be cont'd)

表 2.3 (續) 按選定行業組別／機構規模劃分的在2016年有進行產品創新的工商機構在發展產品創新的機構類別、產品創新數目和產品創新的收入佔業務收入總額⁽¹⁾百分比方面的概況

Table 2.3 (cont'd) Profile of business establishments having undertaken product innovation in 2016 in terms of development party, number of product innovation and percentage contribution of product innovation to total business receipts⁽¹⁾ by selected industry grouping/size of establishment

	發展產品創新的機構類別 ⁽²⁾								產品創新的 收入佔業務收入 總額 ⁽¹⁾ 百分比 % contribution of product innovation to total business receipts ⁽¹⁾
	Party for developing product innovation ⁽²⁾								
	機構本身 The establishment itself		機構與其他機構合作 Establishment in cooperation with other parties			其他機構 Other parties			
有進行產品 創新的 機構數目 No. of establishments having undertaken product innovation	機構 數目 No. of establishments	產品 創新數目 No. of product innovation	機構 數目 No. of establishments	產品 創新數目 No. of product innovation	機構 數目 No. of establishments	產品 創新數目 No. of product innovation	產品 創新總數 Total no. of product innovation		
按機構規模劃分									
By size of establishment									
大型 Large	325	271 (83.3%)	981	30 (9.2%)	50	48 (14.7%)	57	1 088	5.5%
中型 Medium	640	486 (75.9%)	1 669	150 (23.4%)	384	13 (2.0%)	20	2 073	12.9%
小型 Small	2 920	2 006 (68.7%)	3 006	66 (2.3%)	124	1 049 (35.9%)	1 598	4 728	1.8%
總計 Total	3 886	2 764 (71.1%)	5 656	246 (6.3%)	557	1 110 (28.6%)	1 676	7 889	5.7%

註釋：(1) 有進行產品創新的機構的業務收入總額。

(2) 可涉及多於一個類別。

括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有有進行產品創新的機構的百分比。

Notes: (1) Total business receipts for establishments undertaking product innovation.

(2) May involve more than one category.

Figures in brackets represent the percentages in respect of total no. of establishments having undertaken product innovation in the respective industry grouping/size of establishment group.

表 2.4 按在2016年是否有進程序創新及選定行業組別／機構規模劃分的工商機構分布
Table 2.4 Distribution of business establishments by whether having undertaken process innovation in 2016 by selected industry grouping/size of establishment

	機構數目 總計 Total no. of establishments	有進程序創新 的機構數目 No. of establishments having undertaken process innovation	
按行業組別劃分 By industry grouping			
製造業 Manufacturing	9 238	49	(0.5%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	136 538	351	(0.3%)
資訊及通訊業 Information and communications	11 090	126	(1.1%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	73 990	234	(0.3%)
其他 Others	43 022	269	(0.6%)
總計 Total	273 877	1 029	(0.4%)
按機構規模劃分 By size of establishment			
大型 Large	6 243	146	(2.3%)
中型 Medium	29 710	124	(0.4%)
小型 Small	237 923	758	(0.3%)
總計 Total	273 877	1 029	(0.4%)

註釋：括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有機構的百分比。

Note: Figures in brackets represent the percentages in respect of all establishments in the respective industry grouping/size of establishment group.

表 2.5 按選定行業組別／機構規模劃分的在2016年有進程序創新的工商機構在發展程序創新的機構類別和程序創新數目方面的概況
Table 2.5 Profile of business establishments having undertaken process innovation in 2016 in terms of development party and number of process innovation by selected industry grouping/size of establishment

	發展程序創新的機構類別 ⁽¹⁾								程序 創新總數 Total no. of process innovation	
	Party for developing process innovation ⁽¹⁾									
	機構本身 The establishment itself		機構與其他機構合作 Establishment in cooperation with other parties		其他機構 Other parties					
有進程序創新 的機構數目 No. of establishments having undertaken process innovation	機構 數目 No. of establishments	程序 創新數目 No. of process innovation	機構 數目 No. of establishments	程序 創新數目 No. of process innovation	機構 數目 No. of establishments	程序 創新數目 No. of process innovation				
按行業組別劃分										
By industry grouping										
製造業 Manufacturing	49	11 (22.4%)	23	***	***	***	***			61
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	351	326 (92.9%)	364	***	***	***	***			395
資訊及通訊業 Information and communications	126	117 (93.1%)	189	11 (8.9%)	38	6 (4.4%)	6			233
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	234	205 (87.5%)	221	6 (2.7%)	16	24 (10.2%)	27			264
其他 Others	269	259 (96.2%)	433	8 (3.0%)	22	5 (2.0%)	5			460
總計 Total	1 029	918 (89.2%)	1 230	32 (3.1%)	83	95 (9.2%)	100			1 413
按機構規模劃分										
By size of establishment										
大型 Large	146	64 (44.0%)	288	16 (11.1%)	31	74 (50.5%)	74			393
中型 Medium	124	113 (90.8%)	193	9 (7.3%)	36	8 (6.8%)	8			237
小型 Small	758	740 (97.6%)	750	7 (0.9%)	16	12 (1.6%)	18			783
總計 Total	1 029	918 (89.2%)	1 230	32 (3.1%)	83	95 (9.2%)	100			1 413

註釋：(1) 可涉及多於一個類別。

括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有有進程序創新的機構的百分比。

Notes: (1) May involve more than one category.

Figures in brackets represent the percentages in respect of total no. of establishments having undertaken process innovation in the respective industry grouping/size of establishment group.

表 2.6 按在程序創新全面實施後節省的成本開支百分比及選定行業組別／機構規模劃分的在2016年有進程序創新的工商機構分布
Table 2.6 Distribution of business establishments having undertaken process innovation in 2016 by percentage of cost saving after full implementation of process innovation by selected industry grouping/size of establishment

	有進程序 創新的機構數目 No. of establishments having undertaken process innovation	節省的成本開支（以佔每件產品或每項服務的平均成本的百分比計算） Cost saving (as a percentage of average cost per unit of output produced or per unit of service provided)			與節省 成本無關 Not related to cost saving
		少於5% Less than 5%	5%至 少於20% 5% to less than 20%	20% 或以上 20% or above	
按行業組別劃分 By industry grouping					
製造業 Manufacturing	49	5 (10.2%)	***	***	39 (79.6%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	351	23 (6.6%)	14 (4.1%)	15 (4.3%)	299 (85.0%)
資訊及通訊業 Information and communications	126	5 (3.6%)	6 (4.4%)	18 (14.0%)	98 (77.9%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	234	23 (9.9%)	16 (7.0%)	66 (28.0%)	129 (55.2%)
其他 Others	269	8 (3.0%)	***	***	253 (94.1%)
總計 Total	1 029	64 (6.2%)	47 (4.6%)	100 (9.7%)	818 (79.5%)
按機構規模劃分 By size of establishment					
大型 Large	146	53 (36.3%)	***	***	70 (47.8%)
中型 Medium	124	5 (4.1%)	***	***	77 (61.9%)
小型 Small	758	6 (0.7%)	13 (1.7%)	69 (9.1%)	671 (88.4%)
總計 Total	1 029	64 (6.2%)	47 (4.6%)	100 (9.7%)	818 (79.5%)

註釋：括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有有進程序創新的機構的百分比。

Note: Figures in brackets represent the percentages in respect of total no. of establishments having undertaken process innovation in the respective industry grouping/size of establishment group.

表 2.7 按技術創新活動類別及選定行業組別／機構規模劃分的2016年工商機構的技術創新活動總開支
Table 2.7 Total expenditure on TI activities in the business sector in 2016 by type of TI activity by selected industry grouping/size of establishment

(百萬港元)
(HK\$ million)

	技術創新活動類別 Type of TI activity								技術創新活動總開支總額 Total TI expenditure
	機構為其本身進行的內部研發活動 In-house R&D activities for own establishment	外判予其他機構進行的研發活動 Contracted-out R&D activities to other parties	購置生產用的機器、設備和電腦軟件 Acquisition of machinery, equipment and software for production	獲取其他外界知識 Acquisition of other external knowledge	培訓 Training	推廣產品或程序創新項目 Promotion of product or process innovation	設計及生產或運送方面的其他準備工作 Design and other preparations for production or deliveries	購買土地及樓宇及其他 Acquisition of land and buildings and others	
按行業組別劃分 By industry grouping									
製造業 Manufacturing	277.9 (38.2%)	159.8 (22.0%)	148.9 (20.5%)	52.3 (7.2%)	***	18.4 (2.5%)	66.4 (9.1%)	***	727.2 (100.0%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	3,217.2 (49.8%)	1,055.2 (16.3%)	162.6 (2.5%)	55.6 (0.9%)	14.9 (0.2%)	385.4 (6.0%)	1,357.1 (21.0%)	211.3 (3.3%)	6,459.3 (100.0%)
資訊及通訊業 Information and communications	2,479.9 (37.2%)	375.4 (5.6%)	835.6 (12.5%)	30.7 (0.5%)	42.4 (0.6%)	250.4 (3.8%)	2,583.7 (38.8%)	66.9 (1.0%)	6,665.1 (100.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	1,215.2 (27.9%)	935.4 (21.5%)	816.1 (18.8%)	158.6 (3.6%)	12.1 (0.3%)	308.2 (7.1%)	877.9 (20.2%)	27.2 (0.6%)	4,350.6 (100.0%)
其他 Others	274.5 (15.6%)	541.5 (30.8%)	309.4 (17.6%)	346.5 (19.7%)	***	100.0 (5.7%)	172.9 (9.8%)	***	1,758.0 (100.0%)
總計 Total	7,464.7 (37.4%)	3,067.3 (15.4%)	2,272.6 (11.4%)	643.6 (3.2%)	79.3 (0.4%)	1,062.3 (5.3%)	5,058.0 (25.3%)	312.4 (1.6%)	19,960.2 (100.0%)
按機構規模劃分 By size of establishment									
大型 Large	3,864.3 (33.5%)	1,598.9 (13.9%)	1,815.9 (15.8%)	371.9 (3.2%)	47.4 (0.4%)	581.8 (5.0%)	3,157.6 (27.4%)	84.6 (0.7%)	11,522.5 (100.0%)
中型 Medium	2,260.1 (55.5%)	575.5 (14.1%)	201.1 (4.9%)	74.0 (1.8%)	17.3 (0.4%)	115.6 (2.8%)	817.3 (20.1%)	10.1 (0.2%)	4,070.9 (100.0%)
小型 Small	1,340.3 (30.7%)	892.9 (20.4%)	255.6 (5.9%)	197.7 (4.5%)	14.6 (0.3%)	365.0 (8.4%)	1,083.0 (24.8%)	217.7 (5.0%)	4,366.8 (100.0%)
總計 Total	7,464.7 (37.4%)	3,067.3 (15.4%)	2,272.6 (11.4%)	643.6 (3.2%)	79.3 (0.4%)	1,062.3 (5.3%)	5,058.0 (25.3%)	312.4 (1.6%)	19,960.2 (100.0%)

註釋：括號內數字顯示在個別行業組別／機構規模的組別中佔該組別的技術創新活動開支總計的百分比。

Note: Figures in brackets represent the percentages in respect of total TI expenditure in the respective industry grouping/size of establishment group.

