



PARTNERING FOR A
SMART
FUTURE

年報 ANNUAL REPORT 2016-17



50 HKPC®

同行五十載 智慧創未來

PARTNERING FOR A SMART FUTURE

1960S

1970S

1980S

1990S

2000S

2010S



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LEADING HONG KONG ENTERPRISES
INTO THE NEW ERA OF
SMART INDUSTRY AND SMART CITY.

50TH ANNIVERSARY

營運摘要

Operational Highlights



生產力局及其附屬公司的整體服務收入達 4.56 億元，較 2015/16 年度增長 4.28%

The total service income of HKPC and its subsidiaries amounted to HK\$456 million, representing an increase of 4.28% over 2015/16.

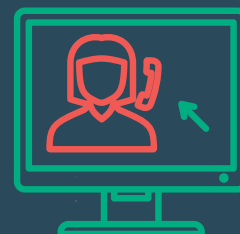
推行 948 個項目，46 個新研發項目。
Undertaken 948 consultancy projects and 46 new R&D projects.

生產力局推出了 28 項新服務和產品，成功將 19 項產品（或技術）商品化，註冊了 18 項專利（或授權/特許權）。
Introduced 28 new services and products, commercialised 19 products (or technologies), registered 18 patents (or licences/royalties).

客戶服務

Customer Satisfaction

客戶服務滿意度調查得分：8.99 (10 分為滿分)
Scored 8.99 on a scale of one to 10 in a customer satisfaction survey.

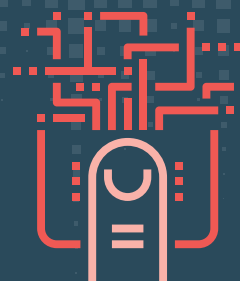


新工業支援平台

New Industry Support Platforms

特區政府委託生產力局成立知創空間，以提供工作空間和技術支援，協助用家將創新理念發展成工業設計及產品。

The Government commissioned HKPC to establish an Inno Space to provide workspace and technical support to assist users in developing their innovative ideas into workable industrial designs.



策略合作

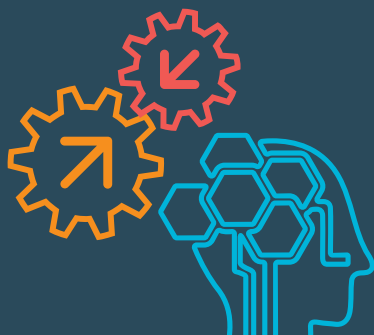
Major Collaborations

麻省理工學院於生產力大樓開設 MIT Hong Kong Innovation Node，為該院學生、教職員和科創人員提供多種技術和創業培訓。

The Massachusetts Institute of Technology (MIT) Hong Kong Innovation Node will be set up at the HKPC Building to provide various kinds of technological and entrepreneurial education and training to MIT and Hong Kong undergraduates, academics and researchers.

與 Fraunhofer IPT 合作發展工業 4.0 轉型方案，提供培訓和顧問服務，推動香港企業升級至工業 4.0 運作模式。

Collaborated with Fraunhofer IPT to develop an i4.0 migration model and provide training and consultancy services to guide Hong Kong companies through the i4.0 upgrading process.



聯繫持份者

Communication with stakeholders

舉辦 42 個業界諮詢活動。

42 industry consultation events organised.

接待 246 個本地、內地及海外考察團，共 4,732 位訪客。
Played host to 4,732 visitors and 246 delegations from the Mainland, overseas and locally.



服務社區

Serving the Community

獲民政事務局資助推行「種籽聯盟(SEED) 體驗計劃」，在生產力局顧問促導下，私人企業的行政人員協助社會企業改善營運和管理。

Implemented the "Social Enterprise Executive Development (SEED) Experiential Programme", sponsored by the Home Affairs Bureau, through which executives from business enterprises assist social enterprises to improve their operations and management under the facilitation of HKPC consultants.

創新及科技基金資助主辦「全港中學生3D打印設計比賽」，鼓勵年輕一代運用3D打印技術發揮創意。

Launched the "Hong Kong Secondary Schools 3D Printing Design Competition" to promote the creative and innovative use of 3D printing among the younger generation with funding support from the Innovation and Technology Fund (ITF).

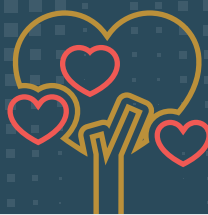
率領17位「香港中學生太空搭載實驗方案設計比賽」得獎隊伍的代表，見證本港中學生構想的太空實驗裝置隨「神舟十一號航天船」升空的歷史時刻，首次由國家航天員於太空任務中操作香港學生設計的實驗裝置。

Led a delegation of 17 representatives from the winning school teams of the "Space Science Experiment Design Competition for Hong Kong Secondary School Students" to witness the launch of the Shenzhou-11 manned spacecraft. The astronauts conducted experiments designed by Hong Kong students during their space mission.

