

2021 年
香港創新活動統計
Hong Kong
Innovation Activities Statistics 2021



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2021 年 香港創新活動統計 Hong Kong Innovation Activities Statistics 2021

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目錄

Contents

		頁數 Page
緒言	Introduction	iii
大綱	Synopsis	vii
統計圖表目錄	List of Statistical Tables and Charts	x
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 situation of research and development (R&D) activities	1
工商機構的研發活動	R&D activities in the business sector	3
高等教育機構的研發活動	R&D activities in the higher education sector	11
政府機構的研發活動	R&D activities in the government sector	11
2. 工商機構的創新活動	Innovation Activities in the Business Sector	
工商機構的創新活動普及情況	Prevalence of innovation activities in the business sector	13
產品創新	Product innovation	14
業務程序創新	Business process innovation	15
創新活動的開支	Expenditure on innovation activities	15
3. 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	20
應用研發及創新活動	Applied R&D and innovation activities	20

統計表	Statistical Tables	30
附錄	Appendices	
甲. 用語及定義	A. Terms and Definitions	62
乙. 資料來源	B. Data Sources	72
獲取政府統計處刊物的方法	Means of Obtaining Publications of the Census and Statistics Department	76

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，亦涉及產品和業務程序創新的活動。這些活動有助機構提升其競爭力和業務表現。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，當中尤與研發活動相關的至為重要。本刊物內的研發活動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，而其他創新活動統計數字則只涉及工商機構。

2. 工商機構的研發和其他創新活動統計數字是透過「創新活動統計調查」搜集得來的資料編製而成，這是政府統計處自 2001 年統計年度開始就此課題進行的專項統計調查。高等教育機構的研發活動統計數字則主要根據大學教育資助委員會（教資會）所提供的行政記錄編製而成，而政府機構的研發活動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）搜集得來的資料編製而成。

3. 本刊物的第 1 章闡述 2021 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分析，亦刊載了工商機構的研發開支、研發人員及其他相關特色（例如研發活動的協作安排）的詳細統計數字。第 2 章集中描述 2021 年工商機構的創新活動的特色。第 3 章描述香港特別行政區政府對本港研發及其他創新活動的支援，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、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 business process 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, among which those on R&D activities are the most importance ones. In this publication, statistics on R&D activities cover three institutional sectors, viz. business, higher education and government sectors, while statistics on other innovation activities only relate to the business sector.

2. Statistics on R&D and other innovation activities 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. Statistics on R&D activities for the higher education sector are compiled mainly based on administrative data provided by the University Grants Committee (UGC), 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 depicts the overall situation of R&D activities in Hong Kong in 2021, with respective analyses on R&D activities in the business, higher education and government sectors. Detailed statistics on R&D expenditure, R&D personnel and other relevant characteristics such as collaboration arrangements on R&D activities in the business sector are also published. Chapter 2 focuses on the characteristics of innovation activities in the business sector in 2021. Chapter 3 portrays the support provided by the Government of the Hong Kong Special Administrative Region in promoting R&D and other innovation activities in Hong Kong, of which the information on applied R&D and innovation activities is furnished by the Innovation and Technology Commission. Details of the methodology, concepts, definitions and data sources are given in Appendices A and B.

4. 政府統計處自2008年統計年度開始編製這本刊物，所發布的創新活動的統計數字與過往透過《工商業創新活動按年統計調查報告》內所載統計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活動的統計數字，以更全面展示本港創新活動的發展情況。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」抽選樣本、搜集數據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」採用前及採用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年統計年度的工商機構的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. 就機構單位規模分析工商機構的創新活動時，機構單位按其就業人數分為小型、中型及大型三個類別，詳情如下：

4. This publication, introduced since the reference year of 2008, has similar coverage of statistics on innovation activities 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 those on R&D activities for the higher education and government sectors. It provides a more complete depiction of the development of 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 adopting HSIC Version 2.0, the C&SD has re-compiled key statistics on innovation activities in the business sector dating back to the reference year of 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 analyses on 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:

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

8. 根據經濟合作與發展組織（經合組織）發布的國際指引，所有涉及研發活動的費用都應包括在研發開支內，以充分反映一個經濟體的研發表現。尤其在某些情況下，機構可免費或以補貼價使用研發設施。這些研發設施的使用成本或「市場價值」必須適當地計算，並包括在研發開支的估算當中，以反映研發設施的實際成本。

9. 按照國際指引，政府統計處自2018年統計年度起，從不同持份者搜集更多涉及研發設施使用情況的資料，以估算有關的隱含使用成本，並將該估計數字包括在研發開支中。2017年的研發開支亦以改良的估算方法重新編製，然而只能按進行研發活動的機構類別作進一步分析。至於2016年及之前的統計年度，由於缺乏所需的相關資料，因此未能重新編製包含研發設施的隱含使用成本的研發開支。

10. 此外，經合組織於2018年10月發布有關工商機構創新類別的最新修訂，重組過往的四類創新（即產品、程序、組織和市場推廣）為兩大類別，名為「產品創新」和「業務程序創新」。基於這項修訂，2019年統計年度及以後所涵蓋的創新活動範圍與較早年發布的有所不同。

11. 在本刊物內，由於數字經四捨五入，分項總和未必與總數相等，而貨幣數字均以港元為單位；研發開支相對本地生產總值的比率是根據2022年11月發布的本地生產總值數字計算。

8. According to the international guidelines promulgated by the Organisation for Economic Co-operation and Development (OECD), all costs incurred in R&D activities should be covered so as to fully reflect the R&D performance of an economy. In particular, the R&D facilities may be available to institutions free of charge or at a subsidised rate in some cases. The user cost of these facilities, or the “market value”, should be properly calculated and included in the estimation of R&D expenditure in order to reflect the realistic cost of R&D facilities.

9. Following international guidelines, the C&SD has started to collect additional information on the usage of R&D facilities from different stakeholders for estimating the implicit user cost and including such estimates in the R&D expenditure as from the reference year of 2018. The R&D expenditure for 2017 has also been re-compiled according to the enhanced estimation method, yet could only be analysed further by performing sector. As for 2016 and earlier reference years, the R&D expenditure with the implicit user cost of R&D facilities included could not be re-compiled owing to the lack of required information.

10. Moreover, the OECD announced the latest revision on types of innovation in the business sector in October 2018, i.e. regrouping of the previous four types of innovation (viz. product, process, organisational and marketing) into two main types, namely “product innovation” and “business process innovation”. Owing to this revision, the coverage of innovation activities for the reference year of 2019 onwards is different from that of earlier years.

11. In this publication, figures may not add up to the total due to rounding and all monetary figures are in Hong Kong dollars. The ratio of R&D expenditure to Gross Domestic Product (GDP) is calculated based on the latest GDP series released in November 2022.

12. 本刊物內各代號的含意如下：

- N.A. 不適用
§ 金額數值少於5萬元或百分比少於0.05%
@ 數字在日後會作出修訂
* 修訂數字
*** 為使個別機構單位的資料得以保密，數字不予公布。

12. The following symbols are used throughout this publication :

- N.A. Not applicable
§ Dollar values less than \$50,000 or percentages less than 0.05%
@ Figures are subject to revision later on
* Revised figures
*** Figures are not released to safeguard confidentiality of information of individual establishments.

大綱

Synopsis

1. 一個經濟體的創新及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（經合組織）所倡議的國際定義，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嶄新和改良的產品、程序或用途，以及為改進現有的產品、程序或用途。研發活動通常帶有相當程度的新穎或創新元素，以及能夠解決科學及／或技術方面的疑難，並可於自然科學、工程及科技、醫療及健康科學、社會科學和人文科學及藝術等範疇進行。

2. 在 2021 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 278.27 億元，較 2020 年上升 5%，而本地生產總值在同期錄得 7% 的增幅。本地研發總開支相對本地生產總值的比率由 2020 年的 0.99% 輕微下跌至 2021 年的 0.97%。（表 1.1）

3. 在 2021 年，工商機構的內部研發活動總開支（包括研發活動所涉及的勞工成本、其他經常開支和資本開支）為 116.99 億元，較 2020 年上升 6%。（表 1.1）

4. 近年高等教育機構的內部研發活動總開支一直有上升的趨勢。在 2021 年，高等教育機構的內部研發活動總開支達 147.35 億元，較 2020 年上升 4%。政府機構（主要是公共科技支援機構）在 2021 年的內部研發活動總開支達 13.92 億元，較 2020 年上升 1%。（表 1.1）

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. According to the international definition promulgated by the Organisation for Economic Co-operation 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 to improve the existing products/processes/applications. R&D activities usually carry an appreciable element of novelty or innovation and the resolution of scientific and/or technological uncertainty. They can be conducted in such fields as natural sciences, engineering and technology, medical and health sciences, social sciences, and humanities and arts.

2. In 2021, 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, higher education and government sectors (including public technology support organisations)] amounted to \$27,827 million, representing an increase of 5% when compared with 2020, whereas the Gross Domestic Product (GDP) increased by 7% during the same period. GERD as a ratio to GDP slightly decreased from 0.99% in 2020 to 0.97% in 2021. (Table 1.1)

3. In 2021, the total expenditure on in-house R&D activities (including labour cost, other current expenditure and capital expenditure on R&D activities) in the business sector was \$11,699 million, representing an increase of 6% when compared with 2020. (Table 1.1)

4. The total expenditure on in-house R&D activities in the higher education sector has been on a rising trend in recent years. In 2021, the total expenditure on in-house R&D activities in the higher education sector reached \$14,735 million, up by 4% when compared with 2020. The total expenditure on in-house R&D activities in the government sector (mainly public technology support organisations) amounted to \$1,392 million in 2021, up by 1% when compared with 2020. (Table 1.1)

5. 另一項研發活動的指標是「研發人員」數目。這項指標量度本港機構在進行研發活動所投放的人力資源。「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。為了反映投放於研發活動的實際人力資源，研發人員數目是以「相當於全日制的人數」計算，即根據有關統計年度內已投放於研發活動的工作年總數作估算。

6. 在 2021 年，研發人員總數（以相當於全日制的人數計算）為 37 455 人，而 2020 年的相應人數為 36 106 人。大部分的研發人員從事高等教育機構和工商機構，分別佔 2021 年研發人員總數的 63% 和 35%。（表 1.1）

7. 創新並不局限於技術的開發和使用。工商機構單位亦可以透過推行嶄新或經顯著改良的業務程序（例如生產程序、分銷方法、市場推廣方式、行政管理模式、支援所提供的貨品或服務的工序等），以提升其競爭力及業務表現。

8. 根據經合組織發表的國際指引，創新活動包括研發、產品及業務程序創新的活動。在 2021 年，約 2% 的工商機構單位曾進行創新活動。工商機構的創新活動總開支為 286.84 億元。（表 2.1）

5. Another indicator of R&D activities is the number of R&D personnel which measures the manpower resources deployed to R&D activities performed by organisations 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, the number of R&D personnel is measured in terms of full-time equivalent (FTE), which is estimated on the basis of the total number of person-years deployed to R&D activities during the reference year.

6. In 2021, there were 37 455 R&D personnel (in FTE) in total, as compared with 36 106 in 2020. Most of them were engaged in the higher education and business sectors, which accounted for 63% and 35% respectively of the total number of R&D personnel in 2021. (Table 1.1)

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 business processes (e.g. production process, distribution method, marketing approach, administration and management practice, supporting activity for goods or services provided, etc.).

8. According to the international guidelines promulgated by the OECD, innovation activities comprise R&D, product and business process innovation activities. In 2021, about 2% of the business establishments had undertaken innovation activities. Total expenditure on innovation activities in the business sector amounted to \$28,684 million. (Table 2.1)

2019 年至 2021 年的研發開支及研發人員數目
R&D expenditure and number of R&D personnel, 2019 to 2021

研發開支 (百萬元) R&D Expenditure (\$ million)	2019	2020	2021
本地研發總開支 GERD =[a]+[b]+[c]	26,333 (+8%) [0.93%]	26,554 (+1%) [0.99%] [@]	27,827 (+5%) [0.97%] [@]
[a] 工商機構 Business sector	11,616 (+6%) [0.41%]	11,044 (-5%) [0.41%] [@]	11,699 (+6%) [0.41%] [@]
[b] 高等教育機構 Higher education sector	13,432 (+9%) [0.47%]	14,129 (+5%) [0.53%] [@]	14,735 (+4%) [0.51%] [@]
[c] 政府機構 Government sector	1,284 (+12%) [0.05%]	1,380 (+8%) [0.05%] [@]	1,392 (+1%) [0.05%] [@]
研發人員數目 (以相當於全日制的人數計算) Number of R&D personnel (in FTE)			
整體研發人員數目 Overall number of R&D personnel =[d]+[e]+[f]	35 416 (+5%)	36 106 (+2%)	37 455 (+4%)
[d] 工商機構 Business sector	13 748 (+4%)	13 335 (-3%)	13 002 (-3%)
[e] 高等教育機構 Higher education sector	20 643 (+6%)	21 715 (+5%)	23 423 (+8%)
[f] 政府機構 Government sector	1 025 (+9%)	1 056 (+3%)	1 030 (-2%)

註釋：圓括號內數字為按年變動百分率。

方括號內數字為相應研發開支相對本地生產總值的比率。

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

Figures in square brackets refer to the ratios of corresponding R&D expenditure to GDP.

統計圖表目錄

List of Statistical Tables and Charts

研究及發展（研發）活動		Research and Development (R&D) Activities		頁數 Page
表 1.1	按進行研發活動的機構類別劃分的本地研發總開支及研發人員的統計數字	Table 1.1	Statistics on gross domestic expenditure on R&D and R&D personnel by performing sector	30
表 1.2	按進行研發活動的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)	31
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	32
表 1.4	按進行研發活動的機構類別及職能類別劃分的研發人員數目（以相當於全日制的人數計算）	Table 1.4	Number of R&D personnel (in FTE) by performing sector by type of function	33
表 1.5	按選定行業組別／機構單位規模劃分的 2021 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 2021 by selected industry grouping/size of establishment	34
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／機構單位規模劃分的 2021 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 2021 by type of R&D expenditure (i.e. current and capital expenditure) by selected industry grouping/size of establishment	35
表 1.7	按研究類別及選定行業組別／機構單位規模劃分的 2021 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 2021 by type of research by selected industry grouping/size of establishment	36
表 1.8	按研發活動範疇及選定行業組別／機構單位規模劃分的 2021 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 2021 by field of R&D activity by selected industry grouping/size of establishment	37
表 1.9	按科技領域及選定行業組別／機構單位規模劃分的 2021 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 2021 by technology area by selected industry grouping/size of establishment	38
表 1.10	按資金來源及選定行業組別／機構單位規模劃分的 2021 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 2021 by source of funds by selected industry grouping/size of establishment	39

			頁數 Page	
表 1.11	按職能類別及選定行業組別／機構單位規模劃分的 2021 年工商機構的研發人員數目（人數和以相當於全日制的人數計算）	Table 1.11	Number of R&D personnel (in headcount and FTE) in the business sector in 2021 by type of function by selected industry grouping/size of establishment	40
表 1.12	按教育程度及選定行業組別／機構單位規模劃分的 2021 年工商機構的研發人員數目（人數和以相當於全日制的人數計算）	Table 1.12	Number of R&D personnel (in headcount and FTE) in the business sector in 2021 by level of education by selected industry grouping/size of establishment	41
表 1.13	按進行研發活動的機構所在地及選定行業組別／機構單位規模劃分的 2021 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 2021 by location of party performing R&D activities by selected industry grouping/size of establishment	42
表 1.14	按進行研發活動的機構類別劃分的 2021 年工商機構的外判研發活動總開支	Table 1.14	Total expenditure on contracted-out R&D activities in the business sector in 2021 by type of party performing R&D activities	43
表 1.15	按進行研發活動的機構所在地劃分的 2021 年工商機構的外判研發活動總開支	Table 1.15	Total expenditure on contracted-out R&D activities in the business sector in 2021 by location of party performing R&D activities	44
表 1.16	按資金來源劃分的 2021 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 2021 by source of funds	45
表 1.17	按有否就研發活動和其他機構訂立協作安排及協作機構的類別劃分的在 2021 年有進行研發活動的工商機構單位分布	Table 1.17	Distribution of business establishments having undertaken R&D activities in 2021 by whether having collaboration arrangements on R&D activities with other organisations and type of collaborated organisation	46
表 1.18	按有否就研發活動和其他機構訂立協作安排及協作機構的所在地劃分的在 2021 年有進行研發活動的工商機構單位分布	Table 1.18	Distribution of business establishments having undertaken R&D activities in 2021 by whether having collaboration arrangements on R&D activities with other organisations and location of collaborated organisation	47
圖 1.1	按進行研發活動的機構類別劃分的 2021 年研發人員（以相當於全日制的人數計算）分布	Chart 1.1	Distribution of R&D personnel (in FTE) in 2021 by performing sector	3

			頁數 Page	
圖 1.2	按研發開支類別(即經常和資本開支)及選定行業組別/機構單位規模劃分的 2021 年工商機構的內部研發活動總開支	Chart 1.2	Total expenditure on in-house R&D activities in the business sector in 2021 by type of R&D expenditure (i.e. current and capital expenditure) by selected industry grouping/size of establishment	4
圖 1.3	按研究類別劃分的 2021 年工商機構的內部研發活動總開支分布	Chart 1.3	Distribution of total expenditure on in-house R&D activities in the business sector in 2021 by type of research	5
圖 1.4	按研發活動範疇劃分的 2021 年工商機構的內部研發活動總開支分布	Chart 1.4	Distribution of total expenditure on in-house R&D activities in the business sector in 2021 by field of R&D activity	5
圖 1.5	按科技領域劃分的 2021 年工商機構的內部研發活動總開支分布	Chart 1.5	Distribution of total expenditure on in-house R&D activities in the business sector in 2021 by technology area	6
圖 1.6	按選定行業組別劃分的 2021 年工商機構的研發人員(以相當於全日制的人數計算)分布	Chart 1.6	Distribution of R&D personnel (in FTE) in the business sector in 2021 by selected industry grouping	7
圖 1.7	按教育程度劃分的 2021 年工商機構的研發人員(以相當於全日制的人數計算)分布	Chart 1.7	Distribution of R&D personnel (in FTE) in the business sector in 2021 by level of education	7
圖 1.8	按進行研發活動的機構類別/所在地劃分的 2021 年工商機構的外判研發活動總開支	Chart 1.8	Total expenditure on contracted-out R&D activities in the business sector in 2021 by type/location of party performing R&D activities	9
圖 1.9	按協作機構類別/所在地劃分的在 2021 年有就研發活動和其他機構訂立協作安排的工商機構單位數目	Chart 1.9	Number of business establishments with collaboration arrangements on R&D activities with other organisations in 2021 by type/location of collaborated organisation	10
工商機構的創新活動		Innovation Activities in the Business Sector		
表 2.1	按選定行業組別/機構單位規模劃分的 2021 年工商機構的創新活動主要統計數字	Table 2.1	Key statistics on innovation activities in the business sector in 2021 by selected industry grouping/size of establishment	48

			頁數 Page	
表 2.2	按選定行業組別／機構單位規模劃分的在 2021 年有進行產品創新／有在市場推出嶄新或經顯著改良的產品的工商機構單位分布	Table 2.2	Distribution of business establishments having undertaken product innovation/introduced new or significantly improved products to the market in 2021 by selected industry grouping/size of establishment	49
表 2.3	按選定行業組別／機構單位規模劃分的在 2021 年有進行產品創新的工商機構單位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益百分比方面的概況	Table 2.3	Profile of business establishments having undertaken product innovation in 2021 in terms of type of party developing product innovation, number of product innovation and percentage contribution of product innovation to business receipts by selected industry grouping/size of establishment	50
表 2.4	按選定行業組別／機構單位規模劃分的在 2021 年有進行業務程序創新的工商機構單位在發展業務程序創新的機構類別和業務程序創新數目方面的概況	Table 2.4	Profile of business establishments having undertaken business process innovation in 2021 in terms of type of party developing business process innovation and number of business process innovation by selected industry grouping/size of establishment	52
表 2.5	按全面推行業務程序創新後所節省的成本開支百分比及選定行業組別／機構單位規模劃分的在 2021 年有進行業務程序創新的工商機構單位分布	Table 2.5	Distribution of business establishments having undertaken business process innovation in 2021 by percentage of cost saving after full implementation of business process innovation by selected industry grouping/size of establishment	53
表 2.6	按創新活動類別及選定行業組別／機構單位規模劃分的 2021 年工商機構的創新活動總開支	Table 2.6	Total expenditure on innovation activities in the business sector in 2021 by type of innovation activity by selected industry grouping/size of establishment	54
表 2.7	按資金來源劃分的 2021 年工商機構的創新活動總開支	Table 2.7	Total expenditure on innovation activities in the business sector in 2021 by source of funds	55
表 2.8	按有否就創新活動(不包括研發活動)和其他機構訂立協作安排及協作機構的類別劃分的在 2021 年有進行創新活動(不包括研發活動)的工商機構單位分布	Table 2.8	Distribution of business establishments having undertaken innovation activities (excluding R&D activities) in 2021 by whether having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations and type of collaborated organisation	56

			頁數 Page	
表 2.9	按有否就創新活動(不包括研發活動)和其他機構訂立協作安排及協作機構的所在地劃分的在 2021 年有進行創新活動(不包括研發活動)的工商機構單位分布	Table 2.9	Distribution of business establishments having undertaken innovation activities (excluding R&D activities) in 2021 by whether having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations and location of collaborated organisation	57
表 2.10	按在 2021 年有進行創新活動的目的及其重要程度劃分的工商機構單位分布	Table 2.10	Distribution of business establishments by objective of having undertaken innovation activities in 2021 and its degree of importance	58
表 2.11	按在 2021 年沒有進行創新活動的原因及選定行業組別/機構單位規模劃分的工商機構單位分布	Table 2.11	Distribution of business establishments by reason for not having undertaken innovation activities in 2021 by selected industry grouping/size of establishment	59
表 2.12	按阻礙創新活動的因素及其影響程度劃分的在 2021 年有進行創新活動的工商機構單位分布	Table 2.12	Distribution of business establishments having undertaken innovation activities in 2021 by factor hampering innovation activities and its degree of impact	60
圖 2.1	按選定行業組別/機構單位規模劃分的在 2021 年有進行創新活動的工商機構單位百分比	Chart 2.1	Percentage of business establishments having undertaken innovation activities in 2021 by selected industry grouping/size of establishment	14
圖 2.2	按創新活動類別劃分的 2021 年工商機構的創新活動總開支分布	Chart 2.2	Distribution of total expenditure on innovation activities in the business sector in 2021 by type of innovation activity	16
圖 2.3	按協作機構類別/所在地劃分的在 2021 年有就創新活動(不包括研發活動)和其他機構訂立協作安排的工商機構單位數目	Chart 2.3	Number of business establishments with collaboration arrangements on innovation activities (excluding R&D activities) with other organisations in 2021 by type/location of collaborated organisation	18
圖 2.4	按進行創新活動的目的及其重要程度劃分的在 2021 年有進行創新活動的工商機構單位百分比	Chart 2.4	Percentage of business establishments having undertaken innovation activities in 2021 by objective of conducting innovation activities and its degree of importance	19

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 2021 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 278.27 億元，較 2020 年上升 5%，而本地生產總值⁽¹⁾在同期錄得 7% 的增幅。本地研發總開支相對本地生產總值的比率由 2020 年的 0.99% 輕微下跌至 2021 年的 0.97%。（表 1.1）

1.2 在 2021 年，工商機構的內部研發活動總開支（包括研發活動所涉及的勞工成本、其他經常開支和資本開支）為 116.99 億元，較 2020 年上升 6%。按研發開支類別分析，大部分工商機構的內部研發活動總開支為經常開支，佔 79%。（表 1.2）

1.3 近年高等教育機構⁽²⁾的內部研發活動總開支一直有上升的趨勢。在 2021 年，高等教育機構的內部研發活動總開支達 147.35 億元，較 2020 年上升 4%。政府機構（主要是公共科技支援機構）在 2021 年的內部研發活動總開支達 13.92 億元，較 2020 年上升 1%。（表 1.1）

Overall situation of research and development (R&D) activities

1.1 In 2021, 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, higher education and government sectors (including public technology support organisations)] amounted to \$27,827 million, representing an increase of 5% compared with 2020, while the Gross Domestic Product (GDP)⁽¹⁾ increased by 7% during the same period. GERD as a ratio to GDP slightly decreased from 0.99% in 2020 to 0.97% in 2021. (Table 1.1)

1.2 In 2021, the total expenditure on in-house R&D activities (including labour cost, other current expenditure and capital expenditure on R&D activities) in the business sector was \$11,699 million, representing an increase of 6% compared with 2020. Analysed by type of R&D expenditure, the current expenditure accounted for a predominant share of 79% of the total expenditure on in-house R&D activities in the business sector. (Table 1.2)

1.3 The total expenditure on in-house R&D activities in the higher education sector⁽²⁾ has been on a rising trend in recent years. In 2021, the total expenditure on in-house R&D activities in the higher education sector reached \$14,735 million, up by 4% compared with 2020. The total expenditure on in-house R&D activities in the government sector (mainly public technology support organisations) amounted to \$1,392 million in 2021, up by 1% compared with 2020. (Table 1.1)

(1) 2020 年及 2021 年以開支面編製並以當時市價計算的本地生產總值分別為 26,757 億元及 28,697 億元。數字是 2022 年 11 月發表的最新數據，並會在日後作出修訂。

(2) 數字包括大學教育資助委員會（教資會）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。

(1) The expenditure-based GDP estimates at current market prices for 2020 and 2021 are \$2,675.7 billion and \$2,869.7 billion respectively. The figures are the latest data released in November 2022 and are subject to revision later on.