表 2.8 按資金來源劃分的2016年工商機構的技術創新活動總開支
Table 2.8 Total expenditure on TI activities in the business sector in 2016 by source of funds

	(百萬港元) (HK\$ million)	
	技術創新活動總開支 Total expenditure on TI activities	
自資 Self-financed	17,673.8	(88.5%)
政府（例如創新及科技基金） Government (e.g. Innovation and Technology Fund)	189.4	(0.9%)
高等教育機構 Higher education institutions	***	
私募投資基金（例如創業基金等） Private investment fund (e.g. venture capital, etc.)	188.2	(0.9%)
機構所屬企業集團的分支機構或總公司 Affiliates or parent company of the enterprise group	1,855.8	(9.3%)
非機構所屬企業集團的公司 Company not affiliated with the enterprise group	40.4	(0.2%)
其他 Others	***	
總計 Total	19,960.2	(100.0%)

註釋：括號內數字顯示佔技術創新活動開支總計的百分比。

Note: Figures in brackets represent the percentages in respect of total TI expenditure.

表 2.9 按技術創新活動對企業的影響程度劃分的在2016年有進行技術創新活動的工商機構分布
Table 2.9 Distribution of business establishments having undertaken TI activities in 2016 by degree of impact of TI activities on businesses

	影響程度 Degree of impact				總計 Total
	高 High	中 Medium	低 Low	不適用 Not applicable	
對產品的影響（例如：擴大了產品（貨品或服務）的範圍或市場佔有率；改善了產品的質素等） Product oriented effects (e.g. increased range of products (goods or services) or market share; improved quality of products, etc.)	1 462 (19.7%)	3 190 (43.0%)	544 (7.3%)	2 217 (29.9%)	7 413 (100.0%)
對生產或業務程序的影響（例如：改善了生產靈活性；提高了生產量；減低了每件產品的生產成本等） Production or business process oriented effects (e.g. improved production flexibility; increased production capacity; reduced production cost per unit, etc.)	564 (7.6%)	637 (8.6%)	646 (8.7%)	5 567 (75.1%)	7 413 (100.0%)
62 減低對環境的影響，或對健康及安全方面有所改善 Reduced environmental impact or improved health and safety aspects	480 (6.5%)	1 053 (14.2%)	787 (10.6%)	5 094 (68.7%)	7 413 (100.0%)
符合了行業規例或標準 Met industry regulations or standards	705 (9.5%)	800 (10.8%)	528 (7.1%)	5 380 (72.6%)	7 413 (100.0%)

表 2.10 按是否有就技術創新活動和其他機構訂立協作安排或協作機構的類別劃分的在2016年有進行技術創新活動的工商機構分布
Table 2.10 Distribution of business establishments having undertaken TI activities in 2016 by whether having collaboration arrangements on TI activities with other organisations or type of collaborating organisation

是否有就技術創新活動和其他機構訂立協作安排或協作機構類別 ⁽¹⁾ Whether having collaboration arrangements on TI activities with other organisations or type of collaborating organisation ⁽¹⁾	機構數目 No. of establishments	
有就技術創新活動和其他機構訂立協作安排 Having collaboration arrangements on TI activities with other organisations	1 436	[19.4%]
政府 Government	38	(2.6%)
公共科技支援機構 ⁽²⁾ Public technology support organisations ⁽²⁾	477	(33.2%)
高等教育機構 Higher education institutions	206	(14.4%)
機構所屬企業集團的分支機構或總公司 Affiliates or parent company of the enterprise group	263	(18.3%)
非機構所屬企業集團內的公司 Company not affiliated with the enterprise group	670	(46.7%)
沒有就技術創新活動和其他機構訂立協作安排 Not having collaboration arrangements on TI activities with other organisations	5 977	[80.6%]
總計 Total	7 413	[100.0%]

註釋：(1) 可涉及多於一個機構類別。

(2) 例子包括香港生產力促進局、香港應用科技研究院有限公司及由政府資助的研發中心。

方括號內數字顯示佔有進行技術創新活動的機構數目總計的百分比。

圓括號內數字顯示佔有就技術創新活動和其他機構訂立協作安排的機構數目總計的百分比。

Notes: (1) May involve more than one type of organisation.

(2) Examples are Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited and Government-funded R&D Centres.

Figures in square brackets represent the percentages in respect of total no. of establishments having undertaken TI activities.

Figures in round brackets represent the percentages in respect of total no. of establishments having collaboration arrangements on TI activities with other organisations.

表 2.11 按是否有就技術創新活動和其他機構訂立協作安排或協作機構的所屬地區劃分的在2016年有進行技術創新活動的工商機構分布
Table 2.11 Distribution of business establishments having undertaken TI activities in 2016 by whether having collaboration arrangements on TI activities with other organisations or region in which the collaborating organisation is located

是否有就技術創新活動和其他機構訂立協作安排或協作機構所屬地區 ⁽¹⁾ Whether having collaboration arrangements on TI activities with other organisations or region in which the collaborating organisation is located ⁽¹⁾	機構數目 No. of establishments	
有就技術創新活動和其他機構訂立協作安排 Having collaboration arrangements on TI activities with other organisations	1 436	[19.4%]
香港 Hong Kong		944 (65.8%)
中國內地及澳門 The mainland of China and Macao		
珠江三角洲經濟區 ⁽²⁾ Pearl River Delta (PRD) Economic Zone ⁽²⁾		497 (34.6%)
泛珠三角區域 ⁽³⁾ (珠江三角洲經濟區及香港除外) Pan-PRD Region ⁽³⁾ (other than PRD Economic Zone and Hong Kong)		219 (15.3%)
其他地區 Other regions		266 (18.5%)
香港、中國內地及澳門以外地方 Places outside Hong Kong, the mainland of China and Macao		349 (24.3%)
沒有就技術創新活動和其他機構訂立協作安排 Not having collaboration arrangements on TI activities with other organisations	5 977	[80.6%]
總計 Total	7 413	[100.0%]

註釋：(1) 可涉及多於一個地點。

(2) 珠江三角洲經濟區包括13個市及縣（區）；分別是廣州、深圳、珠海、佛山、江門、東莞、中山、惠州市區、惠東縣、博羅縣、肇慶市區、高要市和四會市。

(3) 泛珠三角區域包括福建省、江西省、湖南省、廣東省、廣西壯族自治區、海南省、四川省、貴州省、雲南省等9個省／區，以及香港和澳門特別行政區。表中此組別的數字並不包括珠江三角洲經濟區及香港的機構。

方括號內數字顯示佔有進行技術創新活動的機構數目總計的百分比。

圓括號內數字顯示佔有就技術創新活動和其他機構訂立協作安排的機構數目總計的百分比。

Notes: (1) May involve more than one location.

(2) The PRD Economic Zone covers urban area of 13 cities and counties (district) including Guangzhou, Shenzhen, Zhuhai, Foshan, Jiangmen, Dongguan, Zhongshan, Huizhou urban district, Huidong County, Boluo County, Zhaoqing urban district, Gaoyao and Sihui.

(3) The Pan-PRD Region covers 9 provinces/regions (including Fujian, Jiangxi, Hunan, Guangdong, Guangxi Zhuang Autonomous Region, Hainan, Sichuan, Guizhou, Yunnan) as well as Hong Kong and Macao Special Administrative Regions. Organisations in PRD Economic Zone and Hong Kong are excluded from this category in the table.

Figures in square brackets represent the percentages in respect of total no. of establishments having undertaken TI activities.

Figures in round brackets represent the percentages in respect of total no. of establishments having collaboration arrangements on TI activities with other organisations.

表 2.12 按在2016年沒有進行技術創新活動的原因及選定行業組別／機構規模劃分的工商機構分布
Table 2.12 Distribution of business establishments by reason for not having undertaken TI activities in 2016 by selected industry grouping/size of establishment

	沒有進行技術 創新活動的 機構數目 No. of establishments not having undertaken TI activities	沒有進行技術創新活動的原因 ⁽¹⁾ Reason ⁽¹⁾ for not having undertaken TI activities			
		由於以前曾有進 行技術創新活動 ，因此暫無需要 No need due to prior TI activities	由於市場或行業情況 ，因此暫無需要 No need due to market or business conditions	由於技術創新活動由公司所屬 企業集團的分支機構或總公司 所進行，因此暫無需要 No need as TI activities were performed by affiliates or parent company of the enterprise group	由於有阻礙技術 創新活動的因素 No need as existence of barriers to TI activities
按行業組別劃分					
By industry grouping					
製造業 Manufacturing	8 978	203 (2.3%)	7 941 (88.4%)	76 (0.8%)	1 216 (13.5%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	133 604	3 494 (2.6%)	123 201 (92.2%)	5 423 (4.1%)	14 559 (10.9%)
資訊及通訊業 Information and communications	8 837	1 195 (13.5%)	6 505 (73.6%)	386 (4.4%)	2 885 (32.6%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	72 557	1 441 (2.0%)	68 249 (94.1%)	2 197 (3.0%)	6 511 (9.0%)
其他 Others	42 489	1 411 (3.3%)	40 382 (95.0%)	827 (1.9%)	2 979 (7.0%)
總計 Total	266 464	7 745 (2.9%)	246 279 (92.4%)	8 909 (3.3%)	28 151 (10.6%)
按機構規模劃分					
By size of establishment					
大型 Large	5 722	210 (3.7%)	4 524 (79.1%)	1 251 (21.9%)	251 (4.4%)
中型 Medium	28 042	1 071 (3.8%)	25 446 (90.7%)	1 620 (5.8%)	2 423 (8.6%)
小型 Small	232 700	6 464 (2.8%)	216 308 (93.0%)	6 037 (2.6%)	25 477 (10.9%)
總計 Total	266 464	7 745 (2.9%)	246 279 (92.4%)	8 909 (3.3%)	28 151 (10.6%)

註釋：(1) 可涉及多於一個原因。

括號內數字顯示在個別行業組別／機構規模的組別中佔該組別沒有進行技術創新活動的機構的百分比。

Notes: (1) May involve more than one reason.