與香港家庭福利會合作舉辦「生產力工業科技青少年體驗計劃2016」。30位中學生在三天的體驗活動中，參觀本地及內地製造企業，認識不同工業的工作環境，生產力局管理層亦與中學生分享個人心得和事業經歷。

Co-organised the "6th HKPC Teenager Experience Programme" with the Hong Kong Family Welfare Society.

Throughout the four-day programme, about 30 secondary students visited local and Mainland manufacturing companies to learn about the working environment in a number of different industries. HKPC's senior management also shared their insights and career experience with the students.



推動可持續發展

Sustainability Initiatives

擔任10億元回收基金的執行伙伴和秘書處，以促進回收再造業的可持續發展。85項申請獲批核，資助額約7,000萬元。

Acting as the implementation partner and secretariat for the HK\$1 billion Recycling Fund to promote the sustainable development of the recycling industry in Hong Kong. To date, funding of approximately HK\$70 million has been approved for 85 applications.

擔任2015年至2020年清潔生產伙伴計劃五年新階段的執行機構，51個示範項目獲批核，並為127家工廠進行現場評估。Acting as the implementation agent for the new five-year phase of the Cleaner Production Partnership Programme from 2015 to 2020. 51 demonstration projects were approved and on-site assessments conducted for 127 factories.



獎項殊榮

Awards and Honours



「廚餘全面轉化系統」獲頒香港工商業獎設備及機器設計優異證書

Food Waste Total Recycling System - Certificate of Merit in Equipment and Machinery Design, 2016 Hong Kong Awards for Industries

「第44屆日內瓦國際發明展」

44th International Exhibition of Inventions Geneva

金獎 - 「度身訂造」可更換馬蹄鐵技術

Gold medal - Customised and Replaceable Horseshoe

銀獎 - 「智能流動電動車充電系統」和「無水紡織品處理系統」

Silver medal - Multi-standard Mobilised EV Smart Charger and Waterless Textile Materials Processing System

銅獎 - 「醫學皮膚分析系統」

Bronze medal - Medical Skin Analyser

生產力局以「從零到一」為主題的2014/15年度年報榮獲五項本地及國際獎項：

HKPC 2014/15 Annual Report, "From Zero to One", received five international and local awards:

2016年國際ARC獎項 - 最佳100年報

The 100 Best Annual Reports of 2016, International ARC Awards 2016

2016年國際ARC獎項 - 大獎(非牟利機構組別)

Grand Award in Non-Profit Organisation, International ARC Awards 2016

2016年國際ARC獎項 - 金獎(非牟利機構組別)

Gold Award in Non-Profit Organisation, International ARC Awards 2016

2016年國際ARC獎項 - 銅獎(非牟利機構組別)

Bronze Award in Interior Design (Non-Profit Organisation), 2016 International ARC Awards

2016年香港管理專業協會最佳年報比賽 - 設計嘉許獎

Citation for Design Award, 2016 Best Annual Report Awards organised by the Hong Kong Management Association

生產力局簡介 WHO WE ARE

香港生產力促進局(生產力局)是成立於1967年的法定機構，致力協助香港企業提高生產力和競爭力。生產力局每年向超過1,000家企業提供跨價值鏈的業務顧問服務，並協助業界進行市場導向的應用研發項目。

生產力局的工作由理事會管轄，包括一位主席及22名成員，理事會代表管理層、勞方、學術界、專業團體和相關的政府部門。生產力局的營運經費主要來自技術和管理顧問服務收費，以及政府資助。

位於九龍塘的生產力大樓，設有針對不同科技領域的支援中心及認可檢測設施。生產力局亦在珠三角營運全資附屬公司，為港資企業提供快捷支援。

The Hong Kong Productivity Council (HKPC) is a statutory organisation established in 1967 dedicated to help Hong Kong companies enhance their productivity and competitiveness. HKPC provides integrated business consultancy services across the value chain and market-led applied research and development support to more than 1,000 enterprises each year.

HKPC is governed by a Council comprising a Chairman and 22 members, representing management, labour, academic and professional interests, as well as related government bureaux and departments in Hong Kong. HKPC's operations are mainly supported by income from its technical and management consultancy services and government subventions.

Centrally located in Kowloon, the HKPC Building features a wide range of industry support centres and accredited testing facilities dedicated to various technological areas and specific sectors. HKPC also operates wholly-owned subsidiaries in the Pearl River Delta to provide readily available support to Hong Kong enterprises operating across the boundary.





生產力局五十週年金禧誌慶的機構標誌設計，貫徹原有標誌以雙色平行線象徵本局與工商企業的緊密夥伴關係，標誌上的「50」形似「無限」的符號，線條設計充滿動感而且寓意深長，象徵本局與業界源遠流長的深厚關係，並且放眼遠方，繼續攜手同行、創新求變，共創無限的未來。

HKPC's 50th anniversary logo design incorporates the two-toned lines of the original emblem to signify its close partnership with Hong Kong enterprises, while the number "50" resembles the infinity symbol ("∞"). The vibrant linear design symbolises the longstanding and profound relationship between HKPC and Hong Kong's industries, partnering to innovate for change and build a boundless future.