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

1.4 在本刊物中，研發活動的統計數字主要按進行研發活動的機構類別作分析，而研發活動是指機構單位為本身及／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 2021 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 42%、53% 和 5%。雖然政府機構（主要是公共科技支援機構）的研發活動開支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 2021 年的本地研發總開支中，政府提供了 145.25 億元，佔 52%。（表 1.1 及 1.3）

研發人員

1.5 除研發活動開支外，另一項研發活動的重要指標是研發人員數目，以「相當於全日制的人數」計算，即根據有關統計年度內已投放於研發活動的工作年總數作估算。

1.6 在 2021 年，研發人員總數（以相當於全日制的人數計算）為 37 455 人，較 2020 年上升 4%。（表 1.1）

1.7 大部分的研發人員從事高等教育機構⁽³⁾和工商機構，分別佔 2021 年研發人員總數的 63% 和 35%。按職能類別分析，2021 年大部分研發人員是研究員（92%），其次是技術員（5%）及其他輔助人員（3%）。（圖 1.1，表 1.4）

1.4 In this publication, statistics on R&D activities are mainly analysed by performing sector, and R&D activities refer to those 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 in the business, higher education and government sectors constituted 42%, 53% and 5% respectively of GERD in 2021. While expenditure on R&D activities in the government sector (mainly public technology support organisations) represented a relatively smaller share of GERD, it should be noted that the Government plays an instrumental role in facilitating R&D, technology upgrading and innovation through the provision of research facilities, infrastructure as well as funding support to the business and higher education sectors. Analysed by source of funds, R&D expenditure financed by the Government amounted to \$14,525 million or 52% of GERD in 2021. (Tables 1.1 and 1.3)

R&D personnel

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

1.6 A total of 37 455 R&D personnel (in FTE) were recorded in 2021, up by 4% compared with 2020. (Table 1.1)

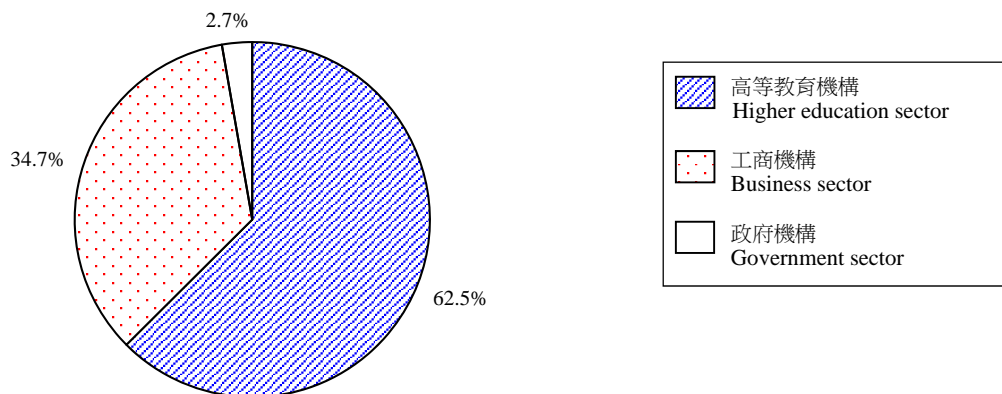
1.7 Most of the R&D personnel were engaged in the higher education⁽³⁾ and business sectors, which accounted for 63% and 35% respectively of the total number of R&D personnel in 2021. Analysed by type of function, the majority of the R&D personnel in 2021 were researchers (92%), followed by technicians (5%) and other supporting staff (3%). (Chart 1.1, Table 1.4)

(3) 高等教育機構的研發人員數字包括教資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，而全日制「研究課程研究生」則指由教資會資助大學運用教資會撥款及外部資金資助修讀研究院研究課程的學生。

(3) Figures on R&D personnel in the higher education sector cover the number of “research related staff” and full-time “research postgraduate (RPg) students” in the respective academic year of the UGC-funded universities. “Research related staff” refer to staff having deployed 80% or more of their working time to research related activities, while full-time “RPg students” refer to RPg students financed by UGC-funded universities using both UGC and external funds.

圖 1.1 按進行研發活動的機構類別劃分的 2021 年研發人員（以相當於全日制的人數計算）分布

Chart 1.1 Distribution of R&D personnel (in FTE) in 2021 by performing sector



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。2021 年工商機構的內部研發活動總開支為 116.99 億元，較 2020 年上升 6%，而相對本地生產總值的比率維持 0.41%。（表 1.1）

按選定行業組別／機構單位規模劃分

1.9 資訊及通訊業的內部研發活動開支佔工商機構的內部研發活動總開支的比重最大（39%），其次是進出口貿易、批發及零售以及住宿及膳食服務業（26%）；和金融及保險、地產、專業及商用服務業（26%）。（圖 1.2，表 1.5）

1.10 在 2021 年所有曾進行研發活動（包括內部及／或外判研發活動）的工商機構單位當中，大型機構單位佔 5%，但其內部研發活動開支佔工商機構內部研發活動總開支的 47%，而中型和小型機構單位的相應比重分別為 35% 和 18%。（圖 1.2，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 \$11,699 million in 2021, up by 6% compared with 2020, while its ratio to GDP maintained at 0.41% in 2021. (Table 1.1)

By selected industry grouping/size of establishment

1.9 The information and communications sector accounted for the largest share (39%) of the total expenditure on in-house R&D activities in the business sector, followed by the import/export, wholesale and retail trades, and accommodation and food services sector (26%); and financing and insurance, real estate, professional and business services sector (26%). (Chart 1.2, Table 1.5)

1.10 Large establishments constituted 5% of the total number of business establishments which undertook R&D activities (including both in-house and/or contracted-out R&D activities) in 2021. However, they accounted for 47% of the total expenditure on in-house R&D activities in the business sector, as compared with 35% and 18% by medium and small establishments respectively. (Chart 1.2, Table 1.5)

按研發開支類別劃分

By type of R&D expenditure

1.11 經常開支（92.85 億元）和資本開支（24.14 億元）分別佔工商機構的內部研發活動開支的 79% 和 21%。
（圖 1.2，表 1.6）

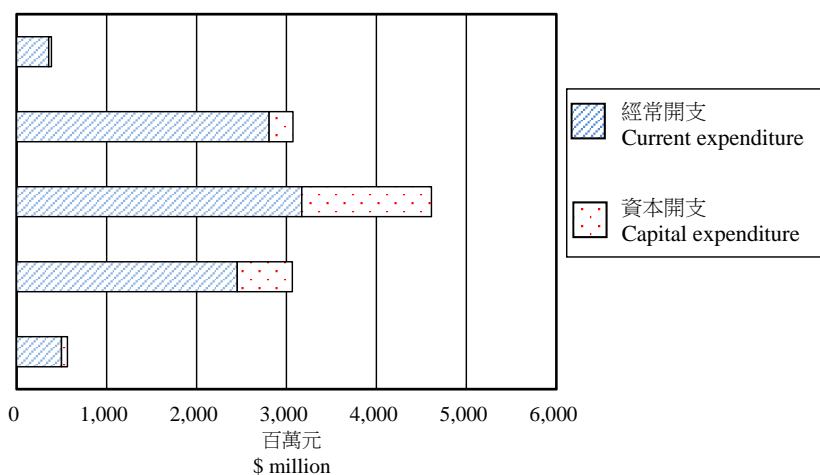
1.11 The proportions of current expenditure (\$9,285 million) and capital expenditure (\$2,414 million) on in-house R&D activities in the business sector were 79% and 21% respectively. (Chart 1.2, Table 1.6)

圖 1.2 按研發開支類別（即經常和資本開支）及選定行業組別／機構單位規模劃分的 2021 年工商機構的內部研發活動總開支
Chart 1.2 Total expenditure on in-house R&D activities in the business sector in 2021 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

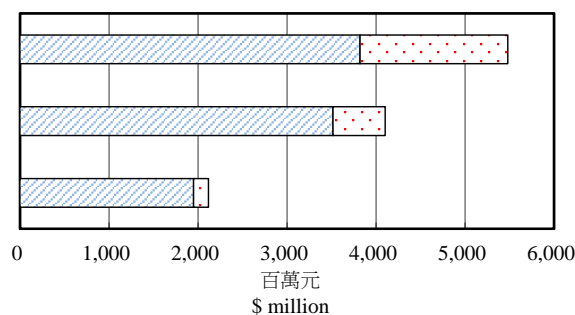
製造
Manufacturing
進出口貿易、批發及零售以及住宿及膳食服務
Import/export, wholesale and retail trades, and accommodation and food services
資訊及通訊
Information and communications
金融及保險、地產、專業及商用服務
Financing and insurance, real estate, professional and business services
其他
Others



按機構單位規模劃分

By size of establishment

大型
Large
中型
Medium
小型
Small



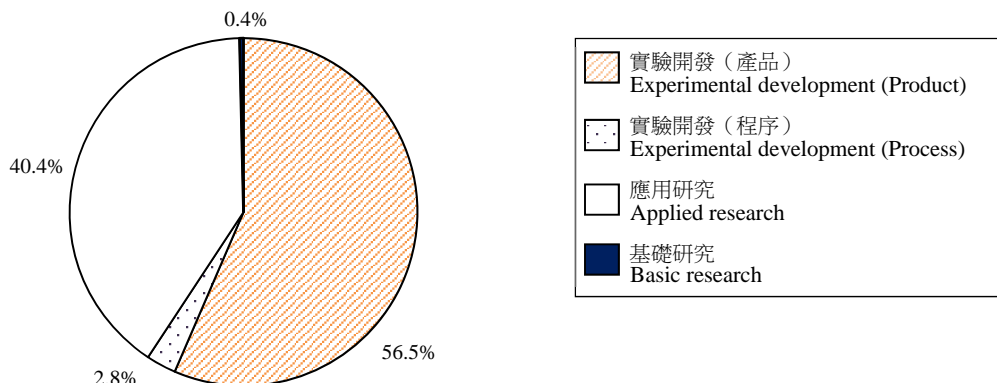
按研究類別劃分

By type of research

1.12 工商機構的內部研發活動總開支主要投放於商業應用有關的研究，當中在 2021 年最大部分是用於實驗開發（59%），其次是應用研究（40%）和基礎研究（0.4%）。（圖 1.3，表 1.7）

1.12 The total expenditure on in-house R&D activities in the business sector was mainly incurred in research related to business applications, of which the largest share in experimental development (59%), followed by applied research (40%) and basic research (0.4%) in 2021. (Chart 1.3, Table 1.7)

圖 1.3 按研究類別劃分的 2021 年工商機構的內部研發活動總開支分布
Chart 1.3 Distribution of total expenditure on in-house R&D activities in the business sector in 2021 by type of research



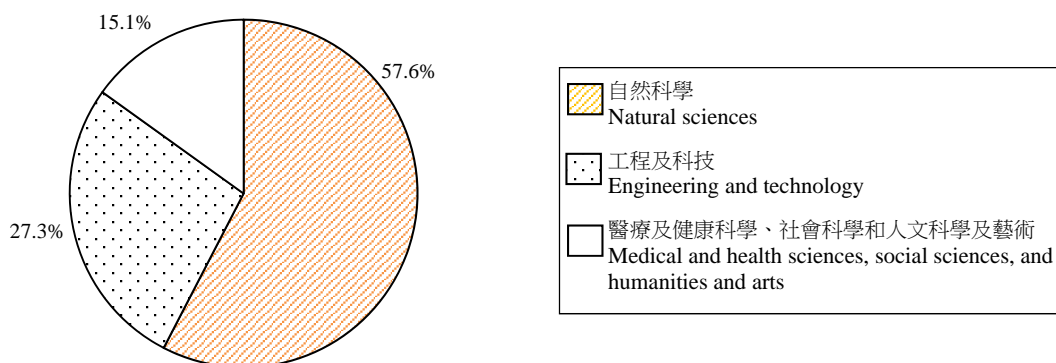
按研發活動範疇劃分

1.13 2021 年大部分的工商機構的內部研發活動總開支是用於自然科學（58%）和工程及科技（27%）範疇，而其他範疇（包括醫療及健康科學、社會科學和人文科學及藝術）則相對佔較小部分（15%）。（圖 1.4，表 1.8）

By field of R&D activity

1.13 A predominant portion of the total expenditure on in-house R&D activities in the business sector in 2021 was directed to the fields of natural sciences (58%), and engineering and technology (27%), whereas a relatively smaller portion to other fields (including medical and health sciences, social sciences, and humanities and arts) (15%). (Chart 1.4, Table 1.8)

圖 1.4 按研發活動範疇劃分的 2021 年工商機構的內部研發活動總開支分布
Chart 1.4 Distribution of total expenditure on in-house R&D activities in the business sector in 2021 by field of R&D activity

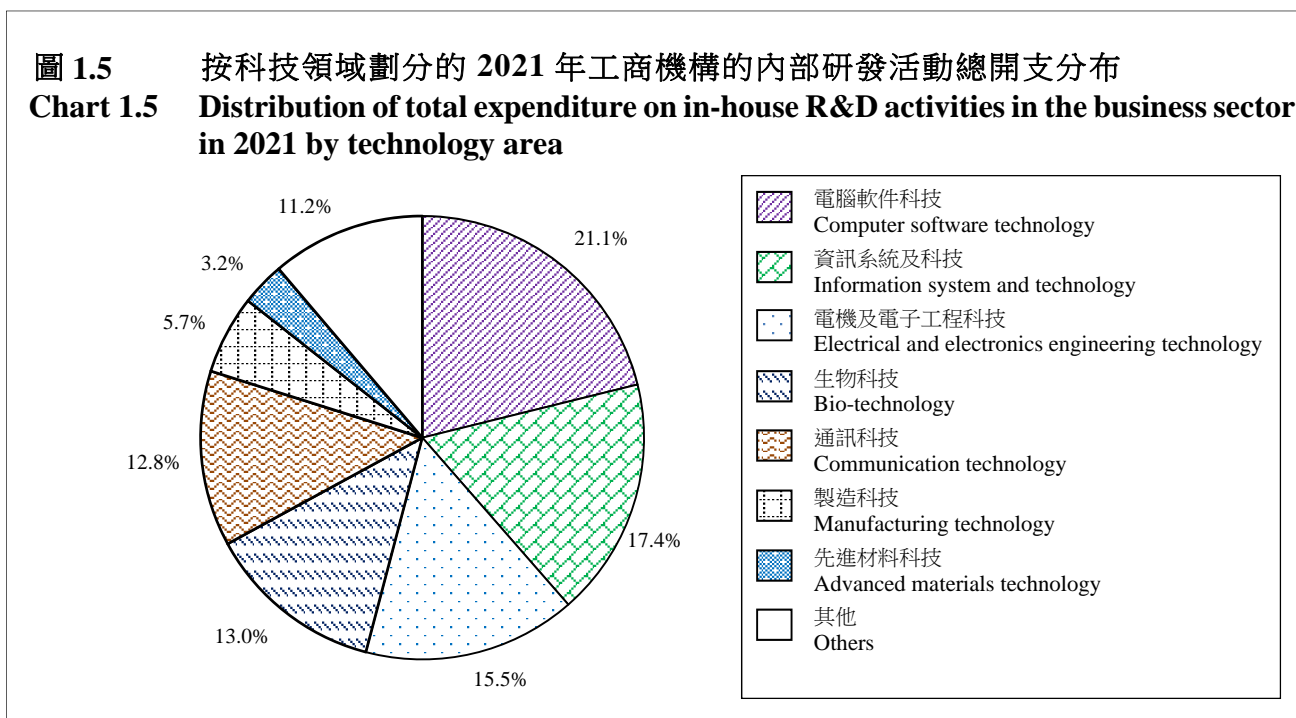


按科技領域劃分

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。電腦軟件科技、資訊系統及科技和電機及電子工程科技領域分別佔工商機構的內部研發活動總開支的 21%、17%和 16%。(圖 1.5, 表 1.9)

By technology area

1.14 In-house R&D activities in the business sector were mainly focused on the areas of information technology and engineering technology. Computer software technology, information system and technology, and electrical and electronics engineering technology areas accounted for 21%, 17% and 16% of the total expenditure on in-house R&D activities in the business sector respectively. (Chart 1.5, Table 1.9)

按資金來源劃分

1.15 約 90% 的工商機構的內部研發活動總開支由本地機構出資，當中大部分由進行研發活動的機構單位自行出資 (71%)。(表 1.10)

By source of funds

1.15 About 90% of the total expenditure on in-house R&D activities in the business sector was supported by local parties, and most of which was financed by the performing establishments themselves (71%). (Table 1.10)

研發人員

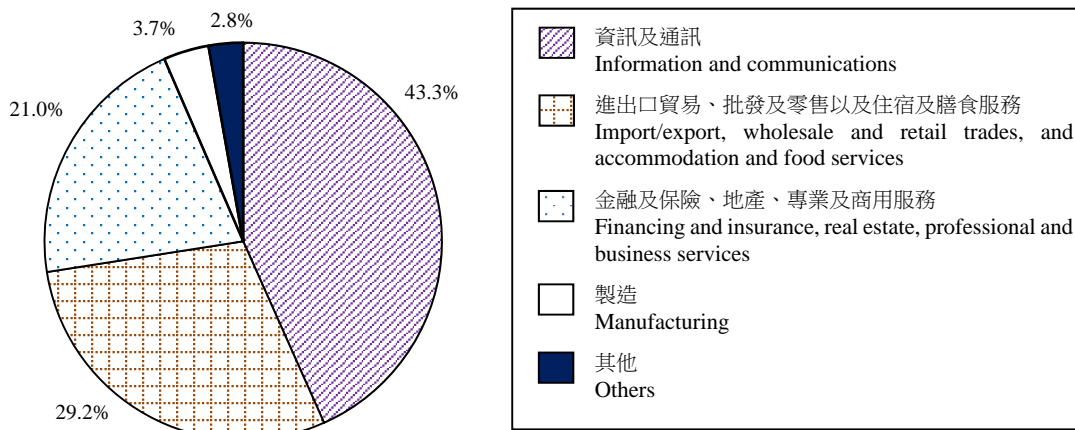
1.16 在 2021 年工商機構的研發人員數目 (以相當於全日制的人數計算) 為 13 002 人，當中 87% 是研究員，8% 是技術員，其餘 5% 是其他輔助人員。按選定行業組別分析，大部分的研發人員從事資訊及通訊業 (43%)，其次是進出口貿易、批發及零售以及住宿及膳食服務業 (29%)。(圖 1.6, 表 1.11)

R&D personnel

1.16 The number of R&D personnel (in FTE) in the business sector was 13 002 in 2021, of which 87% were researchers, 8% technicians and the remaining 5% other supporting staff. Analysed by selected industry grouping, most of the R&D personnel were engaged in the information and communications sector (43%), followed by the import/export, wholesale and retail trades, and accommodation and food services sector (29%). (Chart 1.6, Table 1.11)

圖 1.6 按選定行業組別劃分的 2021 年工商機構的研發人員（以相當於全日制的人數計算）分布

Chart 1.6 Distribution of R&D personnel (in FTE) in the business sector in 2021 by selected industry grouping

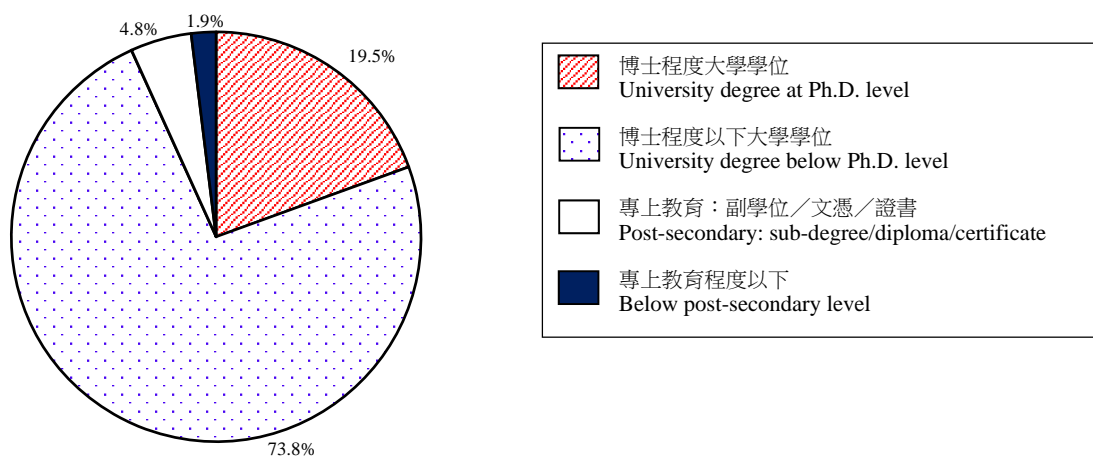


1.17 按教育程度分析，大部分工商機構的研發人員具有大學學位。在 2021 年的 13 002 名研發人員（以相當於全日制的人數計算）當中，19% 達博士程度，74% 擁有博士程度以下大學學位。（圖 1.7，表 1.12）

1.17 Analysed by level of education, the majority of R&D personnel in the business sector held university degrees. Of the 13 002 R&D personnel (in FTE) in 2021, 19% attained Ph.D. level and 74% were holders of university degrees below Ph.D. level. (Chart 1.7, Table 1.12)

圖 1.7 按教育程度劃分的 2021 年工商機構的研發人員（以相當於全日制的人數計算）分布

Chart 1.7 Distribution of R&D personnel (in FTE) in the business sector in 2021 by level of education



外判研發活動

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

1.19 在 2021 年，工商機構投放於外判研發活動的總金額共 67.33 億元，當中外判予香港以外機構的金額為 24.53 億元（36%），而相關機構主要位於中國內地及澳門〔當中約 90% 位於粵港澳大灣區（香港除外）〕，至於外判予本港機構的金額為 42.81 億元（64%）。（圖 1.8，表 1.13 及 1.15）

1.20 按進行研發活動的機構類別分析，外判研發活動主要由機構單位所屬企業集團的分支機構或總公司進行，佔外判研發活動總開支的 51%，其次是機構單位所屬企業集團以外的機構（37%）及高等教育機構（6%）。（圖 1.8，表 1.14）

1.21 按資金來源分析，約 92% 的外判研發活動總開支由機構單位自行出資，其次由機構單位所屬企業集團的分支機構或總公司（6%）。（表 1.16）

Contracted-out R&D activities

1.18 Apart from expenditure on in-house R&D activities, statistics pertaining to the 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 In 2021, a total of \$6,733 million was incurred in contracted-out R&D activities in the business sector, where \$2,453 million (36%) was contracted out to parties outside Hong Kong which were mainly located in the mainland of China and Macao [of which about 90% in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) (other than Hong Kong)], and \$4,281 million (64%) to local parties. (Chart 1.8, Tables 1.13 and 1.15)