Figures in brackets represent the percentages in respect of total no. of establishments not having undertaken TI activities in the respective industry grouping/size of establishment group.

表 2.13 按阻礙技術創新活動的因素劃分的在2016年有進行技術創新活動的工商機構分布
Table 2.13 Distribution of business establishments having undertaken TI activities in 2016 by factor hampering TI activities

阻礙技術創新活動的因素 Factor hampering TI activities	影響程度 Degree of impact				總計 Total
	高 High	中 Medium	低 Low	不適用 Not applicable	
經濟因素 Economic factors					
預期的經濟風險太高 Excessive perceived economic risks	1 509 (20.4%)	1 798 (24.3%)	673 (9.1%)	3 433 (46.3%)	7 413 (100.0%)
創新成本太高 Innovation costs too high	1 988 (26.8%)	1 782 (24.0%)	817 (11.0%)	2 826 (38.1%)	7 413 (100.0%)
機構內部或所屬企業集團缺乏資金 Lack of funds within the establishment or enterprise group	1 696 (22.9%)	1 530 (20.6%)	668 (9.0%)	3 519 (47.5%)	7 413 (100.0%)
缺乏機構或所屬企業集團以外的資金 Lack of finance from sources outside the establishment or enterprise group	1 372 (18.5%)	1 542 (20.8%)	584 (7.9%)	3 915 (52.8%)	7 413 (100.0%)
機構內部因素 Internal factors					
員工對變革的態度 Attitude of staff towards change	225 (3.0%)	1 148 (15.5%)	1 339 (18.1%)	4 701 (63.4%)	7 413 (100.0%)
組織架構未能配合變動 Inadaptability of organisational structure to change	253 (3.4%)	1 171 (15.8%)	1 137 (15.3%)	4 852 (65.5%)	7 413 (100.0%)
市場因素 Market factors					
顧客對創新產品或服務的需求不明確 Uncertain demand for innovation goods or services	1 560 (21.0%)	1 722 (23.2%)	1 095 (14.8%)	3 036 (41.0%)	7 413 (100.0%)
被行內一間或數間機構佔了市場絕對優勢 ⁽¹⁾ Market dominance ⁽¹⁾ by one or a few establishments in the industry sector	876 (11.8%)	1 251 (16.9%)	1 230 (16.6%)	4 057 (54.7%)	7 413 (100.0%)

(待續)
(to be cont'd)

表 2.13 (續) 按阻礙技術創新活動的因素劃分的在2016年有進行技術創新活動的工商機構分布
Table 2.13 (cont'd) Distribution of business establishments having undertaken TI activities in 2016 by factor hampering TI activities

阻礙技術創新活動的因素 Factor hampering TI activities	影響程度 Degree of impact				總計 Total
	高 High	中 Medium	低 Low	不適用 Not applicable	
知識因素 Knowledge factors					
缺乏外界技術支援服務 Lack of external technical support services	451 (6.1%)	1 361 (18.4%)	1 645 (22.2%)	3 957 (53.4%)	7 413 (100.0%)
缺乏合資格科技人員 Lack of qualified science and technology personnel	1 193 (16.1%)	1 386 (18.7%)	1 270 (17.1%)	3 565 (48.1%)	7 413 (100.0%)
缺乏所需技術資訊 Lack of information on required technology	293 (4.0%)	1 271 (17.1%)	1 737 (23.4%)	4 112 (55.5%)	7 413 (100.0%)
缺乏市場資訊 Lack of information on markets	629 (8.5%)	1 380 (18.6%)	1 387 (18.7%)	4 017 (54.2%)	7 413 (100.0%)
尋找創新項目的協作夥伴時遇上困難 Difficulty in finding collaboration partners for the innovation	1 320 (17.8%)	1 173 (15.8%)	903 (12.2%)	4 017 (54.2%)	7 413 (100.0%)
其他因素 Other factors					
知識產權的保護和執法成效不大 Ineffective intellectual property protection and enforcement	235 (3.2%)	854 (11.5%)	1 397 (18.8%)	4 927 (66.5%)	7 413 (100.0%)
政府規定的法規或標準的靈活性不足 Insufficient flexibility of regulations or standards set out by the Government	407 (5.5%)	1 260 (17.0%)	1 046 (14.1%)	4 700 (63.4%)	7 413 (100.0%)

註釋：(1) 市場絕對優勢是指超過一半的市場總銷售額由一間或數間公司所佔有的情況。

Note: (1) Market dominance refers to a situation where more than half of the total sales volume in the market is accounted for by a single or a few leading firms.

表 2.14 按在2016年是否有進行中而尚未完成的技術創新活動及選定行業組別／機構規模劃分的工商機構分布

Table 2.14 Distribution of business establishments by whether having undertaken ongoing TI activities in 2016 by selected industry grouping/size of establishment

	機構數目 總計 Total no. of establishments	有進行中而尚未完成的技術創新活動 的機構數目 No. of establishments having undertaken ongoing TI activities	
按行業組別劃分 By industry grouping			
製造業 Manufacturing	9 238	215	(2.3%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	136 538	1 973	(1.4%)
資訊及通訊業 Information and communications	11 090	1 709	(15.4%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	73 990	909	(1.2%)
其他 Others	43 022	460	(1.1%)
總計 Total	273 877	5 267	(1.9%)
按機構規模劃分 By size of establishment			
大型 Large	6 243	345	(5.5%)
中型 Medium	29 710	1 365	(4.6%)
小型 Small	237 923	3 557	(1.5%)
總計 Total	273 877	5 267	(1.9%)

註釋：括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有機構的百分比。

Note: Figures in brackets represent the percentages in respect of all establishments in the respective industry grouping/size of establishment group.

表 2.15 按在2016年是否有已終止的技術創新活動及選定行業組別／機構規模劃分的工商機構分布
Table 2.15 Distribution of business establishments by whether having undertaken abandoned TI activities in 2016 by selected industry grouping/size of establishment

	機構數目 總計 Total no. of establishments	有已終止的技術創新活動 的機構數目 No. of establishments having undertaken abandoned TI activities	
按行業組別劃分 By industry grouping			
製造業 Manufacturing	9 238	***	
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	136 538	346	(0.3%)
資訊及通訊業 Information and communications	11 090	165	(1.5%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	73 990	180	(0.2%)
其他 Others	43 022	***	
總計 Total	273 877	698	(0.3%)
按機構規模劃分 By size of establishment			
大型 Large	6 243	80	(1.3%)
中型 Medium	29 710	40	(0.1%)
小型 Small	237 923	578	(0.2%)
總計 Total	273 877	698	(0.3%)

註釋：括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有機構的百分比。

Note: Figures in brackets represent the percentages in respect of all establishments in the respective industry grouping/size of establishment group.

表 3.1 按在2016年是否有進行組織創新或市場推廣創新及選定行業組別／機構規模劃分的工商機構分布
Table 3.1 Distribution of business establishments by whether having undertaken organisational innovation or marketing innovation in 2016 by selected industry grouping/size of establishment

	機構數目 總計 Total no. of establishments	有進行組織創新 的機構數目 No. of establishments having undertaken organisational innovation	有進行市場推廣創新 的機構數目 No. of establishments having undertaken marketing innovation	有進行組織創新 或市場推廣創新 的機構數目 No. of establishments having undertaken organisational innovation or marketing innovation
按行業組別劃分 By industry grouping				
製造業 Manufacturing	9 238	493 (5.3%)	269 (2.9%)	701 (7.6%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	136 538	3 863 (2.8%)	11 853 (8.7%)	13 874 (10.2%)
資訊及通訊業 Information and communications	11 090	696 (6.3%)	1 414 (12.8%)	1 557 (14.0%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	73 990	2 586 (3.5%)	4 525 (6.1%)	5 521 (7.5%)
其他 Others	43 022	512 (1.2%)	2 467 (5.7%)	2 635 (6.1%)
總計 Total	273 877	8 150 (3.0%)	20 530 (7.5%)	24 287 (8.9%)
按機構規模劃分 By size of establishment				
大型 Large	6 243	453 (7.3%)	450 (7.2%)	698 (11.2%)
中型 Medium	29 710	1 099 (3.7%)	3 327 (11.2%)	4 016 (13.5%)
小型 Small	237 923	6 599 (2.8%)	16 753 (7.0%)	19 573 (8.2%)
總計 Total	273 877	8 150 (3.0%)	20 530 (7.5%)	24 287 (8.9%)

註釋：括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有機構的百分比。

Note: Figures in brackets represent the percentages in respect of all establishments in the respective industry grouping/size of establishment group.

表 3.2 按在2016年所進行組織創新類別及選定行業組別／機構規模劃分的工商機構分布

Table 3.2 Distribution of business establishments by type of organisational innovation undertaken in 2016 by selected industry grouping/size of establishment

	有進行組織創新的機構數目 No. of establishments having undertaken organisational innovation	按進行組織創新類別 ⁽¹⁾ 劃分的機構數目 No. of establishments by type of organisational innovation undertaken ⁽¹⁾		
		新業務模式以訂定營運的程序 New business practices for organising procedures	新方法以釐定員工的工作責任及決策權 New methods of organising work responsibilities and decision-making	新方法以建立與其他公司或公營機構的業務關係 New methods of organising external relations with other firms or public institutions
按行業組別劃分 By industry grouping				
製造業 Manufacturing	493	64 (13.0%)	64 (12.9%)	475 (96.4%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	3 863	1 904 (49.3%)	2 132 (55.2%)	2 523 (65.3%)
資訊及通訊業 Information and communications	696	527 (75.7%)	218 (31.4%)	535 (76.8%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	2 586	939 (36.3%)	2 053 (79.4%)	1 804 (69.8%)
其他 Others	512	214 (41.8%)	501 (97.9%)	94 (18.3%)
總計 Total	8 150	3 648 (44.8%)	4 967 (60.9%)	5 431 (66.6%)
按機構規模劃分 By size of establishment				
大型 Large	453	269 (59.5%)	248 (54.8%)	110 (24.3%)
中型 Medium	1 099	650 (59.1%)	691 (62.9%)	287 (26.1%)
小型 Small	6 599	2 729 (41.4%)	4 028 (61.0%)	5 034 (76.3%)
總計 Total	8 150	3 648 (44.8%)	4 967 (60.9%)	5 431 (66.6%)

註釋：(1) 可涉及多於一個類別。

Notes: (1) May involve more than one category.