1.20 Analysed by type of performing party, contracted-out R&D activities were mainly undertaken by affiliates or parent company of the enterprise group concerned, which accounted for 51% of the total expenditure on contracted-out R&D activities in the business sector, followed by organisations not affiliated with the enterprise group (37%) and higher education institutions (6%). (Chart 1.8, Table 1.14)

1.21 Analysed by source of funds, about 92% of the total expenditure on contracted-out R&D activities were financed by the establishments themselves, followed by affiliates or parent company of the enterprise group (6%). (Table 1.16)

圖 1.8 按進行研發活動的機構類別／所在地劃分的 2021 年工商機構的外判研發活動總開支

Chart 1.8 Total expenditure on contracted-out R&D activities in the business sector in 2021 by type/location of party performing R&D activities

按進行研發活動的機構類別

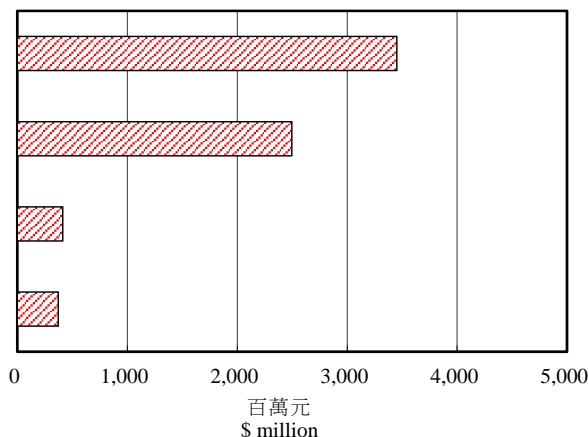
By type of party performing R&D activities

機構單位所屬企業集團的分支機構或總公司
Affiliate or parent company of the enterprise group

機構單位所屬企業集團以外的機構
Organisation not affiliated with the enterprise group

高等教育機構
Higher education institution

公共科技支援機構及其他
Public technology support organisation and others



按進行研發活動的機構所在地

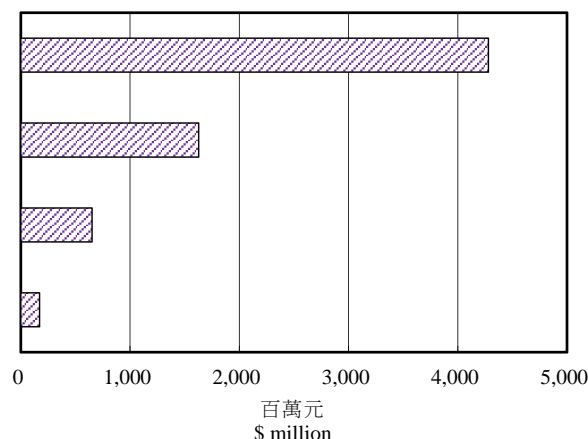
By location of party performing R&D activities

香港
Hong Kong

中國內地及澳門 - 粵港澳大灣區 (香港除外)
The mainland of China and Macao - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) (other than Hong Kong)

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 - 粵港澳大灣區以外地方
The mainland of China and Macao - Places other than the GBA



研發活動的協作安排

1.22 在 2021 年曾進行研發活動（包括內部及／或外判研發活動）的工商機構單位當中，12%（475 間）表示有就研發活動和其他機構訂立協作安排。按協作機構類別分析，在該 475 間機構單位當中，有 39%與機構單位所屬企業集團的分支機構或總公司有協作安排，38%則與高等教育機構有協作安排。（圖 1.9，表 1.17）

Collaboration arrangements on R&D activities

1.22 Some 12% (475) of the business establishments which undertook R&D activities (including both in-house and/or contracted-out R&D activities) in 2021 reported having collaboration arrangements on R&D activities with other organisations. Analysed by type of collaborated organisation, 39% of these 475 establishments had collaboration arrangements with affiliates or parent company of the enterprise group, and 38% with higher education institutions. (Chart 1.9, Table 1.17)

1.23 在有研發活動的協作安排的工商機構單位中，30%與香港、中國內地及澳門以外地方的機構有協作安排，17%與粵港澳大灣區（香港除外）的機構有協作安排。（圖 1.9，表 1.18）

1.23 Among the business establishments with collaboration arrangements on R&D activities, 30% had collaboration arrangements with organisations in places outside Hong Kong, the mainland of China and Macao, and 17% with organisations in the GBA (other than Hong Kong). (Chart 1.9, Table 1.18)

圖 1.9 按協作機構類別／所在地劃分的在 2021 年有就研發活動和其他機構訂立協作安排的工商機構單位數目

Chart 1.9 Number of business establishments with collaboration arrangements on R&D activities with other organisations in 2021 by type/location of collaborated organisation

按協作機構類別

By type of collaborated organisation

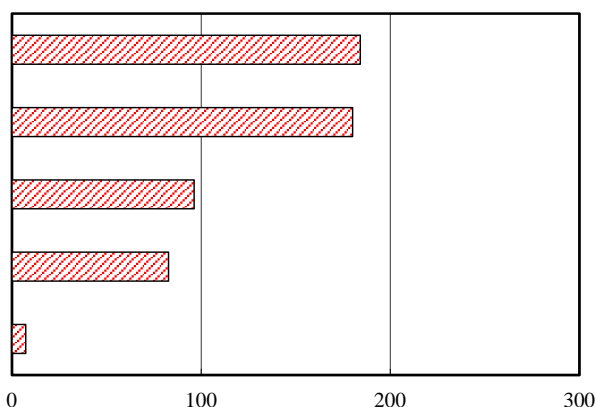
機構單位所屬企業集團的分支機構或總公司
Affiliate or parent company of the enterprise group

高等教育機構
Higher education institution

機構單位所屬企業集團以外的機構
Organisation not affiliated with the enterprise group

公共科技支援機構
Public technology support organisation

政府
Government



有協作安排的工商機構單位數目
No. of business establishments with collaboration arrangements

按協作機構所在地

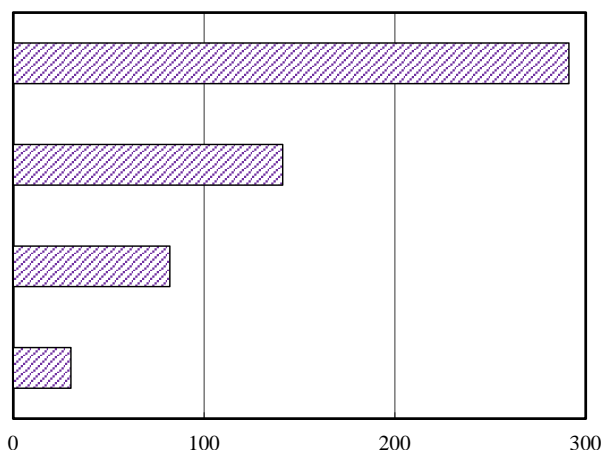
By location of collaborated organisation

香港
Hong Kong

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 - 粵港澳大灣區（香港除外）
The mainland of China and Macao - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) (other than Hong Kong)

中國內地及澳門 - 粵港澳大灣區以外地方
The mainland of China and Macao - Places other than the GBA



有協作安排的工商機構單位數目
No. of business establishments with collaboration arrangements

高等教育機構的研發活動

1.24 近年，高等教育機構透過政府（包括創新科技署、研究資助局、大學教育資助委員會等）及工商業界提供的資助，不斷加強進行研發活動。高等教育機構在 2021 年的研發活動總開支為 147.35 億元，較 2020 年上升 4%，而相對本地生產總值的比率由 2020 年的 0.53% 下跌至 2021 年的 0.51%。（表 1.1）

1.25 在 2021 年高等教育機構的研發活動總開支當中，經常開支佔很大比重，達 94%，資本開支則佔 6%。（表 1.2）

研發人員

1.26 高等教育機構在 2021 年的研發人員數目（以相當於全日制的人數計算）達 23 423 人。按職能類別分析，2021 年大部分研發人員是研究員（95%），其次是技術員（3%）及其他輔助人員（3%）。（表 1.1 及 1.4）

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，致力提升本港的科技與創新水平。

1.28 政府機構（主要是公共科技支援機構）在 2021 年的研發活動總開支達 13.92 億元，較 2020 年上升 1%，而相對本地生產總值的比率維持 0.05%。（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活動總開支的 91% 和 9%。（表 1.2）

R&D activities in the higher education sector

1.24 Through funding support from the Government (including the Innovation and Technology Commission, Research Grants Council, University Grants Committee, etc.) and the business community, the higher education sector has been stepping up its effort in undertaking R&D activities in recent years. The total expenditure on R&D activities in the higher education sector amounted to \$14,735 million in 2021, 4% higher as compared with 2020, and its ratio to GDP decreased from 0.53% in 2020 to 0.51% in 2021. (Table 1.1)

1.25 Current expenditure constituted a predominant share of 94% of the total expenditure on R&D activities in the higher education sector in 2021, while capital expenditure accounted for 6%. (Table 1.2)

R&D personnel

1.26 The number of R&D personnel (in FTE) in the higher education sector reached 23 423 in 2021. Analysed by type of function, most of the R&D personnel in 2021 were researchers (95%), followed by technicians (3%) and other supporting staff (3%). (Tables 1.1 and 1.4)

R&D activities in the government sector

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

1.28 The total expenditure on R&D activities in the government sector (mainly public technology support organisations) amounted to \$1,392 million in 2021, 1% higher as compared with 2020, and its ratio to GDP maintained at 0.05% in 2021. (Table 1.1)

1.29 Analysed by type of R&D expenditure, the proportions of current expenditure and capital expenditure were 91% and 9% of the total expenditure on R&D activities in the government sector respectively. (Table 1.2)

研發人員

1.30 在 2021 年政府機構的研發人員數目（以相當於全日制的人數計算）為 1 030 人，當中 87%是研究員，7%是技術員，其餘 5%是其他輔助人員。
（表 1.1 及 1.4）

R&D personnel

1.30 The number of R&D personnel (in FTE) in the government sector was 1 030 in 2021, of which 87% were researchers, 7% technicians and the remaining 5% other supporting staff. (Tables 1.1 and 1.4)

2 工商機構的創新活動 Innovation Activities in the Business Sector

工商機構的創新活動普及情況

2.1 創新活動在數字化經濟中扮演著重要的角色。除進行研究及發展（研發）活動外，一間機構單位可進行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創新活動（例如研發成果商品化）。

2.2 約2%的工商機構單位在2021年曾進行至少一類創新活動，並於資訊及通訊業較普及（佔該行業所有機構單位數目的16%）。（圖2.1，表2.1）

2.3 工商機構的創新活動普及程度在不同規模的機構單位當中有所不同。大型機構單位一般較中小型機構單位傾向於進行創新活動。在2021年，大型機構單位當中有11%曾進行創新活動，而中型和小型機構單位的相應數字分別為6%和2%。（圖2.1，表2.1）

2.4 約2%的工商機構單位在2021年有仍在進行中的創新活動，並於大型機構單位當中最為普及（6%）。另一方面，小部分工商機構單位（0.3%）在2021年曾終止已開展的創新活動。（表2.1）

Prevalence of innovation activities in the business sector

2.1 Innovation activities play an important role in a digital economy. Apart from conducting research and development (R&D) activities, an establishment may also undertake other innovation activities not directly related to R&D (e.g. commercialisation of R&D results) and yet contributing to its innovation activities and business performance.

2.2 About 2% of business establishments undertook at least one type of innovation activities in 2021, which were more prevalent in the information and communications sector (16% of the total number of establishments in this sector). (Chart 2.1, Table 2.1)

2.3 The prevalence of innovation activities in the business sector varies among establishments of different sizes. Large establishments generally tend to undertake innovation activities than small and medium establishments. About 11% of large establishments undertook innovation activities in 2021, as compared with 6% and 2% among medium and small establishments respectively. (Chart 2.1, Table 2.1)

2.4 About 2% of the business establishments had ongoing innovation activities in 2021, where such prevalence were the highest among large establishments (6%). On the other hand, a small proportion of the business establishments (0.3%) had abandoned their innovation activities in 2021. (Table 2.1)

圖 2.1 按選定行業組別／機構單位規模劃分的在 2021 年有進行創新活動的工商機構單位百分比

Chart 2.1 Percentage of business establishments having undertaken innovation activities in 2021 by selected industry grouping/size of establishment

按行業組別劃分

By industry grouping

製造

Manufacturing

進出口貿易、批發及零售以及住宿及膳食服務

Import/export, wholesale and retail trades, and accommodation and food services

資訊及通訊

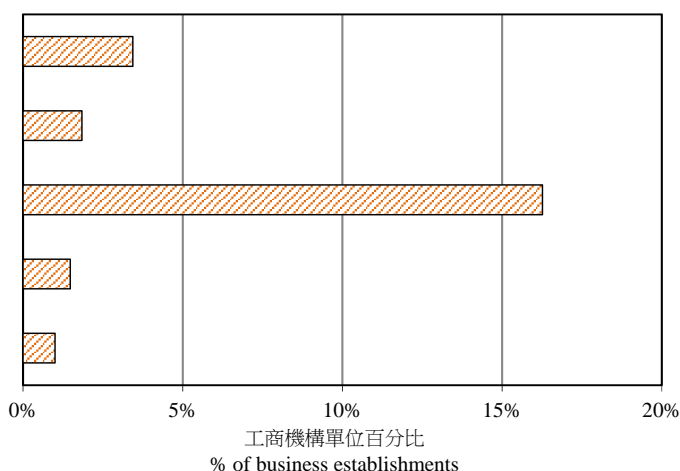
Information and communications

金融及保險、地產、專業及商用服務

Financing and insurance, real estate, professional and business services

其他

Others



按機構單位規模劃分

By size of establishment

大型

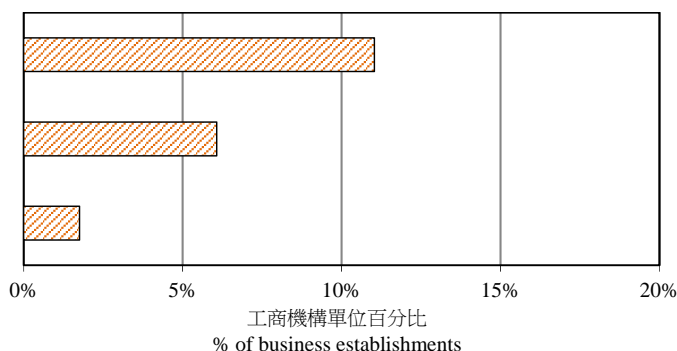
Large

中型

Medium

小型

Small



產品創新

2.5 在 2021 年，約 1% 的工商機構單位曾於市場上推出至少一項嶄新或經顯著改良的產品（貨品或服務）。這些機構單位平均每間推出 1.4 項嶄新或經顯著改良的產品，當中約 37% 表示曾推出對其機構單位以至市場而言均是嶄新或經顯著改良的產品。

（表 2.1、2.2 及 2.3）

2.6 在 2021 年曾進行產品創新的工商機構單位當中，約 67% 是自行開發有關產品，而 24% 則是與其他機構合作開發。整體而言，2021 年產品創新所帶來的收益佔這些相關機構單位的業務收益的 9%。（表 2.3）

Product innovation

2.5 About 1% of the business establishments introduced to the market at least one new or significantly improved products (goods or services) in 2021. The average number of new or significantly improved products introduced to the market by each of these establishments was 1.4. Of these business establishments, about 37% were involved in the introduction of products not only new or significantly improved to the establishment, but also to the market. (Tables 2.1, 2.2 and 2.3)

2.6 Among the business establishments having undertaken product innovation in 2021, about 67% developed the products themselves and 24% in cooperation with other parties. Overall speaking, product innovation contributed to 9% of the business receipts of these relevant establishments. (Table 2.3)

業務程序創新

2.7 在 2021 年，約 0.3% 的工商機構單位曾進行業務程序創新，並於資訊及通訊業和製造業較普及（分別佔相應行業所有機構單位數目的 0.9% 和 0.7%）。此外，大型機構單位有進行業務程序創新的比率（4%）較中型（1%）及小型機構單位（0.2%）為高。（表 2.1）

2.8 在 2021 年，約 38% 有進行業務程序創新的工商機構單位自行開發有關程序，而 5% 則與其他機構合作開發。這些機構單位平均每間推行 1.4 項業務程序創新項目。（表 2.4）

2.9 在 2021 年曾進行業務程序創新的工商機構單位當中，約 69% 表示全面推行嶄新或經顯著改良的業務程序在不同程度上有助減低經營成本。（表 2.5）

創新活動的開支

2.10 2021 年工商機構的創新活動總開支為 286.84 億元，當中以資訊及通訊業所佔的百分比最大（48%），其次是進出口貿易、批發及零售以及住宿及膳食服務業（22%）；和金融及保險、地產、專業及商用服務業（22%）。（表 2.1 及 2.6）

2.11 一般而言，大型機構單位較中小型機構單位傾向投放較多資金以進行創新活動。雖然大型機構單位只佔所有曾在 2021 年進行創新活動的機構單位數目的 8%，它們佔工商機構的創新活動總開支的 62%。（表 2.1 及 2.6）

Business process innovation

2.7 About 0.3% of the business establishments undertook business process innovation in 2021, which were more prevalent in the information and communications sector and manufacturing sector (0.9% and 0.7% in respect of the total number of establishments in the corresponding sector). Besides, the proportion of establishments having undertaken business process innovation was higher in large establishments (4%) than in medium (1%) and small establishments (0.2%). (Table 2.1)

2.8 About 38% of the business establishments with business process innovation in 2021 developed the processes themselves and 5% in cooperation with other parties. The average number of business process innovation implemented by each of these establishments was 1.4. (Table 2.4)

2.9 Among the business establishments having undertaken business process innovation in 2021, about 69% indicated that the full implementation of the new or significantly improved business processes would help lower their operating costs to varying extents. (Table 2.5)

Expenditure on innovation activities

2.10 The total expenditure on innovation activities in the business sector in 2021 was \$28,684 million, of which the information and communications sector accounted for the largest share (48%), followed by the import/export, wholesale and retail trades, and accommodation and food services sector (22%); and financing and insurance, real estate, professional and business services sector (22%). (Tables 2.1 and 2.6)

2.11 In general, large establishments tend to deploy more funds in innovation activities than small and medium establishments. While large establishments constituted only 8% of those having undertaken innovation activities in 2021 in terms of number of establishments, they accounted for 62% of the total expenditure on innovation activities in the business sector. (Tables 2.1 and 2.6)

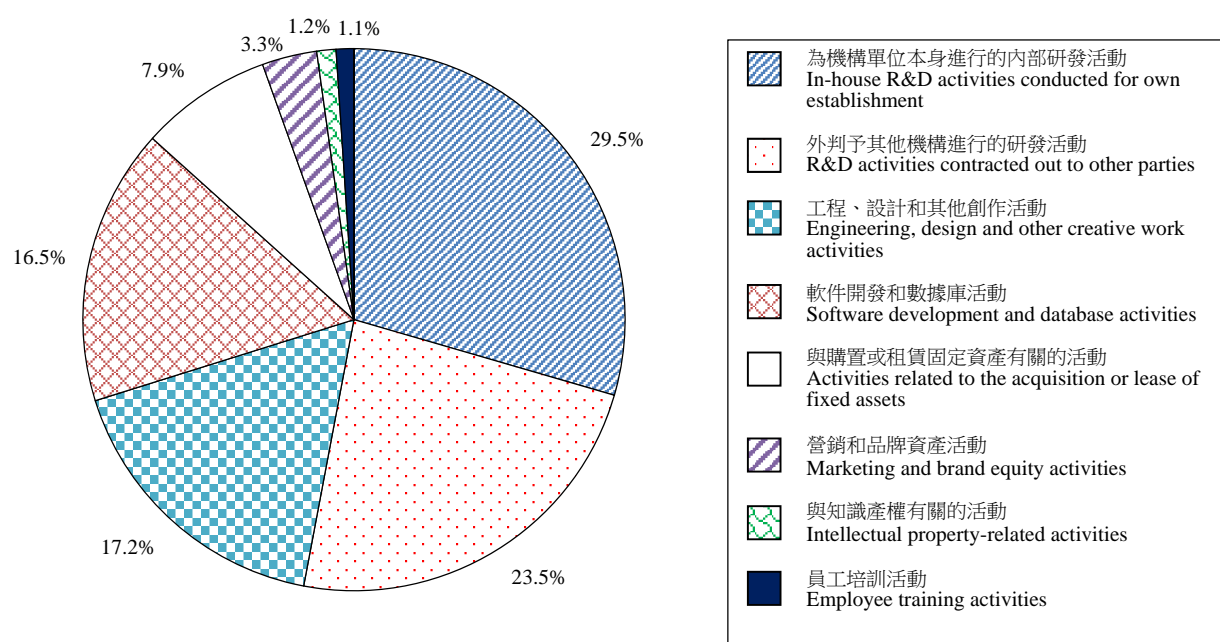
按創新活動類別劃分

2.12 工商機構的創新活動總開支主要涉及為機構單位本身進行的內部研發活動（29%），其次是外判予其他機構進行的研發活動（23%），以及工程、設計和其他創作活動（17%）。（圖 2.2，表 2.6）

By type of innovation activity

2.12 The total expenditure of innovation activities in the business sector was mainly engaged in in-house R&D activities conducted for own establishment (29%), followed by R&D activities contracted out to other parties (23%); and engineering, design and other creative work activities (17%). (Chart 2.2, Table 2.6)

圖 2.2 按創新活動類別劃分的 2021 年工商機構的創新活動總開支分布
Chart 2.2 Distribution of total expenditure on innovation activities in the business sector in 2021 by type of innovation activity

按資金來源劃分

2.13 75% 的工商機構的創新活動總開支由機構單位自行出資，其次是機構單位所屬企業集團的分支機構或總公司（17%）。（表 2.7）

By source of funds

2.13 75% of the total expenditure on innovation activities in the business sector was financed by the establishments themselves, followed by the affiliates or parent company of the enterprise group (17%). (Table 2.7)

創新活動（不包括研發活動）的協作安排

2.14 在 2021 年曾進行創新活動（不包括研發活動）的工商機構單位當中，約 6%（389 間）有就創新活動（不包括研發活動）和其他機構訂立協作安排。按協作機構類別分析，該 389 間機構單位當中，有 43% 與機構單位所屬企業集團的分支機構或總公司有協作安排，而 37% 與機構單位所屬企業集團以外的機構有協作安排。（圖 2.3，表 2.8）

2.15 至於協作機構的所在地，在 2021 年有創新活動（不包括研發活動）的協作安排的工商機構單位中，58% 與香港的機構有協作安排，而 35% 與香港、中國內地及澳門以外地方的機構有協作安排。（圖 2.3，表 2.9）

進行創新活動的目的

2.16 在 2021 年曾進行創新活動的工商機構單位中表示進行有關活動的主要目的包括（以獲機構單位評估其重要程度為高的因素的機構單位的百分比計算）：

- (a) 提升貨品或服務的質素（58%）
- (b) 增加或維持市場佔有率（49%）
- (c) 增加貨品的種類或擴大服務的範圍（48%）
- (d) 開拓貨品或服務的新客源（44%）
- (e) 開拓貨品或服務的新地區市場（31%）

（圖 2.4，表 2.10）

Collaboration arrangements on innovation activities (excluding R&D activities)

2.14 About 6% (389) of the business establishments which undertook innovation activities (excluding R&D activities) in 2021 had collaboration arrangements on innovation activities (excluding R&D activities) with other organisations. Analysed by type of collaborated organisation, 43% of these 389 establishments cooperated with affiliates or parent company of the enterprise group, and 37% with organisations not affiliated with the enterprise group. (Chart 2.3, Table 2.8)

2.15 As regards the location of collaborated organisations, 58% of the business establishments with collaboration arrangements on innovation activities (excluding R&D activities) in 2021 co-operated with organisations in Hong Kong, and 35% with organisations in places outside Hong Kong, the mainland of China and Macao. (Chart 2.3, Table 2.9)

Objectives of conducting innovation activities

2.16 Business establishments having undertaken innovation activities in 2021 considered that the major objectives of having undertaken such activities included (in terms of the percentage of establishments assessing the factor as of high degree of importance):

- (a) To enhance the quality of goods or services (58%)
- (b) To increase or maintain market share (49%)
- (c) To increase the variety of goods or expand the range of services (48%)
- (d) To introduce goods or services to new customer groups (44%)
- (e) To introduce goods or services to new geographic markets (31%)

(Chart 2.4, Table 2.10)

圖 2.3 按協作機構類別／所在地劃分的在 2021 年有就創新活動（不包括研發活動）和其他機構訂立協作安排的工商機構單位數目

Chart 2.3 Number of business establishments with collaboration arrangements on innovation activities (excluding R&D activities) with other organisations in 2021 by type/location of collaborated organisation

按協作機構類別

By type of collaborated organisation

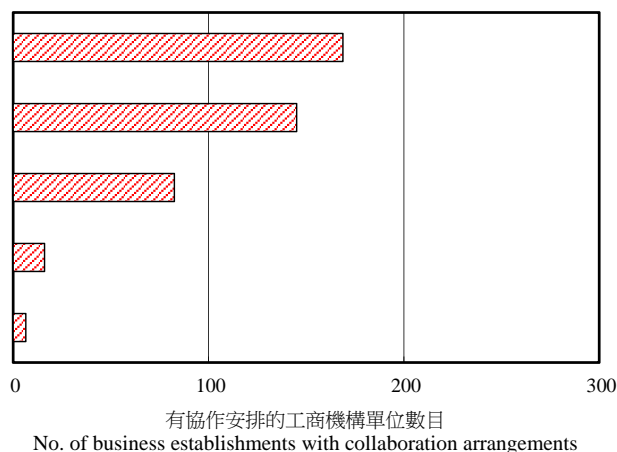
機構單位所屬企業集團的分支機構或總公司
Affiliate or parent company of the enterprise group

機構單位所屬企業集團以外的機構
Organisation not affiliated with the enterprise group

高等教育機構
Higher education institution

公共科技支援機構
Public technology support organisation

政府
Government



按協作機構所在地

By location of collaborated organisation

香港
Hong Kong

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 - 粵港澳大灣區（香港除外）
The mainland of China and Macao - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) (other than Hong Kong)

中國內地及澳門 - 粵港澳大灣區以外地方
The mainland of China and Macao - Places other than the GBA

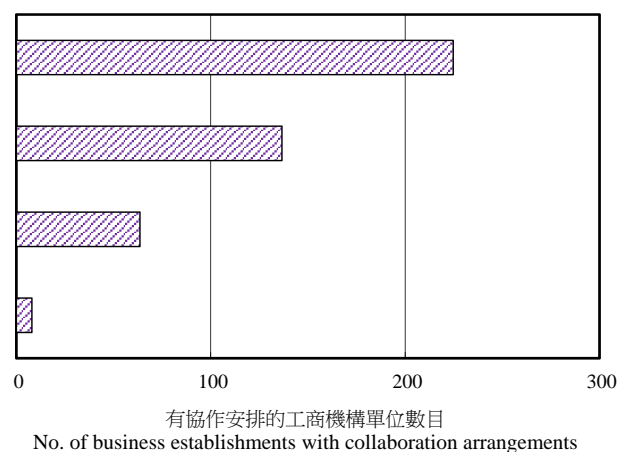


圖 2.4 按進行創新活動的目的及其重要程度劃分的在 2021 年有進行創新活動的工商機構單位百分比

Chart 2.4 Percentage of business establishments having undertaken innovation activities in 2021 by objective of conducting innovation activities and its degree of importance

進行創新活動的目的

Objective of conducting innovation activities

提升貨品或服務的質素

To enhance the quality of goods or services

增加或維持市場佔有率

To increase or maintain market share

增加貨品的種類或擴大服務的範圍

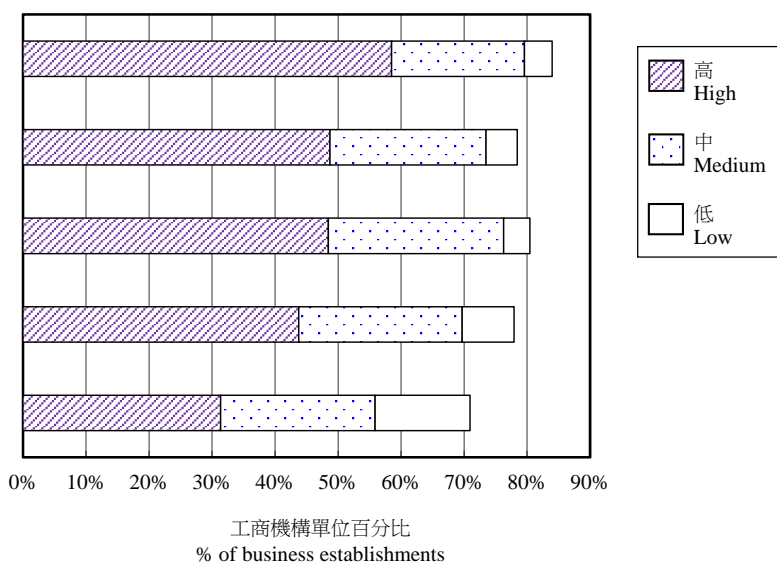
To increase the variety of goods or expand the range of services

開拓貨品或服務的新客源

To introduce goods or services to new customer groups

開拓貨品或服務的新地區市場

To introduce goods or services to new geographic markets



註釋：上圖中沒有展示認為相關因素不適用的工商機構單位百分比。

Note: The percentage of business establishments which considered the factor as irrelevant is not presented in the chart above.

阻礙創新活動的因素

2.17 在 2021 年沒有進行任何創新活動的工商機構單位中，主要原因是「由於市場或行業情況，因此暫無需要」（90%）。（表 2.11）

2.18 對於在 2021 年曾進行創新活動的工商機構單位而言，獲大部分機構單位評估其影響程度為高的阻礙創新活動的因素是「創新成本太高」（45%），其次是「預期的經濟風險太高」（37%）及「缺乏機構單位或所屬企業集團內部資金」（33%）。（表 2.12）

Barriers to innovation activities

2.17 Among those business establishments which did not undertake any innovation activities in 2021, their major reason was “no need due to market or business conditions” (90%). (Table 2.11)

2.18 As for those business establishments which had undertaken innovation activities in 2021, the barrier to innovation activities assessed by most of them as having high degree of impact was “too high innovation costs” (45%), followed by “excessive perceived economic risks” (37%) and “lack of internal funds within the establishment or enterprise group” (33%). (Table 2.12)

3 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

3.1 發展創新及科技（創科）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持續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業界需要的應用研究及發展（研發）及創新活動。

基礎研究

3.2 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，研究經費主要來自教資會和研究資助局提供的補助金，以及政府及其相關機構所提供的資助。

應用研發及創新活動

3.3 政府致力推動創科的發展，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。

基礎設施

3.4 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。

3.1 Development in innovation and technology (I&T) is key to technological breakthroughs. It also fuels economic growth and improves quality of life. The Government of the Hong Kong Special Administrative Region continues to make 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 citizens as well as the needs of the business community.

Basic research

3.2 Basic research is principally undertaken by the University Grants Committee (UGC)-funded universities. Their research expenditures mainly came from grants from the UGC and Research Grants Council, as well as other financial support from the Government and Government-related organisations.

Applied R&D and innovation activities

3.3 The Government attaches great importance in promoting I&T 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.

Infrastructure

3.4 The Hong Kong Science Park (Science Park) and Cyberport are the major technology infrastructure. They provide one-stop infrastructural support services to technology-based companies.

3.5 科學園的總樓面面積為 22 公頃，現時共有 23 幢設備完善的大樓，總樓面面積共 40 萬平方米。科學園的發展分為 4 個階段，包括第 1 至 3 期及科學園第一階段擴建計劃。政府以注資香港科技園公司（科技園公司）的形式資助科學園發展的部分成本。政府在項目的出資額相等於 96.83 億元，另外亦為科技園公司提供共 16.43 億元的政府貸款及為其共 28.14 億元的商業貸款提供擔保。截至 2022 年 3 月，科學園的整體租用率為 88%，約 920 家夥伴企業進駐，提供約 17 000 個就業機會（當中約有 11 000 個職位與研發相關）。除此之外，位於科學園旁邊的創新斗室已於 2021 年開幕，提供約 500 個具靈活設計的住宿單位及附屬設施，租予合資格人士，例如科學園租戶及培育公司的負責人及其員工。科技園公司正分階段推展第二階段擴建計劃。預計第二階段擴建計劃第一批次的工程涉及約 13 100 平方米的總樓面面積，以興建實驗室為主，將於 2025 年完成。

3.6 在 *InnoHK* 計劃下，政府已撥款 100 億元於科學園建設「*InnoHK* 創新香港研發平台」，分別是專注醫療科技的「*Health@InnoHK*」創新平台，以及專注人工智能及機械人科技的「*AIR@InnoHK*」創新平台。經過嚴謹的篩選及審批程序，28 所研發實驗室獲選進駐，匯聚 7 間本地院校和研發機構，以及逾 30 間來自全球 11 個經濟體的機構，參與的本地和海內外科研人員合共約 2 000 人。

3.5 The 22-hectare Science Park currently has 23 well-equipped buildings with a gross floor area (GFA) of 400 000 square metres (sq. m.). The Science Park was developed in 4 stages, including Phases 1 to 3 and Stage 1 of Science Park Expansion Programme (SPX1). The Government partially subsidised the development of the Science Park through equity injection into the Hong Kong Science and Technology Parks Corporation (HKSTPC). The capital contribution by the Government is equivalent to \$9,683 million. Government loans of \$1,643 million and guarantee for its commercial loans of \$2,814 million were also provided to the HKSTPC. The overall occupancy rate of the Science Park was 88% as at March 2022 with about 920 partner companies, providing about 17 000 job opportunities (of which about 11 000 are related to R&D). In addition, the InnoCell adjacent to the Science Park was opened in 2021 to provide about 500 flexibly-designed residential units and ancillary facilities to eligible persons such as principals of tenants and incubatees of the Science Park as well as their employees. The HKSTPC takes forward the Stage 2 of the expansion programme (SPX2) in batches. It is estimated that the first batch of SPX2 will involve a GFA of approximately 13 100 sq. m., mainly for laboratories, to be completed by 2025.

3.6 Under the *InnoHK* initiative, the Government has provided \$10 billion to establish the *InnoHK* research clusters in the Science Park – one on healthcare technologies (*Health@InnoHK*) and another on artificial intelligence and robotics technologies (*AIR@InnoHK*). After a rigorous selection and assessment process, 28 research laboratories have been admitted, involving 7 local universities and research institutions as well as over 30 institutions from 11 economies, and pooling about 2 000 researchers locally and from all over the world.

3.7 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，以及提供道路和污水處理等基本基礎設施。政府在整項計劃上的出資額相等於 79.3 億元，包括提供基本基礎設施的 11 億元成本。數碼港部分已於 2004 年完成，包括 4 座寫字樓、1 間酒店和 1 個商場。4 座寫字樓共提供約 122 000 平方米總樓面面積。截至 2022 年 3 月，寫字樓租用率為 85.5%，共有 739 個租戶，它們共聘用約 5 700 人。除此之外，數碼港第五期工程已經展開，預計最快於 2025 年完成，屆時數碼港總樓面面積將增加超過 40%。

3.8 除科學園及數碼港外，政府正全力在落馬洲河套地區（河套地區）發展「港深創新及科技園」（創科園）。創科園佔地 87 公頃，將提供最多 120 萬平方米總樓面面積。政府已於 2021 年年初獲立法會批准撥款，其中 143.47 億元用於河套地區發展的工務計劃項目，而 181.35 億元用以開展創科園第一批次發展及支持港深創新及科技園有限公司的早期營運開支。預計第一批次發展的 8 座樓宇將於 2024 年起分階段落成。創科園將會成為科研合作的重點基地，並提供相關高等教育、文化創意和其他配套設施。

3.7 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 basic infrastructure, such as roads and sewage treatment, for the Cyberport Project. The capital contribution by the Government is equivalent to \$7,930 million, including the estimated cost of \$1,100 million for the basic infrastructure. The Cyberport Portion was completed in 2004. There are 4 office buildings, a hotel and an arcade. The 4 office buildings provide a total GFA of approximately 122 000 sq. m. As of March 2022, the occupancy rate of the office buildings was 85.5%. There were 739 tenants, employing about 5 700 persons. In addition, construction works for the fifth phase of Cyberport have commenced and are expected to complete in 2025 at the earliest. The GFA of Cyberport will be increased by more than 40%.

3.8 Other than the Science Park and Cyberport, the Government is pressing ahead with the development of the “Hong Kong-Shenzhen Innovation and Technology Park” (the Park) in the Lok Ma Chau Loop (the Loop). The Park occupies 87 hectares of land and will provide a maximum total GFA of 1.2 million sq. m. The Government has received funding approval from the Legislative Council (LegCo) in early 2021, among which \$14,347 million would be used for the public works projects of the Loop development and \$18,135 million for commencing Batch 1 development of the Park and supporting the initial operating cost of the Hong Kong-Shenzhen Innovation and Technology Park Limited. It is estimated that the 8 buildings of Batch 1 development will be completed in phases from 2024 onwards. It will set a key base for scientific research collaborations, as well as provide relevant higher education, cultural and creative, and other complementary facilities.

應用研發

3.9 「創新及科技基金」（基金）於2021-22 財政年度撥款共 26.19 億元，資助 8 925 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。基金在 2021-22 和 2022-23 財政年度獲注資共 95 億元，以支持現行資助計劃與研發中心／實驗室繼續運作和推行各項新措施。

3.10 創新科技署與國家科學技術部（科技部）在 2019 年 4 月推出「內地與香港聯合資助計劃」。此計劃旨在支持和鼓勵香港與內地加強科研合作。申請項目應具備兩地合作元素，項目的研發工作須在兩地均有進行。創新科技署和科技部會分別向香港和內地的申請機構提供資助，並會按照各自的規定監察項目進展。

3.11 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 2021-22 財政年度撥出 6.31 億元資助這些機構營運，以期提升工商界在創科方面的能力。

企業支援

3.12 為推動本地企業進行更多研發活動，基金轄下設有「企業支援計劃」，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。在香港註冊及成立的公司，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 萬元。在 2021-22 財政年度，基金批出撥款承擔額約 8,800 萬元資助該計劃的研發項目。

Applied R&D

3.9 The Innovation and Technology Fund (ITF) made a total of \$2,619 million funding support in the financial year 2021-22 for 8 925 applied R&D projects, including the ongoing projects plus those that were approved in the report period. A total of \$9.5 billion was injected into the ITF in the financial years 2021-22 and 2022-23, to sustain the continuous operation of the existing funding schemes and the R&D centres/laboratories as well as the introduction of new measures.

3.10 In April 2019, the Innovation and Technology Commission (ITC) and the Ministry of Science and Technology (MOST) launched the Mainland-Hong Kong Joint Funding Scheme (MHKJFS). The MHKJFS aims to support and encourage further R&D collaboration between Hong Kong and the Mainland. An element of co-operation between the two places is expected in each project proposal and the R&D work must be conducted in both places. The ITC and MOST provide funding to the Hong Kong and Mainland applicant organisations respectively and monitor the progress of projects according to their own requirements.

3.11 Public funded organisations engaged in applied R&D play an important role in the innovation ecosystem. In the financial year 2021-22, the Government committed a sum of \$631 million to support their operations, aiming to enhance the I&T capability of the business community.

Enterprise Support

3.12 To encourage local enterprises to conduct more R&D activities, the Enterprise Support Scheme (ESS) under the ITF provides financial support for local companies in the private sector to undertake in-house R&D projects. Companies registered and incorporated in Hong Kong, regardless of size, can apply. Under the ESS, funding of up to \$10 million for each approved project will be provided on a dollar-for-dollar matching basis. In the financial year 2021-22, the ITF committed a total amount of approximately \$88 million to support R&D projects funded by the ESS.

3.13 政府於 2010 年 4 月推出「投資研發現金回贈計劃」，以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。在該計劃下，獲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 月開始，合資格研發開支的現金回贈水平已增加至 40%。於 2021-22 財政年度，該計劃共批出 301 宗申請，涉及現金回贈總額約 1.2 億元。

3.14 政府亦為企業的合資格研發活動產生的開支，提供額外稅務扣減。總研發開支的首 200 萬元，可獲 300% 稅務扣減，餘額亦可獲 200% 扣減。額外扣稅金額不設上限。有關安排適用於企業在 2018 年 4 月 1 日或之後的研發開支。於 2020-21 課稅年度提出研發開支稅務扣減的申索有 196 宗，涉及的研發開支總額約為 25.6 億元。

3.15 就企業的外判研發活動所支付的合資格研發開支，這些開支需支付予由創新科技署署長所指定的「指定本地研究機構」，方可獲額外稅務扣減。截至 2022 年 8 月底，創新科技署署長已指定 39 間機構成為「指定本地研究機構」，當中 30 間為本地大學及公營研究機構，餘下 9 間為本地私營企業。

3.13 The R&D Cash Rebate Scheme was launched by the Government in April 2010 to encourage more private sector investment in R&D activities and collaboration with designated local public research institutions⁽¹⁾. Under the Scheme, 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 2021-22, the Scheme approved 301 applications, involving cash rebates amounting to about \$120 million.

3.14 The Government also provides enterprises with enhanced tax deduction for expenditure incurred in qualifying R&D activities. The deduction will be 300% for the first \$2 million of the aggregate amount and 200% for the remaining amount. There is no cap on the amount of enhanced tax deduction. The deduction is applicable to R&D expenditure incurred on or after 1 April 2018. For the 2020-21 assessment year, there were 196 claims for tax deduction relating to R&D expenditure and the total amount of R&D expenditure involved was about \$2.56 billion.

3.15 In relation to out-sourced qualifying R&D activities, a payment made by an enterprise to a Designated Local Research Institution (DLRI) designated by the Commissioner for Innovation and Technology (CIT) for a qualifying R&D activity will qualify for enhanced tax deduction. As at end-August 2022, CIT has designated 39 institutions as DLRI, among which 30 are local universities and public research institutions and the remaining 9 are local private enterprises.

(1) 指定本地公營科研機構包括：

- (a) 本地大學：
 - 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
 - 香港大學
- (b) 基金下成立的研發中心：
 - 汽車科技研發中心
 - 物流及供應鏈多元技術研發中心
 - 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
- (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:
 - 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
 - The University of Hong Kong
- (b) R&D Centres set up under the ITF:
 - Automotive Platforms and Application Systems R&D Centre
 - Logistics and Supply Chain MultiTech R&D Centre
 - 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
- (c) Hong Kong Productivity Council
- (d) Vocational Training Council
- (e) Hong Kong Institute of Biotechnology

3.16 另外，為鼓勵風險投資基金於本地的創科初創企業作更多投資，政府成立 20 億元的「創科創投基金」，與風險投資基金按 1:2 的出資比例共同投資。截至 2022 年 3 月，「創科創投基金」曾投資於 26 間創科初創企業，投資額約 2 億元。

科技應用

3.17 政府於 2016 年 11 月在基金下推出「科技券」，資助本地企業和機構使用科技服務及方案，以提高生產力或將業務程序升級轉型。每個科技券獲批項目的政府資助比例為四分之三，每間企業／機構的資助上限和獲批項目數目上限分別為 60 萬元和 6 個。於 2021-22 財政年度，「科技券」共批出 2 346 宗申請，涉及資助額約 3.2 億元。

3.18 為了向「再工業化」注入動力，推動發展以新技術及智能生產為基礎的先進製造業，以及為香港的經濟尋找新的增長點，政府於 2020 年 7 月在基金下推出「再工業化資助計劃」，資助生產商在香港設立新的智能生產線。資助以 1（政府）：2（公司）的配對形式提供，每個項目最高資助額為項目總支出的三分之一或 1,500 萬元，金額以較低者為準。於 2021-22 財政年度，計劃的評審委員會原則上同意支持 19 宗申請，涉及總資助額約為 1.4 億元。

3.16 To encourage venture capital (VC) funds to invest more in local I&T start-ups, the Government set up the \$2 billion Innovation and Technology Venture Fund (ITVF) to co-invest with VC funds in the ratio of 1:2. As at March 2022, the ITVF has invested in 26 I&T start-ups with a total investment of about \$200 million.

Technology Adoption

3.17 The Government launches the Technology Voucher Programme (TVP) under the ITF in November 2016 which subsidises local enterprises and organisations to use technological services and solutions to improve productivity, upgrade or transform their business processes. The Government funding ratio of the TVP is three-fourths. The funding ceiling and the maximum number of approved projects per entity are \$600,000 and 6 respectively. In the financial year 2021-22, the TVP approved 2 346 applications, involving a total funding amount of about \$320 million.

3.18 To add impetus to “re-industrialisation”, promote the development of advanced manufacturing industries that are based on new technologies and smart production and identify new growth points for Hong Kong’s economic development, the Government launched the Re-industrialisation Funding Scheme (RFS) under the ITF in July 2020 to subsidise manufacturers to set up new smart production lines in Hong Kong. Funding is provided on a 1 (Government):2 (company) matching basis, with the Government covering at most one-third of the total approved project cost or \$15 million per project, whichever is lower. In the financial year 2021-22, the RFS Vetting Committee agreed in principle to support 19 applications involving a total funding amount of about \$140 million.

技術轉移

3.19 本港的大專院校是推動研發成果商品化的重要對象。政府自 2013-14 財政年度開始透過基金，向指定大學⁽²⁾的技術轉移處提供資助，以提升其技術轉移能力。每間技術轉移處的資助上限已由 2019-20 財政年度起倍增至每年 800 萬元。基金批出撥款承擔額共 5,600 萬元，以資助各技術轉移處於 2021-22 財政年度的技術轉移相關開支。

3.20 政府於 2014-15 財政年度推出「大學科技初創企業資助計劃」，支援 6 所大學⁽³⁾的團隊創立科技初創企業，商品化其研發成果。在 2021-22 財政年度，該計劃共資助了 87 間科技初創企業，所涉的撥款承擔額約 4,800 萬元。為進一步協助初創企業商品化研發成果，每所大學的資助上限將會由 2023-24 財政年度起倍增至每年 1,600 萬元。

3.21 香港的國家重點實驗室是獲科技部認可，在特定科技範疇有卓越研究表現的本地實驗室。這些實驗室擔當着高水平研發、匯聚及培育優秀研究員以及促進交流的角色。本港現時共有 16 間國家重點實驗室。基金批出撥款承擔額共 1.6 億元，以資助這些實驗室於 2020-21 財政年度的研發相關開支。有關的資助將會由 2022-23 財政年度起倍增至 3.2 億元，讓實驗室有更多資源進行研發活動。

(2) 指定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、香港大學，以及自 2019-20 年度起新增的香港教育大學。

(3) 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。

Technology Transfer

3.19 Tertiary institutions in Hong Kong are important targets for promoting commercialisation of R&D results. Starting from the financial year 2013-14, the Government has been providing funding through the ITF to the Technology Transfer Offices (TTOs) of designated universities⁽²⁾ with a view to enhancing their technology transfer capabilities. The maximum annual funding for each TTO has been doubled to \$8 million from the financial year 2019-20 onwards. The ITF committed a total of \$56 million to technology transfer related expenditure incurred by the TTOs in the financial year 2021-22.

3.20 The Technology Start-up Support Scheme for Universities (TSSSU) was launched in the financial year 2014-15 by the Government to support teams of 6 universities⁽³⁾ to start technology businesses and commercialise their R&D results. In the financial year 2021-22, 87 technology start-ups were supported by the TSSSU funding. A total amount of approximately \$48 million was committed. To further support the start-ups to commercialise their R&D results, the maximum annual funding for each university will be doubled to \$16 million with effect from the financial year 2023-24.

3.21 State Key Laboratories (SKLs) in Hong Kong are laboratories recognised by the MOST for their research excellence in particular technology areas. The SKLs serve as a base for conducting quality R&D, congregating and nurturing outstanding researchers, as well as facilitating exchanges. There are currently 16 SKLs in Hong Kong. The ITF committed a total of \$160 million to support R&D related expenditure incurred by the SKLs in the financial year 2020-21. The funding amount will be doubled to \$320 million with effect from the financial year 2022-23 so that the SKLs can have more resources to conduct R&D activities.

(2) Designated 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, the University of Hong Kong; and starting from 2019-20, the Education University of Hong Kong has also been included.

(3) 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.