括號內數字顯示在個別行業組別／機構規模的組別中佔該組別有進行組織創新的機構的百分比。

Figures in brackets represent the percentages in respect of total no. of establishments having undertaken organisational innovation in the respective industry grouping/size of establishment group.

表 3.3 按在2016年進行組織创新的主要目的劃分的工商機構分布

Table 3.3 Distribution of business establishments by major objective of undertaking organisational innovation in 2016

進行組織创新的主要目的 Major objectives of undertaking organisational innovation	重要程度 Degree of importance				總計 Total
	高 High	中 Medium	低 Low	不適用 Not applicable	
縮減回應顧客或供應商訴求所需的時間 Reduced time to respond to customer or supplier needs	2 437 (29.9%)	2 782 (34.1%)	820 (10.1%)	2 112 (25.9%)	8 150 (100.0%)
改善開發嶄新產品或程序的能力 Improved ability to develop new products or processes	729 (8.9%)	4 660 (57.2%)	142 (1.7%)	2 619 (32.1%)	8 150 (100.0%)
改善貨品或服務質素 Improved quality of goods or services	2 785 (34.2%)	3 427 (42.0%)	290 (3.6%)	1 649 (20.2%)	8 150 (100.0%)
減少每件產品的成本 Reduced costs per unit output	1 994 (24.5%)	3 200 (39.3%)	756 (9.3%)	2 201 (27.0%)	8 150 (100.0%)
改善工商機構內部溝通或共享資訊的渠道，以及加強與其他工商機構的聯繫 Improved communication or information sharing within the business establishment or with other business establishments or institutions	1 771 (21.7%)	4 479 (55.0%)	780 (9.6%)	1 119 (13.7%)	8 150 (100.0%)

註釋：括號內數字顯示佔進行組織创新的機構總計的百分比。

Note: Figures in brackets represent the percentages in respect of total no. of establishments having undertaken organisational innovation.

表 3.4 按在2016年所進行市場推廣創新類別及選定行業組別／機構規模劃分的工商機構分布
Table 3.4 Distribution of business establishments by type of marketing innovation undertaken in 2016 by selected industry grouping/size of establishment

	按進行市場推廣創新類別 ⁽¹⁾ 劃分的機構數目				
	No. of establishments having undertaken marketing innovation	No. of establishments by type of marketing innovation undertaken ⁽¹⁾			
		重大改變產品在美觀或包裝上的設計 Significant changes to the aesthetic design or packaging of product	採用新媒體或技術以推廣產品 New media or techniques for product promotion	採用新方法以展銷產品 New methods for product placement or sales channels	以新方法為貨品或服務訂價 New methods of pricing goods or services
按行業組別劃分					
By industry grouping					
製造業 Manufacturing	269	29 (10.7%)	199 (74.0%)	196 (72.8%)	231 (85.6%)
進出口貿易、批發及零售業以及住宿及膳食服務業 Import/export, wholesale and retail trades, and accommodation and food services sectors	11 853	3 708 (31.3%)	6 678 (56.3%)	5 001 (42.2%)	4 407 (37.2%)
資訊及通訊業 Information and communications	1 414	688 (48.7%)	1 103 (78.0%)	388 (27.5%)	440 (31.1%)
金融及保險、地產、專業及商用服務業 Financing and insurance, real estate, professional and business services sectors	4 525	1 931 (42.7%)	3 062 (67.7%)	2 056 (45.4%)	1 174 (26.0%)
其他 Others	2 467	375 (15.2%)	2 030 (82.3%)	199 (8.1%)	785 (31.8%)
總計 Total	20 530	6 731 (32.8%)	13 072 (63.7%)	7 841 (38.2%)	7 038 (34.3%)
按機構規模劃分					
By size of establishment					
大型 Large	450	168 (37.4%)	316 (70.3%)	222 (49.3%)	86 (19.1%)
中型 Medium	3 327	795 (23.9%)	2 248 (67.6%)	1 592 (47.8%)	444 (13.3%)
小型 Small	16 753	5 768 (34.4%)	10 508 (62.7%)	6 027 (36.0%)	6 508 (38.8%)
總計 Total	20 530	6 731 (32.8%)	13 072 (63.7%)	7 841 (38.2%)	7 038 (34.3%)

註釋：(1) 可涉及多於一個類別。

Notes: (1) May involve more than one category.

括號內數字顯示在個別行業組別／機構規模的組別中佔該組別有進行市場推廣創新的機構的百分比。

Figures in brackets represent the percentages in respect of total no. of establishments having undertaken marketing innovation in the respective industry grouping/size of establishment group.

表 3.5 按在2016年進行市場推廣创新的主要目的劃分的工商機構分布
Table 3.5 Distribution of business establishments by major objective of undertaking marketing innovation in 2016

進行市場推廣创新的主要目的 Major objectives of undertaking marketing innovation	重要程度 Degree of importance				總計 Total
	高 High	中 Medium	低 Low	不適用 Not applicable	
擴大或維持市場佔有率 Increase or maintain market share	6 762 (32.9%)	5 338 (26.0%)	5 612 (27.3%)	2 818 (13.7%)	20 530 (100.0%)
為產品開拓新客源 Introduce products to new customer groups	8 066 (39.3%)	6 747 (32.9%)	4 861 (23.7%)	856 (4.2%)	20 530 (100.0%)
為產品開拓新的地區市場 Introduce products to new geographic markets	4 412 (21.5%)	4 092 (19.9%)	6 467 (31.5%)	5 559 (27.1%)	20 530 (100.0%)

註釋：括號內數字顯示佔有進行市場推廣创新的機構總計的百分比。

Note: Figures in brackets represent the percentages in respect of total no. of establishments having undertaken marketing innovation.

表 3.6 按在2016年是否有進行技術或非技術創新活動、選定行業組別／機構規模及創新活動類別劃分的工商機構分布
Table 3.6 Distribution of business establishments by whether having undertaken technological or non-technological innovation activities in 2016 by selected industry grouping/size of establishment by type of innovation activity

	機構數目 總計	有進行技術創新 活動的機構數目	有進行非技術創新 的機構數目 ⁽¹⁾	有進行創新活動 的機構數目 ⁽²⁾
	Total no. of establishments	No. of establishments having undertaken technological innovation	No. of establishments having undertaken non- technological innovation ⁽¹⁾	No. of establishments having undertaken innovation ⁽²⁾
按行業組別劃分				
By industry grouping				
製造業	9 238	260	701	914
Manufacturing		(2.8%)	(7.6%)	(9.9%)
進出口貿易、批發及零售業以及住宿及膳食服務業	136 538	2 935	13 874	15 640
Import/export, wholesale and retail trades, and accommodation and food services sectors		(2.1%)	(10.2%)	(11.5%)
資訊及通訊業	11 090	2 253	1 557	3 115
Information and communications		(20.3%)	(14.0%)	(28.1%)
金融及保險、地產、專業及商用服務業	73 990	1 433	5 521	6 123
Financing and insurance, real estate, professional and business services sectors		(1.9%)	(7.5%)	(8.3%)
其他	43 022	533	2 635	2 990
Others		(1.2%)	(6.1%)	(6.9%)
總計	273 877	7 413	24 287	28 782
Total		(2.7%)	(8.9%)	(10.5%)
按機構規模劃分				
By size of establishment				
大型	6 243	522	698	993
Large		(8.4%)	(11.2%)	(15.9%)
中型	29 710	1 668	4 016	5 130
Medium		(5.6%)	(13.5%)	(17.3%)
小型	237 923	5 223	19 573	22 658
Small		(2.2%)	(8.2%)	(9.5%)
總計	273 877	7 413	24 287	28 782
Total		(2.7%)	(8.9%)	(10.5%)

註釋：(1) 數字顯示有進行組織創新或市場推廣創新活動或兩者皆有進行的機構。

(2) 數字顯示有進行技術或非技術創新活動或兩者皆有進行的機構。

括號內數字顯示在個別行業組別／機構規模的組別中佔該組別所有機構的百分比。

Notes: (1) The figures refer to establishments that had undertaken organisational innovation or marketing innovation activities or both.

(2) The figures refer to establishments that had undertaken technological or non-technological innovation activities or both.

Figures in brackets represent the percentages in respect of all establishments in the respective industry grouping/size of establishment group.

附錄甲：用語及定義

Appendix A : Terms and Definitions

先進材料科技 涵蓋創造新物料的技术，以及為配合特定用途調校物料的性质而控制物料的成分或結構的程序。

應用研究 是為了獲得新知識而進行的研究，但主要是為一特定實際目標或目的而進行。

基礎研究 是主要為了獲取有關一些現象和客觀事實的基本原理的新知識而進行的實驗性或理論性工作，而並沒有預設任何特定應用範圍或用途。

生物科技 是指將科技應用於生物及其有關部分、產品及模型，以改變生物或非生物的物料，從中得出知識，開發服務及產品。

生物科技以下列七個範疇為基礎（僅供說明，並不代表全部範疇）：

- 脫氧核糖核酸 DNA / 核糖核酸 RNA：基因組學；藥物遺傳學；基因探針；遺傳工程；DNA / RNA 的測序 / 合成 / 擴增；基因表達圖譜；反義技術的應用。
- 蛋白質及其他分子：蛋白質及肽（包括大分子荷爾蒙）的測序 / 合成 / 工程；改善大分子藥物傳遞的方法；蛋白質組學；蛋白質的分離與純化；信息傳遞；細胞受體的識別。
- 細胞及組織的培養與工程學：細胞 / 組織培養；組織工程學（包括組織支架和生物醫學工程）；細胞融合；疫苗 / 免疫力增強劑；胚胎操作技術。
- 生物科技製程技術：利用生物反應器發酵；生物製程；生物溶濾法；生物製漿法；生物漂白法；生物脫硫法；生物修復法及生物過濾法。
- 基因及 RNA 載體：基因治療法；病毒載體。
- 生物信息學：建立基因組和蛋白質序列資料庫；建立複雜生物程序模型，包括系統生物學。
- 納米生物技術：運用納米 / 微製造技術的工具和程序製造儀器以研究生物系統及應用於藥物傳遞和診斷等方面。

Advanced materials technology covers techniques to create new materials, and processes to control the composition or structure of material with a view to tailoring its properties to a specific application.