3.22 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措施的重要組成部分。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 6 間國家工程技術研究中心香港分中心（香港分中心）。基金批出撥款承擔額共 6,000 萬元，以資助香港分中心於 2020-21 財政年度的研發相關開支。有關的資助將會由 2022-23 財政年度起倍增至 1.2 億元，讓香港分中心有更多資源進行研發活動。

人才培訓

3.23 「研究人才庫」在 2020 年推出（整合了於 2004 年推出的「研究員計劃」及在 2018 年推出的「博士專才庫」），資助合資格機構／公司聘用最多 4 名持有由本地大學或具特別認受性的非本地院校頒授的科學、科技、工程和數學（STEM）相關學科學位的畢業生進行研發工作。計劃為每名持有學士、碩士或博士學位的研究人才分別提供 18,000 元、21,000 元或 32,000 元的每月最高津貼額。每名研究人才的聘用期一般最長為 36 個月。合資格申請者包括進行獲基金資助的研發項目的機構／公司、科技園公司及數碼港的培育公司及創科租戶，以及在香港進行研發活動的科技公司。在 2021-22 財政年度，研究人才庫批出約 1 900 個研究人才申請，涉及資助額約為 10.2 億元。

3.24 在 2018 年 8 月推出的「再工業化及科技培訓計劃」以 2（政府）：1（企業）的配對形式資助本地企業人員接受科技培訓，尤其是與「工業 4.0」有關的培訓。在 2021-22 財政年度，計劃共資助逾 6 053 名本地企業人員接受 7 950 次科技培訓，涉及資助額約 6,943 萬元。

3.22 Chinese National Engineering Research Centres (CNERCs) are under the auspices of the MOST and serve as a major component of the initiative to drive basic as well as applied technological R&D in the Mainland. Research institutes approved by the MOST as the CNERCs have strong R&D capabilities and enjoy leading positions in their chosen areas of expertise both in the Mainland and in the international arena. There are currently 6 Hong Kong branches of the CNERCs. The ITF committed a total of \$60 million to support R&D related expenditure incurred by the Hong Kong branches of the CNERCs in the financial year 2020-21. The funding amount will be doubled to \$120 million with effect from the financial year 2022-23 so that the SKLs can have more resources to conduct R&D activities.

Nurturing Talent

3.23 The Research Talent Hub (RTH) was introduced in 2020 (merging the Researcher Programme launched in 2004 and Postdoctoral Hub launched in 2018) to provide funding support for eligible organisations/companies to engage up to 4 university graduates in Science, Technology, Engineering and Mathematics (STEM)-related disciplines from a local university or a well-recognised non-local institution to conduct R&D work. It provides maximum monthly allowances of \$18,000, \$21,000 or \$32,000 for each research talent with a bachelor's, master's or doctoral degree respectively. The maximum engagement period for each research talent is generally 36 months. Eligible applicants of the RTH include organisations/companies undertaking ITF-funded R&D projects, incubatees and I&T tenants of the HKSTPC and Cyberport, as well as technology companies conducting R&D activities in Hong Kong. In the financial year 2021-22, the RTH approved about 1 900 applications for research talent involving funding of about \$1,020 million.

3.24 Launched in August 2018, the Reindustrialisation and Technology Training Programme (RTTP) funds local enterprises on a 2(Government):1(enterprise) matching basis for their staff to receive technology training, especially those related to "Industry 4.0". In the financial year 2021-22, the RTTP supported over 6 053 staff of local enterprises to receive 7 950 technology training, involving funding of about \$69.43 million.

3.25 「創科實習計劃」於 2020 年 6 月推出，旨在鼓勵本地 STEM 本科生及研究生在修讀有關學科期間，體驗與創科相關的工作，及早培養他們對在畢業後投身創科事業的興趣，藉此壯大本地的創科人才庫。政府在 2020-21 財政年度預留了 4,000 萬元以先導形式推行計劃，由於學界和業界反應熱烈，計劃自 2021-22 財政年度起已恆常化。在 2021-22 年度的暑假和寒假共吸引超過 3 000 名實習生參與計劃。

3.26 「科技人才入境計劃」於 2018 年 6 月推出，為合資格公司輸入海外和內地科技人才來港從事研發工作實施快速處理安排。計劃的適用範圍已由 2020 年 1 月 30 日起擴大至全港有在 13 個指定科技範疇進行研發活動的公司，讓更多公司受惠於計劃的確定性和簡化手續。截至 2022 年 3 月 31 日，創新科技署已批出 620 個配額；而入境事務處則已批出 285 宗簽證或進入許可的申請。

創科文化

3.27 政府支援並不時舉辦推廣活動，以推動和鼓勵業界以至社會大眾及年輕一代等各界別，參與更多研發及創新活動。在 2021-22 財政年度，創新科技署撥出約 1.81 億元進行這些推廣活動。

3.28 總括而言，創新科技署在 2021-22 財政年度共撥款 40.41 億元支持應用研發及創新活動。

3.25 Launched in June 2020, the STEM Internship Scheme aims to encourage local STEM undergraduates and postgraduates to gain I&T-related work experience during their studies and to foster their interest in pursuing a career in the I&T after graduation, so as to enlarge the local I&T talent pool. In the financial year 2020-21, the Government set aside \$40 million for the pilot Scheme. In view of the enthusiastic responses from universities and the business community, the Scheme has been regularised starting from the financial year 2021-22. In the summer and winter of 2021-22, the Scheme attracted the participation of over 3 000 student interns.

3.26 The Technology Talent Admission Scheme (TechTAS) was launched in June 2018 to provide a fast-track arrangement for eligible companies to admit overseas and Mainland technology talent to undertake R&D work for them in Hong Kong. Since 30 January 2020, the TechTAS has been extended to cover all companies conducting R&D activities in 13 relevant technology areas in Hong Kong. More companies can hence benefit from the certainty and streamlined procedures offered by the Scheme. As at 31 March 2022, the ITC has allotted 620 quotas and the Immigration Department has approved 285 visa/entry permits.

I&T Culture

3.27 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 younger generation. In the financial year 2021-22, the ITC committed about \$181 million to these promotional activities.

3.28 To conclude, the ITC's funding support for applied R&D and innovation activities amounted to a sum of \$4,041 million in the financial year 2021-22.

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 (百萬元) ITC funding support (\$ million)	2017-18	2018-19	2019-20	2020-21	2021-22
應用研發項目 (進行中及獲批項目的數目) Applied R&D projects (no. of ongoing and approved projects)	1,149.5 (2 721)	1,199.7 (4 079)	1,528.4 (5 757)	4,189.3*(i) (7 932)	2,619.4 (8 925)
科技應用 Technology adoption	61.5	67.3	164.7	231.5	412.8
再工業化及科技培訓計劃 Reindustrialisation and Technology Training Programme	-	11.3	5.7	11.2	62.4
專利申請資助計劃 Patent Application Grants	42.0	36.0	30.0	15.0	31.1
公營科技支援機構的營運 Operation of public technology support organisations	509.7	525.8	537.5	558.5	630.6
技術轉移及科技創業 Technology transfer and technopreneurship	47.5	46.6	94.6*	96.2*	104.0
推廣創科文化 Promotion of I&T culture	47.9	49.1	47.1	102.2*	180.6
總計 Total	1,858.2	1,935.8	2,408.0*	5,203.9*	4,040.9

註釋：(i) 創新科技署在 2020-21 財政年度的撥款資助金額顯著上升，主要由於署方為在「InnoHK 創新香港研發平台」成立的研發中心提供資金，作為研發開支及一次性資本資助。括號內數字為該財政年度進行中及獲批應用研發項目的數目。

Notes: (i) The significant increase in the amount of ITC funding support for the financial year 2020-21 is mainly attributed to the funding provided to the R&D centres under the *InnoHK* Research Clusters for the R&D expenses and one-off capital support. Figures in brackets refer to the number of applied R&D projects that were ongoing plus those that were approved in that financial year.

表 1.1 按進行研發活動的機構類別劃分的本地研發總開支及研發人員的統計數字
Table 1.1 Statistics on gross domestic expenditure on R&D and R&D personnel by performing sector

機構類別 Sector	年度 Year	本地研發總開支（百萬元） Gross domestic expenditure on R&D (\$ million)			研發人員數目（以相當於全日制的人數計算） No. of R&D personnel (in full-time equivalent)	
工商 Business	2019	11,616.5	(44.1%)	[0.41%]	13 748	(38.8%)
	2020	11,043.9	(41.6%)	[0.41%] [@]	13 335	(36.9%)
	2021	11,699.3	(42.0%)	[0.41%] [@]	13 002	(34.7%)
高等教育 Higher education	2019	13,432.4	(51.0%)	[0.47%]	20 643	(58.3%)
	2020	14,129.3	(53.2%)	[0.53%] [@]	21 715	(60.1%)
	2021	14,735.2	(53.0%)	[0.51%] [@]	23 423	(62.5%)
政府 Government	2019	1,283.8	(4.9%)	[0.05%]	1 025	(2.9%)
	2020	1,380.4	(5.2%)	[0.05%] [@]	1 056	(2.9%)
	2021	1,392.3	(5.0%)	[0.05%] [@]	1 030	(2.7%)
總計 Total	2019	26,332.6	(100.0%)	[0.93%]	35 416	(100.0%)
	2020	26,553.6	(100.0%)	[0.99%] [@]	36 106	(100.0%)
	2021	27,826.9	(100.0%)	[0.97%] [@]	37 455	(100.0%)

註釋：圓括號內數字為相應數值佔總計的百分比。

方括號內數字為相應開支相對2022年11月發表以開支面編製並以當時市價計算的本地生產總值估算的比率。

Notes: Figures in round brackets refer to percentages of corresponding values in respect of total.

Figures in square brackets refer to the ratios of corresponding expenditure to expenditure-based Gross Domestic Product (GDP) estimates at current market prices released in November 2022.

表 1.2 按進行研發活動的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)

百萬元
\$ million

機構類別 Sector	年度 Year	經常開支 Current expenditure		資本開支 Capital expenditure		本地研發總開支 Gross domestic expenditure on R&D	
工商 Business	2019	10,083.6	(86.8%)	1,532.8	(13.2%)	11,616.5	(100.0%)
	2020	9,640.5	(87.3%)	1,403.4	(12.7%)	11,043.9	(100.0%)
	2021	9,285.1	(79.4%)	2,414.3	(20.6%)	11,699.3	(100.0%)
高等教育 Higher education	2019	12,698.9	(94.5%)	733.4	(5.5%)	13,432.4	(100.0%)
	2020	13,259.8	(93.8%)	869.6	(6.2%)	14,129.3	(100.0%)
	2021	13,898.7	(94.3%)	836.5	(5.7%)	14,735.2	(100.0%)
政府 Government	2019	1,171.2	(91.2%)	112.6	(8.8%)	1,283.8	(100.0%)
	2020	1,274.0	(92.3%)	106.4	(7.7%)	1,380.4	(100.0%)
	2021	1,268.1	(91.1%)	124.2	(8.9%)	1,392.3	(100.0%)
總計 Total	2019	23,953.7	(91.0%)	2,378.9	(9.0%)	26,332.6	(100.0%)
	2020	24,174.3	(91.0%)	2,379.3	(9.0%)	26,553.6	(100.0%)
	2021	24,451.9	(87.9%)	3,375.0	(12.1%)	27,826.9	(100.0%)

註釋：括號內數字為相應開支佔該年本地研發總開支的百分比。

Note: Figures in brackets refer to the percentage shares of corresponding expenditure in respect of gross domestic expenditure on R&D for that year.

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

百萬元
\$ million

資金來源 Source of funds	本地研發總開支 Gross domestic expenditure on R&D		
	2019	2020	2021
本地機構 Local parties			
工商 Business	12,815.7 (48.7%)	11,991.8 (45.2%)	11,594.0 (41.7%)
政府 Government	12,487.2 (47.4%)	13,430.7 (50.6%)	14,525.2 (52.2%)
高等教育及其他本地機構 Higher education and other local parties	39.6 (0.2%)	106.6 (0.4%)	6.8 (\$)
香港以外機構 Parties outside Hong Kong			
	990.1 (3.8%)	1,024.5 (3.9%)	1,700.9 (6.1%)
總計 Total	26,332.6 (100.0%)	26,553.6 (100.0%)	27,826.9 (100.0%)

註釋：括號內數字為相應數值佔總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total.

表 1.4 按進行研發活動的機構類別及職能類別劃分的研發人員數目（以相當於全日制的人數計算）
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 Business	2019	11 462	(83.4%)	1 482	(10.8%)	804	(5.8%)	13 748	(100.0%)
	2020	11 343	(85.1%)	1 560	(11.7%)	432	(3.2%)	13 335	(100.0%)
	2021	11 350	(87.3%)	1 037	(8.0%)	615	(4.7%)	13 002	(100.0%)
高等教育 Higher education	2019	19 376	(93.9%)	605	(2.9%)	661	(3.2%)	20 643	(100.0%)
	2020	20 365	(93.8%)	691	(3.2%)	660	(3.0%)	21 715	(100.0%)
	2021	22 142	(94.5%)	658	(2.8%)	623	(2.7%)	23 423	(100.0%)
政府 Government	2019	884	(86.2%)	95	(9.3%)	46	(4.5%)	1 025	(100.0%)
	2020	921	(87.2%)	81	(7.7%)	54	(5.2%)	1 056	(100.0%)
	2021	899	(87.3%)	75	(7.3%)	56	(5.4%)	1 030	(100.0%)
總計 Total	2019	31 722	(89.6%)	2 183	(6.2%)	1 511	(4.3%)	35 416	(100.0%)
	2020	32 628	(90.4%)	2 332	(6.5%)	1 146	(3.2%)	36 106	(100.0%)
	2021	34 391	(91.8%)	1 769	(4.7%)	1 294	(3.5%)	37 455	(100.0%)

註釋：括號內數字為相應數值佔該年總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total for that year.

表 1.5 按選定行業組別／機構單位規模劃分的2021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 2021 by selected industry grouping/size of establishment

	機構單位數目 總計 Total no. of establishments	有進行研發活動 的機構單位數目 ⁽¹⁾ No. of establishments having undertaken R&D activities ⁽¹⁾		內部研發活動總開支 ⁽²⁾ (百萬元) Total expenditure on in-house R&D activities ⁽²⁾ (\$ million)		研發人員數目 (以相當於全日制的人數計算) No. of R&D personnel (in full-time equivalent)	
按行業組別劃分 By industry grouping							
製造 Manufacturing	7 950	147	(3.7%)	387.6	(3.3%)	481	(3.7%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	146 778	1 767	(44.5%)	3,072.2	(26.3%)	3 796	(29.2%)
資訊及通訊 Information and communications	14 599	1 264	(31.8%)	4,610.5	(39.4%)	5 634	(43.3%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	84 125	662	(16.7%)	3,064.4	(26.2%)	2 727	(21.0%)
其他 Others	45 646	132	(3.3%)	564.6	(4.8%)	364	(2.8%)
總計 Total	299 098	3 972	(100.0%)	11,699.3	(100.0%)	13 002	(100.0%)
按機構單位規模劃分 By size of establishment							
大型 Large	5 290	206	(5.2%)	5,480.1	(46.8%)	4 576	(35.2%)
中型 Medium	30 532	974	(24.5%)	4,101.9	(35.1%)	4 881	(37.5%)
小型 Small	263 275	2 792	(70.3%)	2,117.4	(18.1%)	3 544	(27.3%)
總計 Total	299 098	3 972	(100.0%)	11,699.3	(100.0%)	13 002	(100.0%)

註釋：(1) 數字包括有進行內部研發活動的機構單位及外判研發活動予其他機構的機構單位。

(2) 數字包括本地機構單位為本身及／或為其他機構進行的內部研發活動開支。

括號內數字為相應數值佔總計的百分比。

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

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

Figures in brackets refer to percentages of corresponding values in respect of total.

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／機構單位規模劃分的2021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 2021 by type of R&D expenditure (i.e. current and capital expenditure) by selected industry grouping/size of establishment

	百萬元 \$ 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	356.9	30.7	387.6
Manufacturing	(92.1%)	(7.9%)	(100.0%)
進出口貿易、批發及零售以及住宿及膳食服務	2,806.8	265.5	3,072.2
Import/export, wholesale and retail trades, and accommodation and food services	(91.4%)	(8.6%)	(100.0%)
資訊及通訊	3,169.1	1,441.4	4,610.5
Information and communications	(68.7%)	(31.3%)	(100.0%)
金融及保險、地產、專業及商用服務	2,453.1	611.3	3,064.4
Financing and insurance, real estate, professional and business services	(80.1%)	(19.9%)	(100.0%)
其他	499.2	65.4	564.6
Others	(88.4%)	(11.6%)	(100.0%)
總計	9,285.1	2,414.3	11,699.3
Total	(79.4%)	(20.6%)	(100.0%)
按機構單位規模劃分			
By size of establishment			
大型	3,819.9	1,660.2	5,480.1
Large	(69.7%)	(30.3%)	(100.0%)
中型	3,515.4	586.4	4,101.9
Medium	(85.7%)	(14.3%)	(100.0%)
小型	1,949.7	167.7	2,117.4
Small	(92.1%)	(7.9%)	(100.0%)
總計	9,285.1	2,414.3	11,699.3
Total	(79.4%)	(20.6%)	(100.0%)

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

括號內數字為相應數值佔該列總計的百分比。

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

Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.7 按研究類別及選定行業組別／機構單位規模劃分的2021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 2021 by type of research by selected industry grouping/size of establishment

百萬元
\$ 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	實驗開發 Experimental development		
			產品開發 Product development	程序開發 Process development	
按行業組別劃分 By industry grouping					
製造 Manufacturing	***	136.6 (35.3%)	248.7 (64.2%)	***	387.6 (100.0%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	***	929.7 (30.3%)	2,019.9 (65.7%)	***	3,072.2 (100.0%)
資訊及通訊 Information and communications	***	1,745.5 (37.9%)	2,802.1 (60.8%)	***	4,610.5 (100.0%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	40.2 (1.3%)	1,609.2 (52.5%)	1,291.6 (42.1%)	123.3 (4.0%)	3,064.4 (100.0%)
其他 Others	***	301.9 (53.5%)	244.9 (43.4%)	***	564.6 (100.0%)
總計 Total	43.1 (0.4%)	4,723.0 (40.4%)	6,607.3 (56.5%)	325.9 (2.8%)	11,699.3 (100.0%)
按機構單位規模劃分 By size of establishment					
大型 Large	***	1,867.7 (34.1%)	3,364.2 (61.4%)	***	5,480.1 (100.0%)
中型 Medium	***	2,021.6 (49.3%)	2,002.5 (48.8%)	***	4,101.9 (100.0%)
小型 Small	8.6 (0.4%)	833.7 (39.4%)	1,240.7 (58.6%)	34.4 (1.6%)	2,117.4 (100.0%)
總計 Total	43.1 (0.4%)	4,723.0 (40.4%)	6,607.3 (56.5%)	325.9 (2.8%)	11,699.3 (100.0%)

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

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

括號內數字為相應數值佔該列總計的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.8 按研發活動範疇及選定行業組別／機構單位規模劃分的2021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 2021 by field of R&D activity by selected industry grouping/size of establishment

百萬元
\$ million

	研發活動範疇 Field of R&D activity			總計 ⁽¹⁾ Total ⁽¹⁾
	自然科學 Natural sciences	工程及科技 Engineering and technology	醫療及健康科學、 社會科學和 人文科學及藝術 Medical and health sciences, social sciences, and humanities and arts	
按行業組別劃分 By industry grouping				
製造 Manufacturing	60.9 (15.7%)	227.1 (58.6%)	99.7 (25.7%)	387.6 (100.0%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	1,370.9 (44.6%)	1,639.8 (53.4%)	61.5 (2.0%)	3,072.2 (100.0%)
資訊及通訊 Information and communications	4,205.0 (91.2%)	278.1 (6.0%)	127.4 (2.8%)	4,610.5 (100.0%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	615.9 (20.1%)	1,012.0 (33.0%)	1,436.5 (46.9%)	3,064.4 (100.0%)
其他 Others	486.4 (86.1%)	37.8 (6.7%)	40.4 (7.2%)	564.6 (100.0%)
總計 Total	6,739.0 (57.6%)	3,194.8 (27.3%)	1,765.6 (15.1%)	11,699.3 (100.0%)
按機構單位規模劃分 By size of establishment				
大型 Large	3,836.1 (70.0%)	1,289.1 (23.5%)	354.8 (6.5%)	5,480.1 (100.0%)
中型 Medium	1,924.1 (46.9%)	1,168.4 (28.5%)	1,009.4 (24.6%)	4,101.9 (100.0%)
小型 Small	978.8 (46.2%)	737.2 (34.8%)	401.4 (19.0%)	2,117.4 (100.0%)
總計 Total	6,739.0 (57.6%)	3,194.8 (27.3%)	1,765.6 (15.1%)	11,699.3 (100.0%)

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

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

括號內數字為相應數值佔該列總計的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.9 按科技領域及選定行業組別／機構單位規模劃分的2021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 2021 by technology area by selected industry grouping/size of establishment

百萬元
\$ million

	科技領域 Technology area								總計 ⁽¹⁾ Total ⁽¹⁾
	資訊系統及科技 Information system and technology	電腦軟件科技 Computer software technology	通訊科技 Communication technology	電機及電子 工程科技 Electrical and electronics engineering technology	製造科技 Manufacturing technology	先進材料科技 Advanced materials technology	生物科技 Bio-technology	其他 Others	
按行業組別劃分 By industry grouping									
製造 Manufacturing	4.4 (1.1%)	5.7 (1.5%)	***	130.8 (33.7%)	***	13.2 (3.4%)	71.0 (18.3%)	83.5 (21.5%)	387.6 (100.0%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	152.5 (5.0%)	407.2 (13.3%)	345.2 (11.2%)	904.1 (29.4%)	304.8 (9.9%)	249.8 (8.1%)	68.6 (2.2%)	640.0 (20.8%)	3,072.2 (100.0%)
資訊及通訊 Information and communications	1,489.9 (32.3%)	1,475.1 (32.0%)	1,029.7 (22.3%)	263.0 (5.7%)	***	***	2.3 (\$)	348.9 (7.6%)	4,610.5 (100.0%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	251.4 (8.2%)	250.0 (8.2%)	81.9 (2.7%)	506.4 (16.5%)	313.9 (10.2%)	105.6 (3.4%)	1,332.9 (43.5%)	222.3 (7.3%)	3,064.4 (100.0%)
其他 Others	139.0 (24.6%)	335.4 (59.4%)	***	14.4 (2.6%)	9.5 (1.7%)	***	40.6 (7.2%)	17.2 (3.0%)	564.6 (100.0%)
總計 Total	2,037.2 (17.4%)	2,473.5 (21.1%)	1,499.0 (12.8%)	1,818.7 (15.5%)	671.2 (5.7%)	372.7 (3.2%)	1,515.4 (13.0%)	1,311.8 (11.2%)	11,699.3 (100.0%)
按機構單位規模劃分 By size of establishment									
大型 Large	996.3 (18.2%)	1,247.1 (22.8%)	1,192.6 (21.8%)	703.8 (12.8%)	397.6 (7.3%)	152.2 (2.8%)	321.2 (5.9%)	469.2 (8.6%)	5,480.1 (100.0%)
中型 Medium	761.3 (18.6%)	685.1 (16.7%)	239.6 (5.8%)	724.1 (17.7%)	182.4 (4.4%)	87.0 (2.1%)	825.1 (20.1%)	597.2 (14.6%)	4,101.9 (100.0%)
小型 Small	279.6 (13.2%)	541.2 (25.6%)	66.7 (3.1%)	390.7 (18.5%)	91.2 (4.3%)	133.5 (6.3%)	369.0 (17.4%)	245.5 (11.6%)	2,117.4 (100.0%)
總計 Total	2,037.2 (17.4%)	2,473.5 (21.1%)	1,499.0 (12.8%)	1,818.7 (15.5%)	671.2 (5.7%)	372.7 (3.2%)	1,515.4 (13.0%)	1,311.8 (11.2%)	11,699.3 (100.0%)

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

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

括號內數字為相應數值佔該列總計的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.10 按資金來源及選定行業組別／機構單位規模劃分的2021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 2021 by source of funds by selected industry grouping/size of establishment

百萬元
\$ 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		
	自資 Self-financed	機構單位所屬企業集團 的分支機構或總公司 Affiliate or parent company of the enterprise group	政府 及其他本地機構 Government and other local party	機構單位所屬企業集團 的分支機構或總公司 及其他香港以外機構 Affiliate or parent company of the enterprise group and other party outside Hong Kong	
按行業組別劃分 By industry grouping					
製造 Manufacturing	297.2 (76.7%)	***	37.1 (9.6%)	***	387.6 (100.0%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	2,372.9 (77.2%)	21.7 (0.7%)	219.8 (7.2%)	457.7 (14.9%)	3,072.2 (100.0%)
資訊及通訊 Information and communications	4,142.8 (89.9%)	***	411.1 (8.9%)	***	4,610.5 (100.0%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	1,007.9 (32.9%)	298.4 (9.7%)	1,119.7 (36.5%)	638.5 (20.8%)	3,064.4 (100.0%)
其他 Others	495.8 (87.8%)	***	50.3 (8.9%)	***	564.6 (100.0%)
總計 Total	8,316.6 (71.1%)	335.0 (2.9%)	1,838.1 (15.7%)	1,209.7 (10.3%)	11,699.3 (100.0%)
按機構單位規模劃分 By size of establishment					
大型 Large	4,238.5 (77.3%)	***	454.6 (8.3%)	***	5,480.1 (100.0%)
中型 Medium	2,687.5 (65.5%)	48.6 (1.2%)	949.2 (23.1%)	416.5 (10.2%)	4,101.9 (100.0%)
小型 Small	1,390.6 (65.7%)	***	434.2 (20.5%)	***	2,117.4 (100.0%)
總計 Total	8,316.6 (71.1%)	335.0 (2.9%)	1,838.1 (15.7%)	1,209.7 (10.3%)	11,699.3 (100.0%)

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

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

括號內數字為相應數值佔該列總計的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.11 按職能類別及選定行業組別／機構單位規模劃分的2021年工商機構的研發人員數目（人數和以相當於全日制的人數計算）
Table 1.11 Number of R&D personnel (in headcount and full-time equivalent) in the business sector in 2021 by type of function by selected industry grouping/size of establishment

	職能類別 Type of function							
	研究員 Researchers		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 Manufacturing	539 (84.6%)	429 (89.1%)	***	***	***	***	637 (100.0%)	481 (100.0%)
進出口貿易、批發及零售以及住宿及 膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	4 181 (86.0%)	3 259 (85.8%)	496 (10.2%)	392 (10.3%)	183 (3.8%)	146 (3.8%)	4 860 (100.0%)	3 796 (100.0%)
資訊及通訊 Information and communications	5 879 (86.4%)	4 947 (87.8%)	494 (7.3%)	405 (7.2%)	433 (6.4%)	282 (5.0%)	6 806 (100.0%)	5 634 (100.0%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	3 416 (89.2%)	2 449 (89.8%)	245 (6.4%)	173 (6.3%)	168 (4.4%)	105 (3.9%)	3 829 (100.0%)	2 727 (100.0%)
其他 Others	449 (72.2%)	267 (73.4%)	***	***	***	***	622 (100.0%)	364 (100.0%)
總計 Total	14 464 (86.3%)	11 350 (87.3%)	1 348 (8.0%)	1 037 (8.0%)	942 (5.6%)	615 (4.7%)	16 754 (100.0%)	13 002 (100.0%)
按機構單位規模劃分 By size of establishment								
大型 Large	4 799 (85.6%)	3 907 (85.4%)	587 (10.5%)	526 (11.5%)	221 (3.9%)	143 (3.1%)	5 606 (100.0%)	4 576 (100.0%)
中型 Medium	5 067 (84.3%)	4 157 (85.2%)	486 (8.1%)	358 (7.3%)	460 (7.7%)	366 (7.5%)	6 014 (100.0%)	4 881 (100.0%)
小型 Small	4 598 (89.6%)	3 286 (92.7%)	275 (5.4%)	152 (4.3%)	261 (5.1%)	106 (3.0%)	5 134 (100.0%)	3 544 (100.0%)
總計 Total	14 464 (86.3%)	11 350 (87.3%)	1 348 (8.0%)	1 037 (8.0%)	942 (5.6%)	615 (4.7%)	16 754 (100.0%)	13 002 (100.0%)

註釋：括號內數字為相應數值佔該列總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.12 按教育程度及選定行業組別／機構單位規模劃分的2021年工商機構的研發人員數目（人數和以相當於全日制的人數計算）
Table 1.12 Number of R&D personnel (in headcount and full-time equivalent) in the business sector in 2021 by level of education by selected industry grouping/size of establishment

	教育程度 Level of education									
	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		專上教育： 副學位／文憑／證書 Post-secondary: sub- degree/diploma/certificate		專上教育程度以下 Below post-secondary level		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	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 Manufacturing	***	***	413 (64.9%)	324 (67.3%)	50 (7.8%)	20 (4.2%)	***	***	637 (100.0%)	481 (100.0%)
進出口貿易、批發及零售以及住宿及 膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	626 (12.9%)	519 (13.7%)	3 681 (75.7%)	2 928 (77.1%)	432 (8.9%)	268 (7.1%)	121 (2.5%)	81 (2.1%)	4 860 (100.0%)	3 796 (100.0%)
資訊及通訊 Information and communications	1 280 (18.8%)	1 023 (18.2%)	5 159 (75.8%)	4 383 (77.8%)	168 (2.5%)	124 (2.2%)	200 (2.9%)	103 (1.8%)	6 806 (100.0%)	5 634 (100.0%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	1 113 (29.1%)	860 (31.5%)	2 576 (67.3%)	1 774 (65.1%)	89 (2.3%)	56 (2.1%)	51 (1.3%)	37 (1.4%)	3 829 (100.0%)	2 727 (100.0%)
其他 Others	***	***	267 (43.0%)	182 (49.9%)	317 (50.9%)	160 (43.9%)	***	***	622 (100.0%)	364 (100.0%)
總計 Total	3 170 (18.9%)	2 530 (19.5%)	12 096 (72.2%)	9 590 (73.8%)	1 054 (6.3%)	628 (4.8%)	433 (2.6%)	253 (1.9%)	16 754 (100.0%)	13 002 (100.0%)
按機構單位規模劃分 By size of establishment										
大型 Large	746 (13.3%)	668 (14.6%)	4 329 (77.2%)	3 609 (78.9%)	460 (8.2%)	250 (5.5%)	70 (1.3%)	48 (1.1%)	5 606 (100.0%)	4 576 (100.0%)
中型 Medium	1 243 (20.7%)	1 034 (21.2%)	4 327 (72.0%)	3 486 (71.4%)	316 (5.3%)	253 (5.2%)	127 (2.1%)	108 (2.2%)	6 014 (100.0%)	4 881 (100.0%)
小型 Small	1 180 (23.0%)	828 (23.3%)	3 440 (67.0%)	2 494 (70.4%)	278 (5.4%)	126 (3.5%)	236 (4.6%)	97 (2.7%)	5 134 (100.0%)	3 544 (100.0%)
總計 Total	3 170 (18.9%)	2 530 (19.5%)	12 096 (72.2%)	9 590 (73.8%)	1 054 (6.3%)	628 (4.8%)	433 (2.6%)	253 (1.9%)	16 754 (100.0%)	13 002 (100.0%)

註釋：括號內數字為相應數值佔該列總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.13 按進行研發活動的機構所在地及選定行業組別／機構單位規模劃分的2021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 2021 by location of party performing R&D activities by selected industry grouping/size of establishment

	百萬元 \$ 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 Manufacturing	***	***	10.9 (100.0%)
進出口貿易、批發及零售以及住宿及 膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	714.0 (57.7%)	523.4 (42.3%)	1,237.3 (100.0%)
資訊及通訊 Information and communications	3,238.1 (69.7%)	1,410.9 (30.3%)	4,649.0 (100.0%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	282.4 (36.1%)	500.2 (63.9%)	782.7 (100.0%)
其他 Others	***	***	53.4 (100.0%)
總計 Total	4,280.7 (63.6%)	2,452.6 (36.4%)	6,733.3 (100.0%)
按機構單位規模劃分 By size of establishment			
大型 Large	3,658.1 (68.5%)	1,685.1 (31.5%)	5,343.2 (100.0%)
中型 Medium	214.4 (49.2%)	221.6 (50.8%)	436.0 (100.0%)
小型 Small	408.2 (42.8%)	545.9 (57.2%)	954.1 (100.0%)
總計 Total	4,280.7 (63.6%)	2,452.6 (36.4%)	6,733.3 (100.0%)

註釋：括號內數字為相應數值佔該列總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 1.14 按進行研發活動的機構類別劃分的2021年工商機構的外判研發活動總開支

Table 1.14 Total expenditure on contracted-out R&D activities in the business sector in 2021 by type of party performing R&D activities

進行研發活動的機構類別 Type of party performing R&D activities	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 organisation ⁽¹⁾	370.3	(5.5%)
高等教育機構 Higher education institution	412.8	(6.1%)
機構單位所屬企業集團的分支機構或總公司 Affiliate or parent company of the enterprise group	3,451.5	(51.3%)
機構單位所屬企業集團以外的機構 Organisation not affiliated with the enterprise group	2,497.0	(37.1%)
其他 Others	1.7	(\$)
總計 Total	6,733.3	(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。

括號內數字為相應數值佔總計的百分比。

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

Figures in brackets refer to percentages of corresponding values in respect of total.

表 1.15 按進行研發活動的機構所在地劃分的2021年工商機構的外判研發活動總開支

Table 1.15 Total expenditure on contracted-out R&D activities in the business sector in 2021 by location of party performing R&D activities

進行研發活動的機構所在地 Location of party performing R&D activities	外判研發活動總開支 Total expenditure on contracted-out R&D activities	
	百萬元 \$ million	
香港 Hong Kong	4,280.7	(63.6%)
中國內地及澳門 The mainland of China and Macao	1,800.2	(26.7%)
粵港澳大灣區 ⁽¹⁾ (香港除外) Guangdong-Hong Kong-Macao Greater Bay Area ⁽¹⁾ (other than Hong Kong)	1,628.4	(24.2%)
其他地區 Other regions	171.8	(2.6%)
香港、中國內地及澳門以外地方 Places outside Hong Kong, the mainland of China and Macao	652.4	(9.7%)
總計 Total	6,733.3	(100.0%)

註釋：(1) 粵港澳大灣區包括廣東省9個市，即廣州、深圳、珠海、佛山、惠州、東莞、中山、江門及肇慶，以及香港特別行政區和澳門特別行政區。

Notes: (1) The Guangdong-Hong Kong-Macao Greater Bay Area covers 9 cities in the Guangdong Province, namely Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing, as well as Hong Kong SAR and Macao SAR.

括號內數字為相應數值佔總計的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total.

表 1.16 按資金來源劃分的2021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 2021 by source of funds

資金來源 Source of funds	外判研發活動總開支 Total expenditure on contracted-out R&D activities	
自資 Self-financed	6,201.1	(92.1%)
政府（例如創新及科技基金） Government (e.g. Innovation and Technology Fund)	30.5	(0.5%)
高等教育機構 Higher education institution	***	
私募投資基金（例如創業基金等） Private investment fund (e.g. venture capital, etc.)	96.5	(1.4%)
機構單位所屬企業集團的分支機構或總公司 Affiliate or parent company of the enterprise group	403.7	(6.0%)
機構單位所屬企業集團以外的機構 Organisation not affiliated with the enterprise group	0.4	(\$)
其他 Others	***	
總計 Total	6,733.3	(100.0%)

註釋：括號內數字為相應數值佔總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total.

表 1.17 按有否就研發活動和其他機構訂立協作安排及協作機構的類別劃分的在2021年有進行研發活動的工商機構單位分布
Table 1.17 Distribution of business establishments having undertaken R&D activities in 2021 by whether having collaboration arrangements on R&D activities with other organisations and type of collaborated organisation

有否就研發活動和其他機構訂立協作安排及協作機構類別 ⁽¹⁾ Whether having collaboration arrangements on R&D activities with other organisations and type of collaborated organisation ⁽¹⁾	機構單位數目 ⁽²⁾ No. of establishments ⁽²⁾	
有就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	475	[12.0%]
政府 Government	7	(1.5%)
公共科技支援機構 ⁽³⁾ Public technology support organisation ⁽³⁾	83	(17.4%)
高等教育機構 Higher education institution	180	(37.9%)
機構單位所屬企業集團的分支機構或總公司 Affiliate or parent company of the enterprise group	184	(38.7%)
機構單位所屬企業集團以外的機構 Organisation not affiliated with the enterprise group	96	(20.3%)
沒有就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	3 497	[88.0%]
總計 Total	3 972	[100.0%]

註釋：(1) 或涉及多於一個協作機構類別。

(2) 數字包括有進行內部研發活動的機構單位及外判研發活動予其他機構的機構單位。

(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。

方括號內數字為相應數值佔有進行研發活動的機構單位數目總計的百分比。

圓括號內數字為相應數值佔有就研發活動和其他機構訂立協作安排的機構單位數目總計的百分比。

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

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

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

Figures in square brackets refer to percentages of corresponding values in respect of total no. of establishments having undertaken R&D activities.

Figures in round brackets refer to percentages of corresponding values in respect of total no. of establishments having collaboration arrangements on R&D activities with other organisations.

表 1.18 按有否就研發活動和其他機構訂立協作安排及協作機構的所在地劃分的在2021年有進行研發活動的工商機構單位分布
Table 1.18 Distribution of business establishments having undertaken R&D activities in 2021 by whether having collaboration arrangements on R&D activities with other organisations and location of collaborated organisation

有否就研發活動和其他機構訂立協作安排及協作機構所在地 ⁽¹⁾ Whether having collaboration arrangements on R&D activities with other organisations and location of collaborated organisation ⁽¹⁾	機構單位數目 ⁽²⁾ No. of establishments ⁽²⁾	
有就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	475	[12.0%]
香港 Hong Kong	291	(61.3%)
中國內地及澳門 The mainland of China and Macao		
粵港澳大灣區 ⁽³⁾ (香港除外) Guangdong-Hong Kong-Macao Greater Bay Area ⁽³⁾ (other than Hong Kong)	82	(17.3%)
其他地區 Other regions	30	(6.3%)
香港、中國內地及澳門以外地方 Places outside Hong Kong, the mainland of China and Macao	141	(29.7%)
沒有就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	3 497	[88.0%]
總計 Total	3 972	[100.0%]

註釋：(1) 或涉及多於一個地點。
 (2) 數字包括有進行內部研發活動的機構單位及外判研發活動予其他機構的機構單位。
 (3) 粵港澳大灣區包括廣東省9個市，即廣州、深圳、珠海、佛山、惠州、東莞、中山、江門及肇慶，以及香港特別行政區和澳門特別行政區。

Notes: (1) May involve more than one location.
 (2) Figures include establishments with in-house R&D activities and establishments with R&D activities contracted out to other parties.
 (3) The Guangdong-Hong Kong-Macao Greater Bay Area covers 9 cities in the Guangdong Province, namely Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing, as well as Hong Kong SAR and Macao SAR.

方括號內數字為相應數值佔有進行研發活動的機構單位數目總計的百分比。

Figures in square brackets refer to percentages of corresponding values in respect of total no. of establishments having undertaken R&D activities.

圓括號內數字為相應數值佔有就研發活動和其他機構訂立協作安排的機構單位數目總計的百分比。

Figures in round brackets refer to percentages of corresponding values 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／機構單位規模劃分的2021年工商機構的創新活動主要統計數字
Table 2.1 Key statistics on innovation activities in the business sector in 2021 by selected industry grouping/size of establishment

	機構單位 數目總計 Total no. of establish- ments	有進行創新 活動的機構 單位數目 ⁽¹⁾ No. of establishments having undertaken innovation activities ⁽¹⁾	有進行產品 創新的 機構單位數目 No. of establishments having undertaken product innovation	有進行業務 程序創新的 機構單位數目 No. of establishments having undertaken business process innovation	有進行中的 創新活動的 機構單位數目 No. of establishments having undertaken ongoing innovation activities	有已終止的 創新活動的 機構單位數目 No. of establishments having abandoned innovation activities	創新活動開支 (百萬元) Expenditure on innovation activities (\$ million)
按行業組別劃分 By industry grouping							
製造 Manufacturing	7 950	273 (3.4%)	69 (0.9%)	53 (0.7%)	179 (2.2%)	37 (0.5%)	806.3 [2.8%]
進出口貿易、批發及零售以及 住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	146 778	2 707 (1.8%)	533 (0.4%)	380 (0.3%)	1 885 (1.3%)	521 (0.4%)	6,323.0 [22.0%]
資訊及通訊 Information and communications	14 599	2 374 (16.3%)	1 031 (7.1%)	138 (0.9%)	1 590 (10.9%)	256 (1.8%)	13,765.1 [48.0%]
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	84 125	1 241 (1.5%)	287 (0.3%)	281 (0.3%)	848 (1.0%)	107 (0.1%)	6,302.7 [22.0%]
其他 Others	45 646	457 (1.0%)	152 (0.3%)	119 (0.3%)	220 (0.5%)	42 (0.1%)	1,486.4 [5.2%]
總計 Total	299 098	7 053 (2.4%)	2 072 (0.7%)	970 (0.3%)	4 721 (1.6%)	963 (0.3%)	28,683.6 [100.0%]
按機構單位規模劃分 By size of establishment							
大型 Large	5 290	584 (11.0%)	190 (3.6%)	220 (4.2%)	315 (5.9%)	67 (1.3%)	17,753.0 [61.9%]
中型 Medium	30 532	1 853 (6.1%)	561 (1.8%)	297 (1.0%)	1 281 (4.2%)	270 (0.9%)	6,905.3 [24.1%]
小型 Small	263 275	4 616 (1.8%)	1 322 (0.5%)	453 (0.2%)	3 126 (1.2%)	626 (0.2%)	4,025.3 [14.0%]
總計 Total	299 098	7 053 (2.4%)	2 072 (0.7%)	970 (0.3%)	4 721 (1.6%)	963 (0.3%)	28,683.6 [100.0%]

註釋：(1) 數字包括有進行產品創新、業務程序創新、進行中及已終止的創新活動的機構單位。

Notes: (1) Figures include establishments that had undertaken product innovation, business process innovation, ongoing and abandoned innovation activities.

圓括號內數字為相應數值佔該列機構單位數目總計的百分比。

Figures in round brackets refer to percentages of corresponding values in respect of total no. of establishments in each row.

方括號內數字為相應數值佔創新活動總開支的百分比。

Figures in square brackets refer to percentages of corresponding values in respect of total expenditure on innovation activities.

表 2.2 按選定行業組別／機構單位規模劃分的在2021年有進行產品創新／有在市場推出嶄新或經顯著改良的產品的工商機構單位分布
Table 2.2 Distribution of business establishments having undertaken product innovation/introduced new or significantly improved products to the market in 2021 by selected industry grouping/size of establishment

	機構單位數目 總計 Total no. of establishments	有進行產品創新 的機構單位數目 No. of establishments having undertaken product innovation	有在市場推出嶄新或經顯著改良 的產品的機構單位數目 No. of establishments having introduced new or significantly improved products to the market
按行業組別劃分			
By industry grouping			
製造 Manufacturing	7 950	69 (0.9%)	40 (0.5%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	146 778	533 (0.4%)	224 (0.2%)
資訊及通訊 Information and communications	14 599	1 031 (7.1%)	363 (2.5%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	84 125	287 (0.3%)	118 (0.1%)
其他 Others	45 646	152 (0.3%)	13 (\$)
總計 Total	299 098	2 072 (0.7%)	757 (0.3%)
按機構單位規模劃分			
By size of establishment			
大型 Large	5 290	190 (3.6%)	61 (1.1%)
中型 Medium	30 532	561 (1.8%)	158 (0.5%)
小型 Small	263 275	1 322 (0.5%)	539 (0.2%)
總計 Total	299 098	2 072 (0.7%)	757 (0.3%)

註釋：括號內數字為相應數值佔該列機構單位數目總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total no. of establishments in each row.

表 2.3 按選定行業組別／機構單位規模劃分的在2021年有進行產品創新的工商機構單位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益百分比方面的概況

Table 2.3 Profile of business establishments having undertaken product innovation in 2021 in terms of type of party developing product innovation, number of product innovation and percentage contribution of product innovation to business receipts by selected industry grouping/size of establishment

	發展產品創新的機構類別 ⁽¹⁾								
	Type of party developing product innovation ⁽¹⁾								
	機構單位本身 The establishment itself			機構單位與其他機構合作 Establishment in cooperation with other parties			其他機構 Other parties		
有進行產品 創新的 機構單位數目 No. of establishments having undertaken product innovation	機構單位 數目 No. of establishments	產品 創新數目 No. of product innovation	機構單位 數目 No. of establishments	產品 創新數目 No. of product innovation	機構單位 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	產品 創新 總數	產品創新的 收入佔業務 收益 ⁽²⁾ 百分比 % contribution of product innovation to business receipts ⁽²⁾
按行業組別劃分									
By industry grouping									
製造 Manufacturing	69	54 (79.3%)	170	5 (7.6%)	5	14 (20.4%)	18	193	2.5%
進出口貿易、批發及零售以及住宿及 膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	533	334 (62.7%)	488	192 (36.0%)	292	38 (7.2%)	63	842	9.8%
資訊及通訊 Information and communications	1 031	694 (67.3%)	765	202 (19.6%)	278	142 (13.8%)	143	1 186	29.8%
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	287	221 (77.1%)	326	64 (22.1%)	102	15 (5.3%)	26	454	9.3%
其他 Others	152	84 (55.1%)	104	37 (24.4%)	41	35 (23.1%)	40	185	2.7%
總計 Total	2 072	1 388 (67.0%)	1 852	499 (24.1%)	718	245 (11.8%)	290	2 860	9.3%

(待續)
(to be cont'd)

表 2.3 (續) 按選定行業組別／機構單位規模劃分的在2021年有進行產品創新的工商機構單位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益百分比方面的概況

Table 2.3 (cont'd) Profile of business establishments having undertaken product innovation in 2021 in terms of type of party developing product innovation, number of product innovation and percentage contribution of product innovation to business receipts by selected industry grouping/size of establishment

	發展產品創新的機構類別 ⁽¹⁾								
	Type of party developing product innovation ⁽¹⁾								
	機構單位本身 The establishment itself			機構單位與其他機構合作 Establishment in cooperation with other parties			其他機構 Other parties		
有進行產品 創新的 機構單位數目 No. of establishments having undertaken product innovation	機構單位 數目 No. of establishments	產品 創新數目 No. of product innovation	機構單位 數目 No. of establishments	產品 創新數目 No. of product innovation	機構單位 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	產品 創新總數 Total no. of product innovation	產品創新的 收入佔業務 收益 ⁽²⁾ 百分比 % contribution of product innovation to business receipts ⁽²⁾
按機構單位規模劃分									
By size of establishment									
大型 Large	190	121 (63.9%)	249	63 (33.1%)	160	25 (13.0%)	38	447	9.0%
中型 Medium	561	370 (65.9%)	528	152 (27.1%)	194	46 (8.2%)	62	784	12.3%
小型 Small	1 322	897 (67.8%)	1 075	285 (21.5%)	364	174 (13.2%)	191	1 630	15.2%
總計 Total	2 072	1 388 (67.0%)	1 852	499 (24.1%)	718	245 (11.8%)	290	2 860	9.3%

註釋：(1) 或涉及多於一個類別。

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

(2) 業務收益是指有進行產品創新的機構單位的銷貨價值及服務收益。

(2) Business receipts refer to value of sales of goods and receipts from services rendered for establishments having undertaken product innovation.

括號內數字為相應數值佔該列有進行產品創新的機構單位總數的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total no. of establishments having undertaken product innovation in each row.