Applied research is original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective.

Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

Biotechnology is defined as the application of science and technology to living organisms as well as parts, products and models thereof, to alter living or non-living materials for the production of knowledge, services and goods.

It is based on the following seven categories (indicative, not exhaustive):

- DNA/RNA: genomics; pharmaco-genetics; gene probes; genetic engineering, DNA/RNA sequencing/synthesis/amplification; genetic expression profiling, and use of antisense technology.
- proteins and other molecules: sequencing/synthesis/engineering of proteins and peptides (including large molecule hormones); improved delivery methods for large molecule drugs; proteomics; protein isolation and purification, signaling, identification of cell receptors.
- cell and tissue culture and engineering: cell/tissue culture; tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine/immune stimulants, embryo manipulation.
- process biotechnologies techniques: fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulphurisation, bioremediation and biofiltration.
- gene and RNA vectors: gene therapy, viral vectors.
- bioinformatics: construction of database on genomes, protein sequences; modelling complex biological processes, including systems biology.
- nanobiotechnology: applies the tools and processes of nano/microfabrication to build devices for studying biosystems and applications in drug delivery, diagnostics etc.

工商機構 包括：

- 其主要活動為生產貨品或提供服務（高等教育除外），並以相當價錢賣給市民的工商機構、團體和機構；以及
- 主要為上述機構服務的私人非牟利機構，例如：商會或行業組織。

內部研發活動的資本開支 包括：

- 購買土地及樓宇 包括：
用於購買用地（例如：實驗場地、實驗室和小型實驗工廠）以及購買或興建樓宇的實際開支，包括大規模的土地及樓宇改善、改裝和維修工程作研發用途。
- 購置機器及設備 包括：
為進行研發活動而購買的主要儀器、設備及電腦軟件。
- 其他資本開支 包括：
購買傢俬及裝置、運輸工具等。

但資本資產的折舊不包括在內。

中藥 包括開發中成藥及中藥材的技術。

研發活動的協作安排 是指一間公司與其他機構皆 **積極合作參與的研發項目**，但雙方不一定產生商業利益。積極參與包括撥款資助研發項目、在該項目中貢獻知識和技術專門技能，以及為該項目訂立目標和方向。外判工作不被視為一種協作安排。

技術創新活動的協作安排 是指一間公司與其他機構皆 **積極合作參與的產品創新或程序創新項目**，但雙方不一定產生商業利益。積極參與包括撥款資助產品創新或程序創新項目、在該項目中貢獻知識和技術專門技能，以及為該項目訂立目標和方向。外判工作不被視為一種協作安排。

Business establishments include:

- establishments, organisations, and institutions whose primary activity is the production of goods or provision of services (other than higher education) for sale to the general public at an economically significant price; and
- private non-profit institutions mainly serving them, e.g. chambers of commerce, trade associations.

Capital expenditure for in-house R&D activities includes:

- acquisition of land and buildings *includes:*
actual expenditure on land acquired (e.g. testing grounds, sites for laboratories and pilot plants) and buildings purchased or constructed, including major improvements, modifications, and repair made to land and buildings for conducting R&D activities.
- acquisition of machinery and equipment *includes:*
major instruments, equipment and software acquired for use in the performance of R&D activities.
- other capital expenditure *includes:*
acquisition of furniture and fixtures, transport equipment etc.

However, depreciation of capital assets should be excluded.

Chinese medicine includes the techniques related to the development of both proprietary Chinese medicines and Chinese herbal medicines.

Collaboration arrangements on R&D activities refer to *active and joint participation* with other organisation(s) on conducting **R&D** which do not necessarily bring along commercial benefit to either parties. Active participation involves contribution of project funding, knowledge and technology know-how plus project goals and direction setting. Exclude pure contracting out of work with no active collaboration.

Collaboration arrangements on technological innovation (TI) activities refer to *active and joint participation* with other organisation(s) on conducting **product innovations or process innovations** which do not necessarily bring along commercial benefit to either parties. Active participation involves contribution of project funding, knowledge and technology know-how plus project goals and direction setting. Exclude pure contracting out of work with no active collaboration.

通訊科技 包括天線技術；光學及光子系統；數碼系統；無線電通訊及其他廣播；微波技術；以及其他通訊技術，如電腦通訊網絡；寬頻網絡技術；調解器技術；以及衛星通訊。

電腦硬件科技 包括運算及邏輯結構；記憶體結構；輸入、輸出及數據通訊；邏輯設計；集成電路；以及其他電腦硬件。

電腦軟件科技 包括程式編寫技術；軟件工程學；電腦語言；操作系統；以及其他電腦軟件。

外判研發活動 指在一間機構以外透過合約安排由其他組織或個人進行的研發活動。

內部研發活動的經常開支 包括：

- 僱員薪酬（包括研發僱員的工資和薪金；非現金的研發僱員福利開支（例如提供住所）和僱主為研發僱員支付的社會保障開支；以及向研發僱員派發以股份為基礎的支出（指按股本結算及按現金結算，並以股份為基礎的支出））；
- 為進行研發活動所購買的物料及所需用品的費用；
- 維修保養（不包括大修及大規模翻新工程的費用）；以及
- 其他經常開支（包括支援一間機構研發的非資本成本（例如：水、電和燃料費、書籍、期刊、參考資料、小型樣板的成本）；行政及其他雜項成本（例如：租金、差餉、電訊費用）；以及間接服務方面的開支，不論有關服務在有關機構內提供或向外界供應商租用或購買（例如：保安、貯物、樓宇和設備的使用、電腦服務以及印刷研發報告））。

直接參與研發活動的直屬僱員 是指受僱於一間機構，於統計期內在其正常工作時間內從事研發活動或為研發計劃提供直接輔助服務的僱員。

不包括：

Communication technology includes antenna technology; optical and photonic systems; digital systems; radio communication and other broadcasting; microwave technology; and other communication technologies such as computer communication networks; broadband network technology; modem technology; and satellite communications.

Computer hardware technology covers arithmetic and logic structures; memory structures; input, output and data communications; logic design; integrated circuits; and other computer hardware.

Computer software technology covers programming techniques; software engineering; computer languages; operating systems; and other computer software.

Contracted-out R&D activities refer to R&D performed by other organisations or individuals outside an establishment under a contractual arrangement.

Current expenditure for in-house R&D activities includes:

- Compensation of employees (*including* wages and salaries of R&D employees; payments in kind (e.g. provision of accommodation) and employer's social security expenditure of R&D employees; and share-based payments granted to R&D employees (refer to equity-settled and cash-settled share-based payments));
- Acquisition of materials and suppliers cost for the R&D activities;
- Repair and maintenance costs (*excluding* capital repairs and major renovations); and
- Other current expenditure (*including* non-capital cost to support R&D performed by an establishment (e.g. water, electricity and fuel costs, books, journals, reference materials, cost of small prototypes); administrative and other overhead costs (e.g. rents and rates, telecommunications fee); and expenditure on indirect services, whether carried out within the establishment or hired or purchased from outside suppliers (e.g. security; storage; the use of buildings and equipment; computer services; and printing of R&D reports)).

Direct employees engaged in R&D activities refer to those employees who had been employed by an establishment and had spent some of their normal working hours on conducting R&D activities, or providing direct support services to R&D projects during the reference period.

Exclude:

- 為研發計劃提供間接輔助服務的僱員，例如：在中央電腦部門、中央財務及人事部門的僱員以及保安、清潔及保養人員。

電機及電子工程科技 包括電機工程（一般）及電子工程。電機工程是一門有關各種形式的電力的實際應用，包括電子方面的應用工程。電子工程則是一門關於電磁譜的應用，以及如集成電路、晶體管及真空管等電子器件的應用。

不包括：

- 已列在電腦硬件科技領域之內，與電腦硬件（如集成電路）有關的電機或電子工程科技。
- 已列在通訊科技領域之內，與通訊科技有關的電機或電子工程科技。

工程及科技 包括土木工程、電機工程、電子學以及其他工程學（例如化學工程、機械工程、冶金學及材料工程、紡織技術和其他有關學科）。

企業集團 由連鎖的**直接企業投資者**和**分支公司**組成。**分支公司**包括企業集團內任何公司轄下各分公司、附屬公司及聯營公司，或企業集團有參與權益的公司。**分公司**是指由母公司全權擁有的非法人公司；並與母公司有同一法律身份。**附屬公司**是指任何被另一公司持有50%以上股權的公司。**聯營公司**是指被另一公司持有20%至50%股份的公司。如某公司是另一公司的分支公司，則後者是前者的**直接企業投資者**。

- employees providing indirect support services to the R&D project, e.g. employees in central computer department, central finance and personnel departments, and security, cleaning and maintenance personnel.

Electrical and electronics engineering technology covers electrical engineering (general); and electronics engineering. Electrical engineering is the branch of engineering concerned with the practical applications of electricity in all its forms, including those of the field of electronics. Electronics engineering is that branch of electrical engineering concerned with the uses of the electromagnetic spectrum and with the application of such electronic devices as integrated circuits, transistors, and vacuum tubes.

Exclude:

- electrical or electronics engineering technology associated with computer hardware (such as integrated circuits) which is included in the area of computer hardware technology.
- electrical or electronics engineering technology associated with communication technology which is included in the area of communication technology.

Engineering and technology cover civil engineering; electrical engineering; electronics; and other engineering sciences (such as chemical, mechanical, metallurgical and materials engineering, textile technology, and other allied subjects).

An **enterprise group** is made up of a chain of **direct enterprise investors** and **affiliated companies**. **Affiliated companies** include branches, subsidiaries and associates of any company in an enterprise group, or establishments in which a company in an enterprise group has a participating interest. **Branches** refer to unincorporated companies which are wholly owned by a parent company, and have the same legal identity as the parent. **Subsidiary** refers to any company where over 50% of its equity is being held by another company. **Associate** is a company the equity of which is between 20% and 50% owned by another company. A company is the **direct enterprise investor** of another company if the latter is an affiliated company of the former.