表 2.4 按選定行業組別／機構單位規模劃分的在2021年有進行業務程序創新的工商機構單位在發展業務程序創新的機構類別和業務程序創新數目方面的概況
Table 2.4 Profile of business establishments having undertaken business process innovation in 2021 in terms of type of party developing business process innovation and number of business process innovation by selected industry grouping/size of establishment

有進行業務程序創新的機構單位數目 No. of establishments having undertaken business process innovation	發展業務程序創新的機構類別 ⁽¹⁾ Type of party developing business process innovation ⁽¹⁾							業務程序 創新總數 Total no. of business process innovation
	機構單位本身 The establishment itself		機構單位與其他機構合作 Establishment in cooperation with other parties		其他機構 Other parties			
	機構單位 數目 No. of establishments	業務程序 創新數目 No. of business process innovation	機構單位 數目 No. of establishments	業務程序 創新數目 No. of business process innovation	機構單位 數目 No. of establishments	業務程序 創新數目 No. of business process innovation		
按行業組別劃分 By industry grouping								
製造 Manufacturing	53	17 (32.6%)	26	***	***	***	***	71
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	380	138 (36.3%)	145	10 (2.6%)	15	249 (65.6%)	290	450
資訊及通訊 Information and communications	138	71 (51.4%)	95	***	***	***	***	167
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	281	123 (43.9%)	143	21 (7.5%)	40	144 (51.1%)	228	410
其他 Others	119	21 (17.4%)	41	8 (6.7%)	16	98 (82.6%)	181	238
總計 Total	970	370 (38.1%)	450	51 (5.2%)	89	585 (60.3%)	798	1 336
按機構單位規模劃分 By size of establishment								
大型 Large	220	61 (27.8%)	104	32 (14.6%)	65	143 (64.9%)	242	411
中型 Medium	297	117 (39.5%)	133	9 (2.9%)	9	173 (58.3%)	191	333
小型 Small	453	191 (42.3%)	212	10 (2.2%)	15	269 (59.3%)	365	592
總計 Total	970	370 (38.1%)	450	51 (5.2%)	89	585 (60.3%)	798	1 336

註釋：(1) 或涉及多於一個類別。

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

括號內數字為相應數值佔該列有進行業務程序創新的機構單位總數的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total no. of establishments having undertaken business process innovation in each row.

表 2.5 按全面推行業務程序創新後所節省的成本開支百分比及選定行業組別／機構單位規模劃分的在2021年有進行業務程序創新的工商機構單位分布

Table 2.5 Distribution of business establishments having undertaken business process innovation in 2021 by percentage of cost saving after full implementation of business process innovation by selected industry grouping/size of establishment

	節省的成本開支（以佔每件產出或每項服務的平均成本的百分比計算）				與節省成本 開支無關 Not related to cost saving
	有進行業務程序 創新的機構單位數目 No. of establishments having undertaken business process innovation	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 Manufacturing	53	27 (50.4%)	13 (23.8%)	7 (13.3%)	7 (12.4%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	380	140 (36.8%)	83 (21.8%)	44 (11.7%)	113 (29.7%)
資訊及通訊 Information and communications	138	22 (15.7%)	14 (10.0%)	32 (23.5%)	70 (50.8%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	281	148 (52.7%)	65 (23.2%)	9 (3.3%)	58 (20.8%)
其他 Others	119	38 (31.5%)	19 (16.2%)	10 (8.0%)	53 (44.3%)
總計 Total	970	374 (38.5%)	194 (20.0%)	102 (10.6%)	300 (31.0%)
按機構單位規模劃分					
By size of establishment					
大型 Large	220	93 (42.2%)	54 (24.5%)	9 (3.9%)	65 (29.5%)
中型 Medium	297	94 (31.5%)	62 (20.9%)	36 (12.0%)	106 (35.6%)
小型 Small	453	187 (41.4%)	78 (17.2%)	58 (12.9%)	129 (28.6%)
總計 Total	970	374 (38.5%)	194 (20.0%)	102 (10.6%)	300 (31.0%)

註釋：括號內數字為相應數值佔該列有進行業務程序創新的機構單位總數的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total no. of establishments having undertaken business process innovation in each row.

表 2.6 按創新活動類別及選定行業組別／機構單位規模劃分的2021年工商機構的創新活動總開支
Table 2.6 Total expenditure on innovation activities in the business sector in 2021 by type of innovation activity by selected industry grouping/size of establishment

百萬元
\$ million

	創新活動類別								
	Type of innovation activity								
	為機構單位 本身進行的 內部研發活動 In-house R&D activities conducted for own establishment	外判予其他 機構進行的 研發活動 R&D activities contracted out to other parties	營銷和品牌 資產活動 Marketing and brand equity activities	與購置或租賃 固定資產 有關的活動 Activities related to the acquisition or lease of fixed assets	工程、設計 和其他創作 活動 Engineering, design and other creative work activities	軟件開發 和數據庫 活動 Software development and database activities	與知識產權 有關的活動 Intellectual property-related activities	員工培訓 活動 Employee training activities	創新活動 開支總額 Total expenditure on innovation activities
按行業組別劃分									
By industry grouping									
製造	387.6	10.9	14.2	92.0	183.1	67.9	50.0	0.6	806.3
Manufacturing	(48.1%)	(1.3%)	(1.8%)	(11.4%)	(22.7%)	(8.4%)	(6.2%)	(0.1%)	(100.0%)
進出口貿易、批發及零售以及住宿及膳食服務	2,572.6	1,237.3	267.4	80.9	1,527.7	556.5	77.0	3.5	6,323.0
Import/export, wholesale and retail trades, and accommodation and food services	(40.7%)	(19.6%)	(4.2%)	(1.3%)	(24.2%)	(8.8%)	(1.2%)	(0.1%)	(100.0%)
資訊及通訊	2,652.5	4,649.0	268.4	1,419.3	2,253.1	2,419.8	5.9	97.1	13,765.1
Information and communications	(19.3%)	(33.8%)	(1.9%)	(10.3%)	(16.4%)	(17.6%)	(\$)	(0.7%)	(100.0%)
金融及保險、地產、專業及商用服務	2,292.8	782.7	351.5	438.8	640.6	1,436.1	187.3	173.1	6,302.7
Financing and insurance, real estate, professional and business services	(36.4%)	(12.4%)	(5.6%)	(7.0%)	(10.2%)	(22.8%)	(3.0%)	(2.7%)	(100.0%)
其他	555.1	53.4	36.3	226.1	329.0	248.9	10.1	27.5	1,486.4
Others	(37.3%)	(3.6%)	(2.4%)	(15.2%)	(22.1%)	(16.7%)	(0.7%)	(1.8%)	(100.0%)
總計	8,460.6	6,733.3	937.7	2,257.2	4,933.5	4,729.1	330.4	301.8	28,683.6
Total	(29.5%)	(23.5%)	(3.3%)	(7.9%)	(17.2%)	(16.5%)	(1.2%)	(1.1%)	(100.0%)
按機構單位規模劃分									
By size of establishment									
大型	3,329.9	5,343.2	422.8	2,035.3	3,133.4	3,164.6	91.4	232.3	17,753.0
Large	(18.8%)	(30.1%)	(2.4%)	(11.5%)	(17.7%)	(17.8%)	(0.5%)	(1.3%)	(100.0%)
中型	3,584.6	436.0	275.4	139.8	1,231.5	992.2	209.8	36.0	6,905.3
Medium	(51.9%)	(6.3%)	(4.0%)	(2.0%)	(17.8%)	(14.4%)	(3.0%)	(0.5%)	(100.0%)
小型	1,546.0	954.1	239.5	82.1	568.6	572.3	29.2	33.5	4,025.3
Small	(38.4%)	(23.7%)	(6.0%)	(2.0%)	(14.1%)	(14.2%)	(0.7%)	(0.8%)	(100.0%)
總計	8,460.6	6,733.3	937.7	2,257.2	4,933.5	4,729.1	330.4	301.8	28,683.6
Total	(29.5%)	(23.5%)	(3.3%)	(7.9%)	(17.2%)	(16.5%)	(1.2%)	(1.1%)	(100.0%)

註釋：括號內數字為相應數值佔該列總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 2.7 按資金來源劃分的2021年工商機構的創新活動總開支
Table 2.7 Total expenditure on innovation activities in the business sector in 2021 by source of funds

資金來源 Source of funds	百萬元 \$ million	
	創新活動總開支 Total expenditure on innovation activities	
自資 Self-financed	21,417.3	(74.7%)
政府（例如創新及科技基金） Government (e.g. Innovation and Technology Fund)	1,654.0	(5.8%)
高等教育機構 Higher education institution	***	
私募投資基金（例如創業基金等） Private investment fund (e.g. venture capital, etc.)	393.8	(1.4%)
機構單位所屬企業集團的分支機構或總公司 Affiliate or parent company of the enterprise group	4,812.5	(16.8%)
機構單位所屬企業集團以外的機構 Organisation not affiliated with the enterprise group	392.0	(1.4%)
其他 Others	***	
總計 Total	28,683.6	(100.0%)

註釋：括號內數字為相應數值佔總計的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total.

表 2.8 按有否就創新活動（不包括研發活動）和其他機構訂立協作安排及協作機構的類別劃分的在2021年有進行創新活動（不包括研發活動）的工商機構單位分布

Table 2.8 Distribution of business establishments having undertaken innovation activities (excluding R&D activities) in 2021 by whether having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations and type of collaborated organisation

有否就創新活動（不包括研發活動）和其他機構訂立協作安排及協作機構類別 ⁽¹⁾ Whether having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations and type of collaborated organisation ⁽¹⁾	機構單位數目 ⁽²⁾ No. of establishments ⁽²⁾	
有和其他機構訂立協作安排 Having collaboration arrangements with other organisations	389	[5.5%]
政府 Government	7	(1.7%)
公共科技支援機構 ⁽³⁾ Public technology support organisation ⁽³⁾	16	(4.1%)
高等教育機構 Higher education institution	83	(21.2%)
機構單位所屬企業集團的分支機構或總公司 Affiliate or parent company of the enterprise group	169	(43.4%)
機構單位所屬企業集團以外的機構 Organisation not affiliated with the enterprise group	145	(37.3%)
沒有和其他機構訂立協作安排 Not having collaboration arrangements with other organisations	6 664	[94.5%]
總計 Total	7 053	[100.0%]

註釋：(1) 或涉及多於一個協作機構類別。
 (2) 數字包括有進行創新活動（不包括研發活動）的機構單位及外判創新活動（不包括研發活動）予其他機構的機構單位。
 (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。
 方括號內數字為相應數值佔有進行創新活動（不包括研發活動）的機構單位數目總計的百分比。
 圓括號內數字為相應數值佔有就創新活動（不包括研發活動）和其他機構訂立協作安排的機構單位數目總計的百分比。

Notes: (1) May involve more than one type of collaborated organisation.
 (2) Figures include establishments with innovation activities (excluding R&D activities) and establishments with innovation activities (excluding R&D activities) contracted out to other parties.
 (3) Examples include Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited and Government-funded R&D Centres.
 Figures in square brackets refer to percentages of corresponding values in respect of total no. of establishments having undertaken innovation activities (excluding R&D activities).
 Figures in round brackets refer to percentages of corresponding values in respect of total no. of establishments having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations.

表 2.9 按有否就創新活動（不包括研發活動）和其他機構訂立協作安排及協作機構的所在地劃分的在2021年有進行創新活動（不包括研發活動）的工商機構單位分布

Table 2.9 Distribution of business establishments having undertaken innovation activities (excluding R&D activities) in 2021 by whether having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations and location of collaborated organisation

有否就創新活動（不包括研發活動）和其他機構訂立協作安排及協作機構所在地 ⁽¹⁾	機構單位數目 ⁽²⁾	
Whether having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations and location of collaborated organisation ⁽¹⁾	No. of establishments ⁽²⁾	
有和其他機構訂立協作安排	389	[5.5%]
Having collaboration arrangements with other organisations		
香港	225	(57.8%)
Hong Kong		
中國內地及澳門		
The mainland of China and Macao		
粵港澳大灣區 ⁽³⁾ （香港除外）	64	(16.3%)
Guangdong-Hong Kong-Macao Greater Bay Area ⁽³⁾ (other than Hong Kong)		
其他地區	8	(2.1%)
Other regions		
香港、中國內地及澳門以外地方	137	(35.1%)
Places outside Hong Kong, the mainland of China and Macao		
沒有和其他機構訂立協作安排	6 664	[94.5%]
Not having collaboration arrangements with other organisations		
總計	7 053	[100.0%]
Total		

註釋：(1) 或涉及多於一個地點。
 (2) 數字包括有進行創新活動（不包括研發活動）的機構單位及外判創新活動（不包括研發活動）予其他機構的機構單位。
 (3) 粵港澳大灣區包括廣東省9個市，即廣州、深圳、珠海、佛山、惠州、東莞、中山、江門及肇慶，以及香港特別行政區和澳門特別行政區。

方括號內數字為相應數值佔有進行創新活動（不包括研發活動）的機構單位數目總計的百分比。

圓括號內數字為相應數值佔有就創新活動（不包括研發活動）和其他機構訂立協作安排的機構單位數目總計的百分比。

Notes: (1) May involve more than one location.
 (2) Figures include establishments with innovation activities (excluding R&D activities) and establishments with innovation activities (excluding R&D activities) contracted out to other parties.
 (3) The Guangdong-Hong Kong-Macao Greater Bay Area covers 9 cities in the Guangdong Province, namely Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing, as well as Hong Kong SAR and Macao SAR.

Figures in square brackets refer to percentages of corresponding values in respect of total no. of establishments having undertaken innovation activities (excluding R&D activities).

Figures in round brackets refer to percentages of corresponding values in respect of total no. of establishments having collaboration arrangements on innovation activities (excluding R&D activities) with other organisations.

表 2.10 按在2021年有進行創新活動的目的及其重要程度劃分的工商機構單位分布

Table 2.10 Distribution of business establishments by objective of having undertaken innovation activities in 2021 and its degree of importance

有進行創新活動的目的 Objective of having undertaken innovation activities	重要程度 Degree of importance				總計 Total
	高 High	中 Medium	低 Low	不適用 Not applicable	
提升貨品或服務的質素 To enhance the quality of goods or services	4 126 (58.5%)	1 487 (21.1%)	311 (4.4%)	1 130 (16.0%)	7 053 (100.0%)
增加或維持市場佔有率 To increase or maintain market share	3 436 (48.7%)	1 747 (24.8%)	348 (4.9%)	1 521 (21.6%)	7 053 (100.0%)
增加貨品的種類或擴大服務的範圍 To increase the variety of goods or expand the range of services	3 418 (48.5%)	1 961 (27.8%)	295 (4.2%)	1 378 (19.5%)	7 053 (100.0%)
開拓貨品或服務的新客源 To introduce goods or services to new customer groups	3 086 (43.8%)	1 829 (25.9%)	582 (8.2%)	1 556 (22.1%)	7 053 (100.0%)
開拓貨品或服務的新地區市場 To introduce goods or services to new geographic markets	2 212 (31.4%)	1 729 (24.5%)	1 062 (15.1%)	2 050 (29.1%)	7 053 (100.0%)

註釋：括號內數字為相應數值佔該列總數的百分比。

Note: Figures in brackets refer to percentages of corresponding values in respect of total in each row.

表 2.11 按在2021年沒有進行創新活動的原因及選定行業組別／機構單位規模劃分的工商機構單位分布
Table 2.11 Distribution of business establishments by reason for not having undertaken innovation activities in 2021 by selected industry grouping/size of establishment

	沒有進行 創新活動的 機構單位數目 No. of establishments not having undertaken innovation activities	沒有進行創新活動的原因 ⁽¹⁾ Reason ⁽¹⁾ for not having undertaken innovation activities			
		以往已進行 創新活動 Innovation activities had been conducted	由於市場或 行業情況， 因此暫無需要 No need due to market or business conditions	創新活動由所屬 企業集團的分支機構 或總公司所進行 Innovation activities were performed by affiliates or parent company of the enterprise group	有阻礙創新 活動的因素 Existence of barriers to innovation activities
按行業組別劃分 By industry grouping					
製造 Manufacturing	7 676	165 (2.1%)	7 299 (95.1%)	200 (2.6%)	309 (4.0%)
進出口貿易、批發及零售以及住宿及膳食服務 Import/export, wholesale and retail trades, and accommodation and food services	144 071	6 306 (4.4%)	130 318 (90.5%)	7 691 (5.3%)	16 134 (11.2%)
資訊及通訊 Information and communications	12 225	2 013 (16.5%)	8 866 (72.5%)	969 (7.9%)	2 352 (19.2%)
金融及保險、地產、專業及商用服務 Financing and insurance, real estate, professional and business services	82 884	1 252 (1.5%)	76 363 (92.1%)	3 884 (4.7%)	9 912 (12.0%)
其他 Others	45 189	614 (1.4%)	40 521 (89.7%)	1 693 (3.7%)	7 226 (16.0%)
總計 Total	292 045	10 349 (3.5%)	263 368 (90.2%)	14 437 (4.9%)	35 933 (12.3%)
按機構單位規模劃分 By size of establishment					
大型 Large	4 707	283 (6.0%)	3 753 (79.7%)	748 (15.9%)	312 (6.6%)
中型 Medium	28 679	2 754 (9.6%)	24 623 (85.9%)	2 401 (8.4%)	2 677 (9.3%)
小型 Small	258 659	7 313 (2.8%)	234 992 (90.8%)	11 289 (4.4%)	32 944 (12.7%)
總計 Total	292 045	10 349 (3.5%)	263 368 (90.2%)	14 437 (4.9%)	35 933 (12.3%)

註釋：(1) 或涉及多於一個原因。

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

括號內數字為相應數值佔該列沒有進行創新活動的機構單位總數的百分比。

Figures in brackets refer to percentages of corresponding values in respect of total no. of establishments not having undertaken innovation activities in each row.

表 2.12 按阻礙創新活動的因素及其影響程度劃分的在2021年有進行創新活動的工商機構單位分布

Table 2.12 Distribution of business establishments having undertaken innovation activities in 2021 by factor hampering innovation activities and its degree of impact

阻礙創新活動的因素 Factor hampering innovation 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	2 600 (36.9%)	1 746 (24.8%)	794 (11.3%)	1 912 (27.1%)	7 053 (100.0%)
創新成本太高 Too high innovation costs	3 152 (44.7%)	1 456 (20.7%)	605 (8.6%)	1 839 (26.1%)	7 053 (100.0%)
缺乏機構單位或所屬企業集團內部資金 Lack of internal funds within the establishment or enterprise group	2 298 (32.6%)	1 408 (20.0%)	835 (11.8%)	2 512 (35.6%)	7 053 (100.0%)
缺乏機構單位或所屬企業集團以外的資金 Lack of external funds from sources outside the establishment or enterprise group	2 000 (28.4%)	1 328 (18.8%)	881 (12.5%)	2 844 (40.3%)	7 053 (100.0%)
機構內部因素 Internal factors					
員工抗拒變革 Reluctance of staff towards change	250 (3.5%)	878 (12.4%)	1 414 (20.1%)	4 511 (64.0%)	7 053 (100.0%)
組織架構未能配合變動 Inadaptability of organisational structure to change	271 (3.8%)	906 (12.8%)	1 327 (18.8%)	4 550 (64.5%)	7 053 (100.0%)
市場因素 Market factors					
市場對創新貨品或服務的需求不明確 Uncertain market demand for innovative goods or services	1 044 (14.8%)	1 783 (25.3%)	1 355 (19.2%)	2 871 (40.7%)	7 053 (100.0%)
被行內一間或數間機構單位佔據市場支配優勢 ⁽¹⁾ Market dominance ⁽¹⁾ by one or a few establishments in the industry	641 (9.1%)	1 568 (22.2%)	1 415 (20.1%)	3 429 (48.6%)	7 053 (100.0%)

(待續)
(to be cont'd)

表 2.12 (續) 按阻礙創新活動的因素及其影響程度劃分的在2021年有進行創新活動的工商機構單位分布
Table 2.12 (cont'd) Distribution of business establishments having undertaken innovation activities in 2021 by factor hampering innovation activities and its degree of impact

阻礙創新活動的因素 Factor hampering innovation 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	950 (13.5%)	1 599 (22.7%)	1 446 (20.5%)	3 058 (43.4%)	7 053 (100.0%)
缺乏合資格科技人員 Lack of qualified science and technology personnel	1 612 (22.9%)	1 495 (21.2%)	1 255 (17.8%)	2 692 (38.2%)	7 053 (100.0%)
缺乏所需技術資訊 Lack of information on required technology	899 (12.7%)	1 559 (22.1%)	1 524 (21.6%)	3 071 (43.5%)	7 053 (100.0%)
缺乏市場資訊 Lack of information on markets	769 (10.9%)	1 725 (24.5%)	1 405 (19.9%)	3 153 (44.7%)	7 053 (100.0%)
難以尋找創新活動的協作夥伴 Difficulty in finding collaboration partners on innovation activities	941 (13.3%)	1 724 (24.4%)	1 294 (18.4%)	3 094 (43.9%)	7 053 (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	464 (6.6%)	1 063 (15.1%)	1 514 (21.5%)	4 012 (56.9%)	7 053 (100.0%)
政府規定的法規或標準的靈活性不足 Lack of flexibility in the regulations or standards set out by the Government	770 (10.9%)	1 098 (15.6%)	1 260 (17.9%)	3 925 (55.6%)	7 053 (100.0%)

註釋：(1) 市場支配優勢是指超過一半的市場總銷售額由一間或數間領先機構所佔有的情況。

括號內數字為相應數值佔有進行創新活動的工商機構單位總數的百分比。

Notes: (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 establishments.

Figures in brackets refer to percentages of corresponding values in respect of total no. of business establishments having undertaken innovation activities.

附錄甲：用語及定義

Appendix A : Terms and Definitions

先進材料科技 涵蓋創造新物料的科技，以及為配合特定用途調校物料的性質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原始研究，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 是指應用科技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，以開發知識、服務及貨品，並可大致分類如下（僅供說明，但不代表全部）：

- 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；基因表達圖譜及反義技術的應用。
- 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；及細胞受體的識別。
- 細胞及組織的培養與工程：細胞／組織培養；組織工程（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；及胚胎操作技術。
- 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；及病毒載體。
- 生物信息學：建立基因組和蛋白質序列資料庫；及建立複雜生物程序模型，包括系統生物學。
- 納米生物科技：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 the techniques to create new materials and processes to control the composition or structure of materials with a view to tailoring their properties to a specific application.

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

Basic research is the 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, and can be largely categorised as follows (indicative but 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; signalling; and 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; and embryo manipulation.
- process biotechnologies techniques: fermentation using bioreactors; bioprocessing; bioleaching; biopulping; biobleaching; biodesulphurisation; bioremediation; and biofiltration.
- gene and RNA vectors: gene therapy; and viral vectors.
- bioinformatics: construction of database on genomes and protein sequences; and modelling of complex biological processes, including systems biology.
- nanobiotechnology: use of the nano/microfabrication tools and processes to build devices for studying biosystems and applications in drug delivery, diagnostics, etc.

工商機構單位 包括：

- 其主要活動為生產貨品或提供服務（高等教育除外），並以相當價錢售予公眾的機構單位及團體；以及
- 主要服務上述機構的私人非牟利機構，例如商會或行業組織等。

業務程序創新 是指機構單位推行 **嶄新或經改良** 的業務程序，包括生產程序、分銷方法、市場推廣方式、行政管理模式，以及支援貨品或服務的工序，並與該機構單位過往所推行的 **顯著不同**。業務程序創新須於該機構單位全新實施，但並不一定是業界內首先採用的嶄新業務程序。業務程序創新的開發可由該機構單位或其他機構進行。

例子：

- 嶄新或經改良的製造科技（例如用作調節工序的自動設備或實時傳感器）；
- 3D 打印程序；
- 與網站有關的服務和電子商貿；
- 電腦輔助設計；
- 自助結帳系統；
- 無線射頻辨識系統；
- 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；
- 互動語音應答系統；
- 雲端運算服務；
- 物聯網系統和設備；
- 嶄新或顯著改良的電腦網絡；
- 組織架構上的改革（例如重組架構、知識管理、分銷安排）；以及
- 顯著改變產品包裝、推廣或訂價。

不包括：

- 市場推廣方式的季節性、定期及其他常規轉變；
- 純粹合併或收購；以及
- 生產、業務、物流或控制程序的輕微或常規轉變。

Business establishments include:

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

Business process innovation is the implementation of a **new or improved business process**, including production process, distribution method, marketing approach, administration and management practice, and supporting activity for goods or services, which **differs significantly** from those implemented by the establishment previously. Business process innovations must be new to the establishment, but not necessarily new to the industry. Business process innovations could have been originally developed by the establishment or other parties.

Examples:

- new or improved manufacturing technology (e.g. automation equipment or real-time sensor for adjusting process);
- 3D printing process ;
- web-related services and e-commerce;
- computer aided design;
- self checkout system ;
- radio frequency identification system;
- optical processing of data;
- enterprise resources planning system;
- customer relationship management system;
- smart card system;
- global positioning tracking system for transport equipment;
- interactive voice-response system;
- cloud computing services;
- Internet of things system and device;
- new or significantly improved computer network;
- organisational reformations (e.g. restructuring of organisation, knowledge management, sub-contracting); and
- significant changes in product packaging, promotion or pricing.

Excludes:

- seasonal, regular and other routine changes in marketing methods;
- pure mergers or acquisitions; and
- minor or routine changes to production, business, logistics or control processes.

業務收益 是指銷貨價值及服務收益。

Business receipts refer to value of sales of goods and receipts from services rendered.

資本開支 包括：

Capital expenditure includes:

- 購買土地及樓宇的支出 包括：
 - 用於購買土地（例如為興建實驗場地、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。
- 購置機器及設備的支出 包括：
 - 用於購買主要儀器和設備；以及使用一年以上的電腦軟件的實際開支。
- 其他資本開支 包括：
 - 用於購買傢俬及裝置、運輸工具等支出。

- Expenses on acquisition of land and buildings *include:*
 - actual expenditure on land acquired (e.g. for constructing testing grounds, sites for laboratories and pilot plants) and buildings purchased or constructed, including major improvements, modifications, and repair made to land and buildings.
- Expenses on acquisition of machinery and equipment *include:*
 - actual expenditure on major instrument and equipment acquired; and computer software used for more than one year.
- Other capital expenditure *includes:*
 - expenses on acquisition of furniture and fixtures, transport equipment, etc.

但固定資產的折舊 *不包括* 在內。

However, depreciation of fixed assets should be *excluded*.

研發活動的協作安排 涉及與其他機構皆 **積極合作參與的研發活動**，但當中未必為任何一方帶來商業利益。積極參與包括撥款、貢獻知識和技術專門技能，以及為相關活動訂立目標和方向。因此 *不包括* 沒有牽涉積極協作的純外判工作。

Collaboration arrangement on R&D activities involves the *active and joint participation* with other organisation(s) on conducting **R&D activities** which do not necessarily bring along commercial benefit to any party. Active participation *includes* the contribution of funding, knowledge and technology know-how plus activity goals and direction setting. Pure contracting-out of work with no active collaboration is thus *excluded*.

創新活動的協作安排 涉及與其他機構皆 **積極合作參與的產品創新或業務程序創新活動**，但當中未必為任何一方帶來商業利益。積極參與包括撥款、貢獻知識和技術專門技能，以及為相關活動訂立目標和方向。因此 *不包括* 沒有牽涉積極協作的純外判工作。

Collaboration arrangement on innovation activities involves the *active and joint participation* with other organisation(s) on conducting **product innovations or business process innovations** which do not necessarily bring along commercial benefit to any party. Active participation *includes* the contribution of funding, knowledge and technology know-how plus activity goals and direction setting. Pure contracting-out of work with no active collaboration is thus *excluded*.

通訊科技 涵蓋天線技術；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；以及其他相關領域如電腦通訊網絡、寬頻網絡技術、解調器技術及衛星通訊。

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

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

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

外判研發活動 是指在一間機構單位以外由其他機構或個人進行的研發活動，該等活動可能根據合約安排下進行或不收取費用。

經常開支 包括：

- 僱員薪酬〔包括直屬僱員的工資及薪金；直屬僱員的實質利益費用（例如提供住所）和僱主為直屬僱員提供社會保障的費用；以及向直屬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的相關支出）〕；
- 購買物料及所需用品的費用；
- 維修保養開支（不包括大修及大規模翻新工程的費用）；以及
- 其他經常開支〔包括非資本成本（例如水、電和燃料費用；書籍、期刊、參考資料及小型樣板的成本）；行政及其他雜項開支（例如租金、差餉及電訊費用）；使用一年或以下的電腦軟件成本；外來研發人員的服務費用；以及間接服務方面的開支，不論有關服務由有關機構單位內部提供或自外界供應商租用或購買（例如保安、貯物、樓宇和設備的使用、電腦服務以及印刷報告）〕。

但固定資產的折舊不包括在內。

電機及電子工程科技 涵蓋一般電機工程及電子工程。電機工程是一門有關各種形式的電力（包括電子）的實際應用的工程。電子工程則是一門有關電磁譜的運用以及如集成電路、晶體管及真空管等電子器件的應用。

直接參與研發活動的僱員 是指在統計期內受僱於一間機構單位，並在正常工作時間內進行研發活動或為研發活動提供直接輔助服務的僱員。

不包括：

- 為研發活動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、清潔及維修人員。

Contracted-out R&D activities refer to those performed by other organisations or individuals outside an establishment, either under a contractual arrangement or free of charge.

Current expenditure includes:

- compensation of employees [including wages and salaries of direct employees; payments in kind (e.g. provision of accommodation) and employer's social security expenditure of direct employees; and share-based payments granted to direct employees (refer to those equity-settled and cash-settled)];
- acquisition of materials and supplies cost;
- repair and maintenance costs (excluding those on capital repairs and major renovations); and
- other current expenditure [including non-capital cost (e.g. water, electricity and fuel charges; costs of books, journals, reference materials and small prototypes); administrative and other overhead expenses (e.g. rent, rates, telecommunications charges); costs of computer software used for one year or less; service fees to external R&D personnel; and expenditure on indirect services, whether carried out within the establishment or hired or purchased from outside suppliers (e.g. security; storage; use of buildings and equipment; computer services; and printing of reports)].

However, depreciation of fixed assets should be *excluded*.

Electrical and electronics engineering technology covers general electrical engineering 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 the branch of electrical engineering concerned with the use of electromagnetic spectrum and the application of such electronic devices as integrated circuits, transistors and vacuum tubes.

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

Exclude:

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

工程及科技 涵蓋土木工程；電機工程；電子學；以及其他工程學如化學、機械、冶金及材料工程、紡織技術及其他關聯學科。

企業集團 由連鎖的**直接企業投資者**和**分支機構**組成。**分支機構**包括企業集團內任何公司分行、附屬機構及聯營機構，或企業集團內任何公司具參與權益的機構。如某公司是另一公司的分支機構，則後者是前者的**直接企業投資者**。**分行**是指由母公司全權擁有的非法人機構，並與母公司有同一法律身份。某公司的**附屬機構**是指被該公司持有50%以上股權的機構。某公司的**聯營機構**是指被該公司持有20%至50%股份的機構。

有進行研發活動的機構單位包括(i)曾為本身及／或其他機構進行內部研發活動的機構單位；及(ii)曾外判研發活動的機構單位。

創新活動的開支包括下列開支項目：

- 機構單位為本身進行的內部研發活動；
- 外判予其他機構進行的研發活動；
- 營銷和品牌資產活動(包括市場研究；市場測試；產品定價；產品推廣；以及營銷策略發展，但不包括銷售和分銷活動)；
- 與購置或租賃固定資產(包括土地、樓宇、機器及設備等)及使用雲端服務伺服器有關的活動；
- 工程、設計和其他創作活動(包括技術規格、測試、評估、安裝和生產前期活動的規劃；設備安裝、測試、配置、試驗和用戶示範；從現有產品或工序設備中萃取知識或設計資料的活動；為貨品、服務或程序開發嶄新或更新的功能、形式或外觀；產生新構思的創作過程；為創新的概念開發；以及作為創新活動一部分有關組織架構改變的相關活動)；

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 **affiliates**. **Affiliates** include branches, subsidiaries and associates of any company in an enterprise group, or entities in which any company in an enterprise group has a participating interest. A company is the **direct enterprise investor** of another company if the latter is an affiliate of the former. **Branch** refers to an unincorporated entity which is wholly owned by a parent company and has the same legal identity as its parent company. **Subsidiary** of a company refers to an entity with over 50% of its equity being held by that company. **Associate** of a company is an entity with between 20% and 50% of its equity being held by that company.

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

Expenditure on innovation activities includes the expenditure on the following items:

- In-house R&D activities for own establishment;
- R&D activities contracted out to other parties;
- Marketing and brand equity activities (including market research and market testing; product pricing; product promotion; and the development of marketing strategies, but excluding sales and distribution activities);
- Activities related to the acquisition or lease of fixed assets (including land, buildings, machinery and equipment, etc.) and use of cloud server services;
- Engineering, design and other creative work activities (including technical specifications, testing, evaluation, setup and pre-production activities planning; equipment installing, testing, tooling-up, trials and user demonstrations; activities to extract knowledge or design information from existing products or process equipment; the development of a new or modified function, form or appearance for goods, services or processes; the creative process of generating new ideas; the development of concepts for innovations; and activities related to organisational change as part of innovation activities);

- 軟件開發和數據庫活動〔包括內部開發及購買電腦軟件、程式描述和支援系統及應用軟件的物資（例如標準軟件包、客製軟件方案和已嵌入產品或設備的軟件）；購置、內部開發和分析電腦數據庫及其他電子文本資料（例如收集和分析從專有的電腦數據庫以及公開報告或互聯網所獲得的數據）；以及提升或擴大資訊科技系統的功能，包括電腦程式和數據庫（例如統計數據分析和數據開採活動）〕；
- 與知識產權有關的活動〔包括申請、註冊、管理、買賣、執行、對外授權和推銷自身知識產權擁有權的所有行政和法律工作；以及從其他機構獲得知識產權擁有權（例如透過引進授權或完全購買知識產權擁有權）及向其他機構售賣知識產權擁有權的所有活動〕；以及
- 員工培訓活動（包括由機構為發展員工在特定行業、職位或工作範疇所需的知識和技能所支付或補貼的所有活動以及在職培訓和由培訓及教育機構提供與工作相關的培訓課程）。

實驗開發 是運用來自研究和實際經驗的知識進行並產生額外知識的具系統性的工作，其目的是開發嶄新的產品或程序，或為改良現有的產品或程序。

- **產品開發** 是指開發嶄新的產品，而其表現特徵、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。
- **程序開發** 是指開發嶄新或經顯著改良的生產方法或提供服務和運送貨品的方法。

- Software development and database activities [including the in-house development and purchase of computer software, program descriptions and supporting materials for both systems and applications software (e.g. standard software packages, customised software solutions and software embedded in products or equipment); the acquisition, in-house development and analysis of computer databases and other computerised information (e.g. collection and analysis of data in proprietary computer databases and data obtained from publicly available reports or the Internet); and the upgrade or expansion of the functions of information technology systems, including computer programs and databases (e.g. statistical data analysis and data mining activities)];
- Intellectual property (IP)-related activities [including all administrative and legal work to apply for, register, manage, trade, enforce, license-out and market one's own IP rights; and all activities to acquire IP rights from other organisations (such as through licensing-in or the outright purchase of IP rights) and to sell IP rights to other]; and
- Employee training activities (including all activities that are paid for or subsidised by the establishment to develop knowledge and skills required for the specific trade, occupation or tasks of employees, as well as on-the-job training and job-related education at training and education institutions).

Experimental development is the 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.

- **Product development** refers to the development of new products whose performance characteristics, attributes or use of materials and components differ significantly from those of existing products; or the significant enhancement or upgrading of existing products.
- **Process development** refers to the development of new or significantly improved production methods, or methods of providing services and of delivering goods.

研發活動範疇 有助根據研究領域劃分研發資源的分配，並可分為自然科學、工程及科技、醫療及健康科學、社會科學和人文科學及藝術。

本地研發總開支 是指在某段期間在一個國家或地區內進行的內部研發活動的開支總額，包括由境外機構資助在該國家或地區內進行的研發活動開支，但不包括支付給境外機構進行的研發活動的開支。根據其定義，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：

- 提供正式高等教育課程的大學和其他機構，不論其資金來源或法律地位；以及
- 由高等教育機構直接控制或管理其研發活動的研究機構、中心、實驗室和診所。

人文科學及藝術 涵蓋歷史；語言與文學；以及其他相關領域如哲學、音樂及神學。

資訊系統及科技 涵蓋資訊系統組織；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；以及其他相關領域如資料貯存及檢索和數據保安。

內部研發活動 是指在一間機構單位內進行的研發活動，不論資金來源為何。

為機構單位本身進行的內部研發活動 是指在機構單位內並為機構單位自身利益所進行的內部研發活動。

為其他機構進行的內部研發活動 是指在機構單位內但為其他機構所進行的內部研發活動，該等活動可能根據合約安排下進行或不收取費用。

Field of R&D activity facilitates the classification of R&D resource allocation according to the area of research and comprises natural sciences, engineering and technology, medical and health sciences, social sciences, and humanities and arts.

Gross domestic expenditure on R&D (GERD) is the total expenditure on in-house R&D activities performed within a country or territory during a given period. It includes expenditure on 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 covers the following sectoral R&D expenditure:

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

Higher education institutions include:

- universities and other institutions providing formal tertiary education programmes regardless of their source of funding or legal status; and
- research institutes, centres, experimental stations and clinics that have their R&D activities under the direct control of or administered by tertiary education institutions.

Humanities and arts cover history; languages and literature; and other related areas such as philosophy, musicology and 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 related areas 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.

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

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

製造科技 涵蓋機械人、機械人系統及機電一體化；彈性製造系統；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；以及生產安全和品質。

醫療及健康科學 涵蓋基本醫學；臨床醫學和健康科學。

自然科學 涵蓋數學及電腦學；物理學；化學；地球及相關環境科學；生物科學；以及農業科學。

其他輔助人員 是指工作與進行研發活動有直接關係的人員，通常是研發部門、組別或項目小組的人員。

包括：

- 文員、秘書、行政人員、各行業的技術、半技術與非技術工人，以及所有其他相關輔助人員。

不包括：

- 只參與一般管理工作如保安、清潔及維修人員。

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單位內每日工作不少於一小時的所有僱員。

產品創新 是指機構單位在市場上推出一個**嶄新或經改良的產品**（貨品或服務），這些產品在其功能、便於使用程度、部件、子系統或外觀設計上與該機構單位過往所推出的產品**顯著不同**。產品創新（**嶄新或經改良的產品**）須對於該機構單位而言為首創的，但並不一定為市場上嶄新的產品。產品創新的開發可由該機構單位或其他機構進行。

例子：

- 改用經改良的物料（例如透氣紡織品、輕巧但堅固的合成物、環保塑膠）；
- 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（例如個人對個人資金轉帳）；
- 一個新的多媒體套裝軟件；以及
- 外觀設計上有顯著改變的產品。

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

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

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

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

Include:

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

Exclude:

- personnel engaged in general housekeeping activities such as security, cleaning and maintenance.

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

Product innovation is the market introduction of a **new or improved product (goods or services)** with respect to its capabilities, user friendliness, components, sub-systems or aesthetic design, which **differs significantly** from the products introduced by the establishment previously. Product innovations (**new or improved products**) must be new to the establishment, but not necessarily new to the market. They could have been originally developed by the establishment or other parties.

Examples:

- use 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 saving light bulbs);
- video on demand via broadband Internet;
- a new banking service (e.g. P2P funds transfer);
- a new multimedia software package; and
- products with significant change in aesthetic design.

不包括：

- 只涉及輕微修改現有產品；以及
- 純粹交易全由其他機構生產和開發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（汽車科技研發中心）；
- 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）；
- 物流及供應鏈多元技術研發中心；
- 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嶄新和改良的產品、程序或用途，以及為改進現有的產品、程序或用途。

研發活動和其他活動的分別在於前者帶有相當程度的新穎或創新元素，以及能夠解決科學及／或技術方面的疑難，即對具相關方面常識和技術的人士而言亦未可顯易解決的問題。

研發活動可於自然科學、工程及科技、醫療及健康科學、社會科學和人文科學及藝術等範疇進行。

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（即主要為一特定實際目標或目的而進行的原始研究）；以及
- 實驗開發（即為開發嶄新或經改良的產品或程序而進行的具系統性的工作）。

Excludes:

- changes to existing products with only minor modifications; and
- pure trading of new or significantly improved products wholly produced and developed by other organisations.

Public technology support organisations include the following:

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

These public organisations engage 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 to improve the existing products/processes/applications.

R&D activities can be distinguished from others by 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 those familiar with the stock of commonly used knowledge and techniques in the area concerned.

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

Include:

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

不包括：

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

研究員 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、醫療及健康科學、社會科學和人文科學及藝術等領域的專上或以上程度教育），並在統計期內參與研發活動的專業工作的人員（例如科學家、工程師等），以及監督研發活動的行政人員及其他高層人員。他們亦作為專業人員參與構想或創造新知識，進行研究和改進或開發概念、理論、模型、技術、儀器、軟件或運算方法。

社會科學 涵蓋心理學；經濟學；教育；以及其他相關領域如工商管理、法律、政治學及社會學。

資金來源 是指一間機構為進行研發活動、產品或業務程序創新時所獲取資金的來源。為準確界定相關來源，須符合兩個條件：

- 必須涉及直接轉移的資金；以及
- 相關資金轉移必須 **旨** 在並由獲取資金的機構 **實際用於** 進行研發活動、產品或業務程序創新。

資金的轉移可以合約、撥款或捐款形式進行，但 **不包括** 待償還的貸款。如無來源符合上述條件，應視為 **自資**。

技術員 是指就某知識或技術方面具職業或技術訓練且達到一定水平，並以該身分在統計期內參與研發活動的人員，通常是在研究員督導下，透過應用概念和運算方法進行科學及技術工作。

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 filing for patent applications).

Researchers refer to persons with scientific or technological training (usually with completion of post-secondary or above education in such areas as natural sciences, engineering and technology, medical and health sciences, social sciences, and humanities and arts) engaged in the professional work of R&D activities (e.g. scientists, engineers, etc.); and administrators and other high-level personnel who directed R&D activities during the reference period. They are also professionals engaged in the conception or creation of new knowledge, conducting research and improving or developing concepts, theories, models, techniques, instrumentation, software or operational methods.

Social sciences cover psychology; economics; education; and other related areas such as business management, law, political sciences and sociology.

Source of funds refers to the source from which an organisation has received funds for performing R&D activities, product or business process innovation. Two criteria must be fulfilled to correctly identify the source:

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

The transfer of funds may take the form of contracts, grants or donations, but does **not** include loans to be repaid. If a source fulfilling the above criteria cannot be identified, it should be regarded as **self-financed**.

Technicians refer to persons with vocational or technical training in a branch of knowledge or technology up to a certain standard engaged in that capacity in R&D activities during the reference period by performing scientific and technical tasks involving the application of concepts and operational methods, usually under the supervision of researchers.

附錄乙：資料來源

Appendix B : Data Sources

工商機構的創新活動

1. 政府統計處透過進行「**創新活動統計調查**」，搜集工商機構有關創新活動的數據。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成熟水平。在設計此項統計調查時，本處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單位：

- 農業及漁業
- 製造
- 電力及燃氣
- 建造（只包括就業人數 10 人或以上的機構單位）
- 進出口貿易、批發及零售以及住宿及膳食服務
- 運輸、倉庫及速遞服務
- 資訊及通訊
- 金融及保險、地產、專業及商用服務
- 社會及康樂活動服務

Innovation activities in the business sector

1. The Census and Statistics Department (C&SD) collected data relating to innovation activities in the business sector through the **Survey of Innovation Activities**. The Survey was first conducted by the C&SD in 2002 to help ascertain the level of technological sophistication of the Hong Kong economy. In designing the Survey, reference has been made to relevant international standards promulgated by the Organisation for Economic Co-operation 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 of the Survey is the Central Register of Establishments, which is a comprehensive register maintained by the C&SD and updated with reference to records of the Business Registration Office of the Inland Revenue Department. The Survey covers establishments engaged in the following industry groupings:

- Agriculture and fishing
- Manufacturing
- Electricity and gas
- Construction (only 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
- Social and recreational services

4. 考慮到成本效益和運作效率方面，這項統計調查沒有涵蓋一些經濟貢獻相對較小，以及預期較少進行創新活動的行業及機構單位類別（例如採礦及採石、就業人數不足 10 人的建造業機構單位、的士、公共小巴和個人服務）。

統計期

5. 這項統計調查搜集公曆 2021 年或按個別機構單位的會計慣例涵蓋 2021 年大部分時間的會計或財政年度的數據。至於在上述期間開業或歇業的機構單位，所搜集的是指其該年度內營業期間的數據。

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／或創新活動的機構單位，均全被納入樣本內。這些機構單位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單位，和透過各種渠道如新聞報道、網上搜尋以及經諮詢政府部門、工商機構、高等教育機構和商會而識別的機構單位。至於其他機構單位，則經科學方法抽選樣本。被抽選作為統計調查對象的機構單位數目共 6 056 間。根據統計調查結果估計，在統計調查涵蓋範圍內的機構單位總數約為 299 100 間。

4. In regard to cost effectiveness and operational considerations, some industries and categories of establishments (e.g. mining and quarrying; construction establishment with fewer than 10 persons engaged; taxis; public light buses; and personal services) with relatively smaller economic contribution and presumably not as engaged in innovation activities are not covered in the Survey.

Survey reference period

5. Data collected in the Survey is referred to the calendar year 2021, or any accounting or financial year covering the major part of 2021 according to the accounting practice of individual establishments. For establishments which commenced or ceased operation within their respective reference period defined above, data collected was for that part of the period during which the establishments were in operation.

Sample design

6. The sampling frame of the Survey was first stratified by industry group and then 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 news report, web search, and consultations with Government departments, businesses, higher education institutions and trade associations. As for other establishments, a scientific sample was drawn. Altogether 6 056 establishments were selected for enumeration. The total number of establishments falling within the scope of the Survey was estimated to be about 299 100 based on the results of the Survey.

數據搜集

7. 數據搜集工作在 2022 年 2 月開始。本處郵寄統計調查問卷及附註予被抽選的機構單位，並製備問卷的電子版本以供索取使用。有需要時，本處外勤人員會造訪或致電個別機構單位，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，訪問成功的機構單位有 5 013 間，而未有回應、未能接觸或在統計期內沒有營業的則有 1 043 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。本刊物所載的估値是根據一個特定樣本所得的資料所編製，然而以同樣的抽樣方式可抽選出的樣本眾多，此特定樣本僅為其中之一，根據不同樣本所編製的估値亦互有差異。抽樣誤差是計算這些差異的數量，以量度根據一個特定樣本所編製的估値，在估計總體數據方面的精確程度。

9. 本刊物在評估各種變數估値的精確程度時，採用了離中系數。離中系數為一統計量數，顯示估値的相對精確程度。離中系數的計算方法是將估値的抽樣誤差除以估値本身的數值，並以百分比表示。離中系數越低，估値越精確。

10. 統計變數的 95% 置信區間的上下限分別在樣本估値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並就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數值。

Data collection

7. Data collection work started in February 2022. 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 C&SD would visit or telephone 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, 5 013 establishments were successfully enumerated, and 1 043 establishments failed to respond, could not be located or were found to be inactive during 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 for gauging the precision of an estimate derived from a 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. It 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 CIs 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. 本刊物所載列的主要統計變數估值的離中系數及其 95% 的置信區間如下：

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

統計變數 Statistical 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單位（包括有進行內部研發活動的機構單位及外判研發活動予其他機構的機構單位）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)	1.3%	1.9%	1.3% – 1.4%
有進行創新活動的機構單位的百分比 Percentage of establishments having undertaken innovation activities	2.4%	2.1%	2.3% – 2.5%
內部研發活動開支（十億元） Expenditure on in-house R&D activities (\$ billion)	11.7	0.6%	11.57 – 11.83
創新活動開支（十億元） Expenditure on innovation activities (\$ billion)	28.68	0.7%	28.30 – 29.07

高等教育機構及政府機構的研發活動

R&D activities in the higher education and government sectors

12. 本處自 2000 年開始搜集高等教育機構及政府機構有關研發活動的數據。有關研發活動的數據涉及大學教育資助委員會（教資會）資助的大學，而有關的統計數字主要是根據教資會所提供的行政記錄編製而成。

12. The C&SD has started to collect data on R&D activities for the higher education and government sectors since 2000. Data on R&D activities for the higher education sector involves the universities funded by the University Grants Committee (UGC). The relevant statistics are mainly compiled based on administrative data provided by the UGC.

13. 至於政府機構，本處在 2022 年 4 月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 form was sent by e-mail to all Government bureaux, departments and quasi-government organisations (including public technology support organisations) in April 2022 for data collection. Verification of data collected had been made through telephone follow-ups if necessary.

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