環保科技 的範疇涉及引用技術及程序以控制污染（例如：空氣污染管制、廢物管理、資源循環再造—包括收集、分類和處理可循環再用的物料）；利用較少污染及損耗資源的方法提供服務和產品（例如：利用混合動力引擎或生化燃料以進行綠色運輸）；以及更有效率地善用資源（例如：供水處理程序、節能技術）。

進行研發活動的機構 包括(i)曾為本身及／或其他機構進行內部研發活動的機構；及(ii)透過外判形式進行研發活動的機構。

技術創新活動的開支 應包括下列開支項目：

- 機構為其本身進行的內部研發活動；
- 外判予其他機構進行研發活動；
- 購買土地及樓宇；
- 購置生產用的機器、設備和電腦軟件（包括特別為推出嶄新或經顯著改良產品（貨品或服務）及／或程序而購置的具改良性能的機器、電腦硬件及軟件）；
- 獲取其他外界知識（包括向其他方面購買專利權和非專利發明、專門技能和其他類別的知識，以使用於一間機構的技術嶄新或經顯著改良產品（貨品或服務）及／或程序）；
- 推廣產品或程序創新項目（即直接為了向市場推廣一間機構的技術嶄新或經顯著改良產品（貨品或服務）及／或程序的內部和對外市場推廣活動。有關活動可包括初步市場研究、市場測試和宣傳，但不包括例行市場推廣活動。）；
- 培訓（即為一間機構人員而設的內部或由外界提供的培訓，直接目的是發展及／或推出技術嶄新或經顯著改良的產品（貨品或服務）及／或程序）；以及
- 設計及生產或運送方面的其他準備工作（即為推出技術嶄新或經顯著改良的產品（貨品或服務）及／或程序而實施的程序和所作的技術準備，而有關工作並不納入其他類別之內）。

Environmental technology encompasses technologies and processes to manage pollution (e.g. air pollution control, waste management, recycling – including collection, separation and treatment for reuse); less polluting and less resource-intensive services and goods (e.g. clean transport making use of hybrid engines or biofuels); and ways to manage resources more efficiently (e.g. water supply treatment, energy-saving technologies).

Establishments undertaking R&D activities include (i) the establishments having conducted in-house R&D activities for own use and/or for other organisations; and (ii) those having undertaken R&D activities through contracting-out arrangement.

Expenditure on TI activity should include the expenditure on the following items:

- In-house R&D activities for own establishment;
- Contracted-out R&D activities to other parties;
- Acquisition of land and buildings;
- Acquisition of machinery, equipment and software for production (including machinery and computer hardware and software with improved technological performance specifically purchased to implement technologically new or significantly improved products (goods or services) and/or processes);
- Acquisition of other external knowledge (including purchase of rights to use patents and non-patented inventions, know-how, and other types of knowledge from others for use in an establishment's technologically new or significantly improved products (goods or services) and/or processes);
- Promotion of product or process innovation (i.e. internal or external marketing activities directly aimed at the market introduction of an establishment's technologically new or significantly improved products (goods or services) and/or processes. It may include preliminary market research, market tests and launch advertising, but exclude routine marketing activities.);
- Training (i.e. internal or external training for an establishment's personnel directly aimed at the development and/or introduction of technologically new or significantly improved products (goods or services) and/or processes); and
- Design and other preparations for production or deliveries (i.e. procedures and technical preparations to realise the actual implementation of technologically new or significantly improved products (goods or services) and/or process not covered elsewhere).

實驗發展 是運用來自研究和實際經驗的知識進行有系統工作，並產生新知識。其目的是開發新產品或程序，或為現有的產品或程序作出改良。

研發活動範疇 有助一間機構根據研究的領域，即在哪方面進行研究，劃分研發資源的分配。研發活動的範疇可分為五大類別：自然科學、工程及科技、醫療及衛生科學、社會科學和人文科學及藝術。

本地研究及發展（研發）總開支 是指在某段期間在一個國家或地區內進行的內部研發開支總額，包括由境外機構資助在該國家或地區內進行的研發活動，但不包括支付給境外機構進行的研發活動的開支。根據上述定義，本地研發總開支是全面計算一個國家或地區的研發活動的數量，涵蓋下列機構類別的研發開支：

- (a) 工商機構；
- (b) 高等教育機構；及
- (c) 政府機構。

高等教育機構 包括：

- 大學和其他專上教育機構，不論其資金來源或法律身分；以及
- 與大學或高等教育機構有關或受其直接控制或管理的研究機構、實驗室和診所。

人文科學及藝術 包括歷史、語言文學、藝術和其他人文科學（例如哲學、音樂學、神學）。

資訊系統及科技 包括資訊系統的組織；資訊系統管理；人工智能及專家系統；並行處理及體系結構；電腦圖像；影像處理；語音辨識；認知科學；以及其他資訊科技領域，如資料貯存及檢索和數據保安。

機構內部研發活動 是指在一間機構內進行的研發活動而不論資金的來源。

Experimental development is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.

Field of R&D activity allows an organisation to classify their R&D resource allocation according to the area of research i.e. what area of research is being performed. Five major fields of R&D activity are natural sciences, engineering and technology, medical and health sciences, social sciences, and humanities and the arts.

Gross domestic expenditure on research and development (GERD) is the total in-house R&D expenditure performed within a country or territory during a given period. It includes R&D activities performed within a country or territory and funded from abroad but excludes payments made abroad for R&D activities. As implied by its definition, GERD is a comprehensive measure of R&D activities in a country or territory and it covers the following sectoral R&D expenditure:

- (a) Business sector;
- (b) Higher education sector; and
- (c) Government sector.

Higher education institutions comprise:

- universities and other institutions of post-secondary education regardless of their source of finance or legal status; and
- research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with universities or higher education institutions.

Humanities and the arts cover history; languages and literature; arts and other humanities (such as philosophy, musicology, theology).

Information system and technology cover information system organisation; information system management; artificial intelligence and expert systems; parallel processing and architecture; computer graphics; image processing; speech recognition; cognitive science; and other areas of information technologies such as information storage and retrieval, and data security.

In-house R&D activities refer to R&D activities performed within an establishment regardless of the source of funds.

製造科技 包括機械人、機械操作系統及機電一體化；靈活的製造系統；電腦輔助設計及電腦輔助生產；操控工程；焊接技術；紡織品生產程序及技術；包裝、貯存及運輸；以及生產的安全和品質。

市場推廣創新 是指一間機構實行一種嶄新的市場推廣概念或策略，而這些新概念或策略與該機構現行的市場推廣方法 **截然不同**，亦未嘗在該機構內採用。市場推廣創新涉及顯著改變產品的設計、包裝、陳列方式、推廣或訂價。不包括季節性、定期及常規的市場推廣方式的轉變。

醫療及衛生科學 包括基本醫學、臨床醫學及衛生科學。

納米科技 指通過把物質控制在1至100毫微米的尺度之下（1毫微米 = 10^{-9} 米），開發實用的物料、器材及系統，並且探索物質在同一尺度之下出現的新性質和現象。

自然科學 包括數學及電腦學、物理學、化學、地球科學及有關的環境科學、生物科學以及農業科學。

組織創新 是指一間機構在業務模式（包括知識管理）、工作架構或對外關係上實施 **嶄新的組織方法**。組織創新必需是機構管理層的策略決定。不包括合併或收購。

其他輔助人員 是指工作與研發活動有直接關係的人員，他們通常是研發部門或組別的人員，或研發計劃小組的人員。

包括：

- 文員、秘書、行政人員、以及各類技術、半技術、非技術工人和其他輔助人員。

不包括：

- 只參與一般管理工作如保安、看更和維修人員。

就業人數 包括在職東主、在職合夥人、無酬家屬幫工以及在機構內每日工作不少於一小時的僱員。

Manufacturing technology covers robots, robotic systems and mechatronics; flexible manufacturing systems; computer-aided design (CAD) and computer-aided manufacture (CAM); control engineering; welding technology; textile manufacturing process and technologies; packing, storage and transportation; and safety and quality in manufacturing.

Marketing innovation is the implementation of a new marketing concept or strategy that **differs significantly** from an establishment's existing marketing methods and has not been used before. It requires significant changes in product design or packaging, product placement, product promotion or pricing. Exclude seasonal, regular and other routine changes in marketing methods.

Medical and health sciences cover basic medicine; clinical medicine and health sciences.

Nanotechnology is the development of functional materials, devices and systems through control of matter at the scale of 1 to 100 nanometers (1 nanometer = 10^{-9} meter), and the exploitation of novel properties and phenomena at the same scale.

Natural sciences cover mathematics and computer sciences; physical sciences; chemical sciences; earth and related environmental sciences; biological sciences and agricultural sciences.

Organisational innovation is the implementation of a **new organisational method** in an establishment's business practices (including knowledge management), workplace organisation or external relations that has not been previously used by the establishment. It must be the result of strategic decisions taken by management. Exclude mergers or acquisitions.

Other supporting staff refer to persons whose work is directly associated with the performance of R&D activities. They are usually staff of a R&D department or unit or staff of a R&D project team.

Include:

- clerical, secretarial and administrative personnel; skilled, semi-skilled and unskilled workers in various trades and all other auxiliary personnel.

Exclude:

- security, janitorial and maintenance personnel engaged in general housekeeping activities.

Persons engaged include working proprietors, active partners, unpaid family workers and all employees of an establishment who worked at least for one hour a day in the establishment.

程序開發 指開發新的或經顯著改良的生產方法或提供服務和運送產品的方法。

程序創新 是指一間公司在公司內推行**嶄新或經顯著改良**的生產程序、分銷方法或支援服務或貨品的工序。程序創新不局限於該公司在業界內首先採用的嶄新程序，亦包括該公司新實施在業界內既有的營運程序。程序創新的開發可由該公司或其他機構進行。

例子：

- 添置新的或經改良的生產技術，例如可調節工序的自動設備或即時感應器；
- 印刷工序數碼化；
- 與網站有關的服務和電子商貿（但只提供資料而不設網上服務的網站除外）；
- 電腦輔助設計；
- 實施電子銷售點終端設備；
- 條碼系統；
- 光學數據處理；
- 企業資源策劃系統；
- 客戶關係管理系統；
- 智能卡系統；
- 運輸設備的全球定位追蹤系統；
- 引進自動語音回應系統；以及
- 新的或顯著改良的電腦網絡。

不包括：

- 純粹在組織架構上的改革（例如：重組架構、知識管理、分銷安排）；以及
- 生產、業務、物流處理或控制程序的輕微或例行改變。

產品開發 指開發新產品，而新產品的表現特徵、特性或使用的材料和組件顯著地有別於現有產品；或顯著改善或提升現有產品。

Process development refers to development of new or significantly improved production methods, or methods of supplying services and of delivering products.

Process innovation is the implementation of a *new or significantly improved* production process, distribution method, or support activity for the services or goods of a firm. Process innovations must be new to the firm, but they do not need to be new to the industry. Process innovations could have been originally developed by the firm or by other parties.

Examples:

- installation of new or improved manufacturing technology, such as automation equipment or real-time sensors that can adjust processes;
- digitisation of printing processes;
- web-related services and e-commerce (but exclude those only creating an information site without on-line services);
- Computer Aided Design;
- introduction of Electronic Point of Sale equipment;
- barcode systems;
- optical processing of data;
- Enterprise Resources Planning Systems;
- Customer Relationship Management Systems;
- Smart Card System;
- Global Positioning Systems (GPS) tracking system for transport equipment;
- introduction of automated voice-response system; and
- new or significantly improved computer networks.

Exclude:

- purely organisational innovation (e.g. restructuring of organisation, knowledge management, sub-contracting); and
- minor or routine changes to production, business, logistics or control processes.

Product development refers to the development of new products whose performance characteristics, attributes or use of materials and components differs significantly from existing products; or significant enhancement or upgrading of an existing product.

產品創新 是指一間公司在市場上推出一個**嶄新或經顯著改良**的產品（服務或貨品），這些產品在其功能、應用方面、部件或子系統上皆大為優化。產品創新不局限於該公司在市場上首先推出的嶄新產品，亦包括那些由該公司推出但市場上已有相近產品的新產品。產品創新的開發可由該公司或其他機構進行。

例子：

- 改用經改良的物料（例如：透氣的紡織品、輕巧但堅固的合成物、環保的塑膠）；
- 顯著節約能源的產品（例如：省電燈泡）；
- 以寬頻在互聯網上播放自選視訊；
- 一項新的銀行服務（例如：流動理財服務）；以及
- 一個新的多媒體套裝軟件。

不包括：

- 純粹在外觀上改變或只涉及輕微修改的公司現有產品；以及
- 純粹交易或售賣全部由其他機構生產和發展的嶄新或經顯著改良的產品。

公共科技支援機構 包括下列機構：

- 香港生產力促進局（汽車零部件研究及發展中心）；
- 香港應用科技研究院有限公司（香港資訊及通訊技術研發中心）；
- 香港物流及供應鏈管理應用技術研發中心；
- 香港紡織及成衣研發中心有限公司；以及
- 納米及先進材料研發院有限公司。

這些公共機構參與研究、開發和技術轉移的活動，並由香港特別行政區政府資助部分或全部經費。

研發活動 是指**具創造性及有系統性的工作**。這些工作的目的是為增進知識以發明新產品、設計新程序或開拓現有產品或程序的新用途，以及改進現有的產品、程序或其相關的用途。

Product innovation is the market introduction of a **new or significantly improved** product (service or goods) with respect to its capabilities, user friendliness, components, or sub-systems. Product innovations must be new to the firm, but they do not need to be new to the market. Product innovations could have been originally developed by the firm or by other parties.

Examples:

- change of materials with improved characteristics (e.g. breathable textiles, light but strong composites, environmentally friendly plastics);
- products with significantly reduced energy consumption (e.g. energy efficient light bulbs);
- video on demand via broadband Internet;
- a new banking service (e.g. mobile banking service); and
- a new multimedia software package.

Exclude:

- changes to the firm's existing products which are purely aesthetic appearance or which only involve minor modifications; and
- pure trading or selling of new or significantly improved products wholly produced and developed by other establishments.

Public technology support organisations include the following:

- Hong Kong Productivity Council (Automotive Parts and Accessory Systems R&D Centre);
- Hong Kong Applied Science and Technology Research Institute Company Limited (Hong Kong R&D Centre for Information and Communications Technologies);
- Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies;
- The Hong Kong Research Institute of Textiles and Apparel Limited; and
- Nano and Advanced Materials Institute Limited.

These public organisations engaged in research, development and technology transfer activities. They are partly or wholly financed by the HKSAR Government.

R&D activities refer to **creative and systematic work** undertaken so as to increase the stock of knowledge for devising new and improved products/processes/applications and improve existing products/processes/applications.

研發活動和類似活動的分別，是前者帶有相當的新穎或創新元素，以及能夠解決科學及／或技術方面的疑難，即擁有有關方面的常識和技術的人也不知如何解決的問題。

研發活動可於自然科學、工程及科技、醫療及衛生科學、社會科學和人文科學及藝術等領域進行。

包括：

- 基礎研究（即沒有預設任何特定應用範圍或用途而進行的實驗性或理論性工作）；
- 應用研究（即主要為達到一特定實際目標或目的而進行的研究）；以及
- 為開發新儀器、產品或程序而進行的實驗發展工作。

不包括：

- 科學和技術服務（例如：提供科學或技術資料、一般性資料搜集）；
- 市場研究；以及
- 與專利及牌照有關的活動（例如：買賣或申請專利權）。

為機構本身進行的研發活動 指為機構本身而在機構內進行的內部研發活動。

為其他機構進行的研發活動 指一間機構為其他機構進行的內部研發活動，該等活動是在機構內進行，並可能不收取費用或按訂立合約進行。

研究員／科學家／工程師 是指曾接受科學或技術訓練（一般指完成包括自然科學、工程及科技、醫療及衛生科學、社會科學和人文科學及藝術等領域的專上教育），並有參與研發活動的專業工作的人員，以及監督研發活動的行政人員及其他高層人員。他們同時是構想及創造新知識的專業人員，負責進行研究，並改進或發展概念、理論、模型、技術、儀器、軟件或操作方法。

社會科學 包括心理學、經濟學、教育學和其他社會科學（例如工商管理、法律、政治學、社會學）。

The way to distinguish R&D from similar activities is the presence of an appreciable element of novelty or innovation and the resolution of scientific and/or technological uncertainty, i.e. when the solution to a problem is not readily apparent to someone familiar with the stock of commonly used knowledge and techniques in the area concerned.

R&D activities can be conducted in such areas as natural sciences, engineering and technology, medical and health sciences, social sciences, and humanities and the arts.

Include:

- basic research (i.e. experimental or theoretical work undertaken without any particular application or use in view);
- applied research (i.e. research directed primarily towards a specific practical aim or objective); and
- experimental development work leading to new devices, products or processes.

Exclude:

- scientific and technical services (e.g. scientific and technical information, general-purpose data collection);
- marketing research; and
- activities relating to patents and licenses (e.g. purchase of patents or filling patent applications).

R&D activities conducted for own use refer to in-house R&D performed within an establishment for the interest of the establishment itself.

R&D activities conducted for other organisations refer to in-house R&D performed within an establishment for other organisations, either free or under a contractual arrangement.

Researchers/Scientists/Engineers refer to persons with scientific or technological training (usually with completion of post-secondary education in such areas as natural sciences, engineering and technology, medical and health sciences, social sciences, and humanities and the arts) who are engaged in professional work of R&D activities; and administrators and other high-level personnel who direct R&D activities. They are also professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques, instrumentation, software or operational methods.

Social sciences cover psychology; economics; educational sciences; and other social sciences (such as business management, law, political sciences, sociology).

資金來源 指一間機構進行研發、產品或程序創新項目時所應用資金的來源。在歸類某筆資金來源時，須符合兩個條件：

- 當中必須涉及該筆資金的直接轉移；以及
- 有關資金轉移的**目的**必須為在收取資金的機構內進行研發、產品或程序創新項目，並**實際**用於有關活動。

資金的轉移可以用合約、撥款或捐款形式進行。須歸還的貸款**不算**是轉移。除非資金來源符合上述條件，否則有關研發、產品或程序創新項目的資金應視為**自資**。

技術員 是指參與研發活動的技術工作，並曾接受科技方面的職業或技術訓練及達一定水平的人員。技術員通常是在研究員／科學家／工程師督導下，透過應用概念和運作方法，執行研發工作中的科學及技術任務。

技術創新 是指一間機構在市場上推出一個技術嶄新或經顯著改良的產品（貨品或服務），或在機構內部實施一個技術嶄新或經顯著改良的程序。有關創新可以是源自新的技術發展、現有技術的重新結合或機構所汲取的其他知識的運用。技術創新活動包括任何內部或外判研發活動。

業務總收入 一般指透過售賣貨品和服務獲得的收入。並包括：

- 出租機器和設備的收入；
- 銀行存款的利息；
- 出租／分租土地和樓宇的收入；
- 投資證券、債券、股票所賺取的利息及股息；
- 買賣金融資產的收入／虧損；以及
- 從其他來源獲得的收入，如離岸貨品貿易而得的毛利總額（即銷貨價值減去貨品成本）及佣金。

Source of funds refers to the source from which an organisation has received funds for the performance of R&D, product or process innovation. For the source of funds to be correctly identified, two criteria must be fulfilled:

- there must be a direct transfer of the funds; and
- the transfer must be both *intended* and *used* for the performance of R&D, product or process innovation in the receiving organisation.

The transfers of funds may take the form of contracts, grants or donations. Loans to be repaid are *not* considered transfers. Unless a source fulfilling the above criteria can be identified, funding for supporting R&D, product or process innovation should be considered as *self-financed*.

Technicians refer to persons engaged in that capacity in R&D activities who have received vocational or technical training in a branch of knowledge or technology of a specified standard. They participate in R&D by performing scientific and technical tasks involving the application of concepts and operational methods, and usually work under the supervision of researchers/scientists/engineers.

Technological innovation (TI) refers to the introduction of a technologically new or significantly improved product (goods or service) to the market or implementation of a technologically new or significantly improved process within an establishment. The innovation is based on the results of new technological developments, new combinations of existing technology or utilisation of other knowledge acquired by the establishment. TI activities cover any in-house or contracted-out R&D activities.

Total business receipts in general refer to income received through sales of goods and services. Include also:

- receipts from rental of machinery and equipment;
- interest from deposit in bank;
- rental income from letting/subletting land and premises;
- interest and dividend received from investment in securities, bonds, stocks and shares;
- gain/loss from trading of financial assets; and
- income from other sources, e.g. gross profit (i.e. sales of goods less costs of goods sold) and commissions realised from offshore trade in goods.

附錄乙：資料來源

Appendix B : Data Sources

工商機構的研究及發展（研發）及創新活動

1. 政府統計處透過進行「**創新活動統計調查**」，向工商機構搜集有關研發和創新活動的數據。本處在 2002 年首次進行該項統計調查，目的是協助確定本港的技術水平。在設計此項統計調查時，已參考了由經濟合作與發展組織制定的國際標準，以及工商界及商會的意見。有關這項統計調查的詳情如下。

有關法例

2. 這項統計調查是根據《普查及統計條例》（香港法例第 316 章）第三部進行，並已在香港特別行政區政府憲報於 2002 年 11 月 29 日所刊登的 2002 年第 183 號法律公告上宣布作為一項強制性統計調查。條例規定，政府統計處必須對所有搜集得來可分辨個別機構的資料嚴加保密及只作統計用途，日後只發表整體性的資料，而不會顯示個別機構的資料。

統計調查涵蓋範圍

3. 這項統計調查以政府統計處備存的機構記錄庫為抽樣框。此記錄庫是根據稅務局商業登記署的資料更新。這項統計調查涵蓋下列行業組別的機構：

涵蓋的行業組別

製造業
電力及燃氣業
建造業（只包括就業人數 10 人或以上的機構）
進出口貿易、批發及零售業以及住宿及膳食服務業
運輸、倉庫及速遞服務業
資訊及通訊業
金融及保險、地產、專業及商用服務業

個人、社會及康樂活動服務業

Research and development (R&D) and innovation activities in the business sector

1. The Census and Statistics Department (C&SD) collected data relating to R&D and innovation activities in the business sector through the **Survey of Innovation Activities**. The survey was first conducted by the Department in 2002 to help ascertain the level of technological sophistication of the economy. In designing the survey, reference has been made to relevant international standards promulgated by the Organisation for Economic Cooperation and Development and views of the business sector and trade associations. Details of the survey are given below.

Legislation

2. The survey is conducted under Part III of the Census and Statistics Ordinance (Chapter 316 of the Laws of Hong Kong). It was notified as a mandatory statistical survey in Legal Notice 183 of 2002 in the Government of the HKSAR Gazette of 29 November 2002. The Ordinance stipulates that all collected information which may enable identification of individual establishments should be kept in strict confidence and be used solely for statistical purposes. Only aggregate information, which does not reveal details of individual establishments, will be released.

Survey coverage

3. The sampling frame for the survey is the Central Register of Establishments, which is a comprehensive register maintained by C&SD and updated by reference to records of the Business Registration Office of the Inland Revenue Department. The survey covers establishments engaged in the following industry groupings:

Industry groupings covered

Manufacturing
Electricity and gas
Construction (establishments with 10 or more persons engaged)
Import/export, wholesale and retail trades, and accommodation and food services
Transport, storage and courier services
Information and communications
Financing and insurance, real estate, professional and business services
Personal, social and recreational services

4. 為提高成本效益和運作效率，一些經濟貢獻相對較小，以及預期較少投入研發／創新活動的行業及／或機構類別（例如農業及漁業、採礦及採石業、就業人數不足 10 人的建造業機構、的士、公共小巴和個人服務業），並沒有包括在本統計調查的範圍內。

統計期

5. 這項統計調查搜集 2016 年或在 2016 年 1 月 1 日至 2017 年 3 月 31 日期間任何連續 12 個月的數據，視乎個別機構的會計慣例而定。至於在上述期間開業或停業的機構，所搜集的資料是指該等機構在有關會計年度內有經營業務期間的數據。

樣本設計

6. 這項統計調查的抽樣框是先以行業組別分層，然後再按就業人數分層。被識別為可能會進行研發和／或創新活動的機構，全納入統計調查的樣本內。這些機構包括在政府統計處以往進行的統計調查中報稱有進行研發活動的機構，和透過各種渠道如剪報、網上搜尋以及諮詢政府部門、工商機構、高等教育機構和商會後確定的機構。至於其他機構，則經科學方法抽選樣本。被抽選作為統計調查對象的機構共 6 048 間。根據統計調查結果估計，在統計調查涵蓋範圍內的機構總數約為 273 900 間。

4. In regard to cost effectiveness and operational considerations, some industries and/or some categories of establishments (e.g. agriculture and fishing; mining and quarrying; construction establishments each with less than 10 persons engaged; taxis; public light buses; personal services) with relatively smaller economic contribution and presumably not so involved in R&D/innovation activities are not covered in this survey.

Survey reference period

5. Data collected in the survey referred to the calendar year 2016, or any consecutive 12-month period between 1 January 2016 and 31 March 2017 according to the accounting practices of individual establishments. For establishments which commenced or ceased operation within their respective accounting period defined above, data collected were for that part of the period during which the establishments were in operation.

Sample design

6. The sampling frame for the survey was stratified by industry group and, within each industry group, by employment size. Establishments identified as potential R&D and/or innovation performers were fully covered. These included establishments with reported R&D activities in previous C&SD's surveys and those identified through various channels such as newspaper cuttings, web search, and consultations with government departments, business establishments, higher education institutions and trade associations. As for the other establishments, a scientific sample was drawn. Altogether 6 048 establishments were selected for enumeration. The total number of establishments falling within the scope of the survey was estimated to be 273 900 based on the results of the survey.

數據搜集

7. 數據搜集工作在 2017 年 4 月開始。統計調查問卷及附註均郵寄予被抽選的機構。此外，本處亦製備問卷的電子版本，以供索取應用。有需要時，外勤人員會造訪或致電個別機構，協助受訪者填報問卷，或核實已填妥問卷內的資料。截至數據搜集期完結時，成功訪問的機構有 4 740 間，未有回應的有 99 間，未能接觸或在統計期內沒有營業的有 1 209 間。

估值的可靠性

8. 這項統計調查的結果受抽樣誤差和非抽樣誤差的影響。本刊所載的估價是根據一個特定樣本所得的資料編製。以同樣的抽樣方式，可抽選出許多大小相同的樣本，而是項統計調查的樣本為眾多樣本的其中之一。由於每次抽選的樣本都有所不同，因此不同樣本得出的估價亦互有差異。抽樣誤差是計算這些差異的統計數量，可用以量度從一個特定樣本所得的估價，在估計總體數據方面的精確程度。

9. 本刊在評估各種變數估價的精確程度時，採用了離中系數。離中系數為一統計量數，顯示估計數值的相對精確性。離中系數的計算方法，是將估價的抽樣誤差除以估價本身的數值，再以百分比表示。離中系數越低，估計數值越精確。

10. 統計變數的 95% 置信區間的上下限分別在樣本估計值之上及之下相距兩個標準誤差。若以同樣方法抽取同樣大小的樣本，每個樣本計算其置信區間，可預期當中有 95% 的置信區間將包含變數的實際值。

Data collection

7. Data collection work started in April 2017. Survey questionnaires together with the explanatory notes were mailed to the selected establishments. Electronic template of the questionnaire was also available for use upon request. Field officers of the Department visited/telephoned individual establishments to assist respondents in completing the questionnaires if necessary, or to verify the information in the completed questionnaires. By the end of the data collection period, 4 740 establishments were successfully enumerated, 99 failed to respond, and 1 209 could not be located or were found to be inactive in the survey reference period.

Reliability of the estimates

8. Results of the survey are subject to sampling and non-sampling errors. The estimates contained in this publication are based on information obtained from a particular sample, which is one of many samples that could be selected using the same sampling design. Estimates derived from different samples may differ from each other. Sampling error is a measure of these variations and is thus a measure of the precision of an estimate derived from the particular sample in estimating the population parameter to be measured.

9. For assessing the precision of the estimates for various variables in this publication, the coefficient of variation (CV) is used. The CV is a statistical measure to indicate the relative precision of an estimate. The CV is obtained by expressing the sampling error of an estimate as a percentage of the value of estimate itself. The smaller the CV, the more precise is the value of the estimate.

10. A 95% confidence interval (CI) for a statistical variable is bounded by upper and lower limits which are two standard errors respectively above and below the sample estimate. If similar confidence intervals are constructed for different samples of the same size selected using the same sampling method, one would expect that 95% of them will cover the true value of the variable.

11. 本刊所載列的主要變數估值的離中系數及統計變數的 95% 置信區間如下：

11. The CV and 95% CI of the estimates of the key variables in this publication are given below :

變數 Variable	估值 Estimate	離中系數 CV	95% 置信區間 95% CI
有進行研發活動的機構(包括從事內部研發活動的機構及把研發活動外判的機構)的百分比 Percentage of establishments having undertaken R&D activities (including establishments with in-house R&D activities and establishments with R&D activities contracted out to other parties)	1.4%	9.6%	1.2% – 1.7%
有進行技術創新活動的機構的百分比 Percentage of establishments having undertaken TI activities	2.7%	9.0%	2.2% – 3.2%
有進行組織創新活動的機構的百分比 Percentage of establishments having undertaken organisational innovation activities	3.0%	14.0%	2.2% – 3.8%
有進行市場推廣創新活動的機構的百分比 Percentage of establishments having undertaken marketing innovation activities	7.5%	9.8%	6.1% – 8.9%
內部研發活動開支(十億港元) Expenditure on in-house R&D activities (HK\$ billion)	8.53	5.2%	7.66 – 9.39
技術創新活動開支(十億港元) Expenditure on TI activities (HK\$ billion)	19.96	3.0%	18.78 – 21.14

高等教育及政府機構的研發活動

R&D activities in the higher education and government sectors

12. 政府統計處自 2000 年開始搜集高等教育機構和政府機構的研發資料。高等教育機構的研發資料涉及大學教育資助委員會(教資會)資助的高等教育院校,而有關的統計數字是根據教資會的統計記錄整理而成。

12. The C&SD has started to collect R&D data for the higher education and government sectors since 2000. R&D data on the higher education sector are confined to the higher education institutes funded by University Grants Committee (UGC). The relevant statistics are compiled based on the statistical records obtainable from UGC.

13. 至於政府機構,本處在 2017 年 6 月初把供自行填報的統計表格以電郵方式寄予所有政府決策局、部門和半政府機構(包括公共科技支援機構)以搜集數據。有需要時,本處職員會致電有關機構跟進以核實搜集得來的數據。

13. Regarding the government sector, electronic template of a self-administered statistical return was sent by email to all government bureaux, departments and quasi-government organisations (including public technology support organisations) in early June 2017 for data collection. Verification of data collected had been made through telephone follow-ups if necessary.

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