願景、使命、價值及策略

OUR VISION, MISSION, VALUE AND STRATEGY

願景 Vision

成為首選的
企業方案伙伴
Be the best
solution partner

使命 Mission

加強工商企業的生產力及競爭力
Enhance business productivity
and competitiveness

價值 Values

與時並進 Improvement
靈活創新 Innovation
融合貫通 Integration
誠信正直 Integrity
伙伴合作 Partnership
全心全情 Passion
以人為本 People
追求卓越 Performance

策略 Strategy



重點發展 專精領域 Focusing on Areas of Excellence

為向業界推廣創新科技及先進管理概念，生產力局必須持續發展專精領域，提升設備，以回應本地工商業的訴求。

Being an important change agent in disseminating advanced technology and management best practices, it is necessary for HKPC to continuously develop areas of excellence and invest in advanced facilities to proactively respond to the emerging needs of industry.

積極拓展 平台 Scaling up Platforms

通過建立業界支援平台，生產力局可以匯集公營和私營機構的資源和技術，協力回應工商業界的重大課題。

In order to assist a wider spectrum of enterprises to address sectoral issues, HKPC plays an active role in setting up resource hubs for different industry sectors, through which a wide range of funding and technical support services bundled from the public and private sectors are made accessible to as many companies as possible.

與持份者 攜手合作 Collaborating with Stakeholders

生產力局致力擴展及深化合作網絡，積極與持份者探討其挑戰及所需支援。

HKPC continues to extend its network, in both breadth and depth, by exploring collaboration opportunities with new partners and engaging its stakeholders to discuss the challenges they face and how to cater to their needs.

所有機構都要依靠各式各樣的「資本」來推動其業務的成功發展。
All organisations depend on various forms of capital as fuel to sustain their success.

財務資本 FINANCIAL CAPITAL

生產力局約三成經費來自政府年度整筆資助，而其餘約七成則主要來自各類收費服務，以及政府資助的應用研發項目及工商業支援項目。

The operation of HKPC is supported by Government subvention in the form of an annual block grant which covers approximately 30% of its income. Around 70% of HKPC's income is supported predominantly by various fee-charging services and competitive Government-funded applied R&D programmes and industry support initiatives.

我們的經費來源
How we are funded

30%

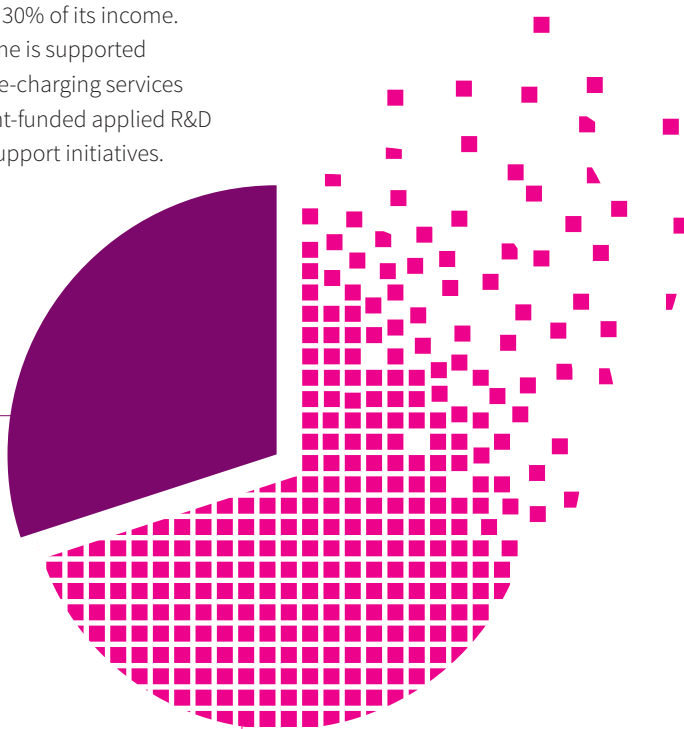
政府資助
Government Subvention

70%

服務收入
Service Income

政府資助的應用研發項目及工商業支援項目
Government-funded applied R&D projects and industry support programmes

客戶項目
Client projects



人力資本 HUMAN CAPITAL

生產力局致力運用專業知識，為工商企業提供各種高增值的解決方案，因此，人力資本是本局最寶貴的無形資產。

As an organisation providing value-added services and knowledge-based solutions, human capital is HKPC's most valuable intangible asset.

生產力局的團隊包括專業顧問及技術人員，具備良好的學術背景和豐富的行業經驗。79.3%員工擁有學士或以上學位，而員工更具備約160項專業資格。

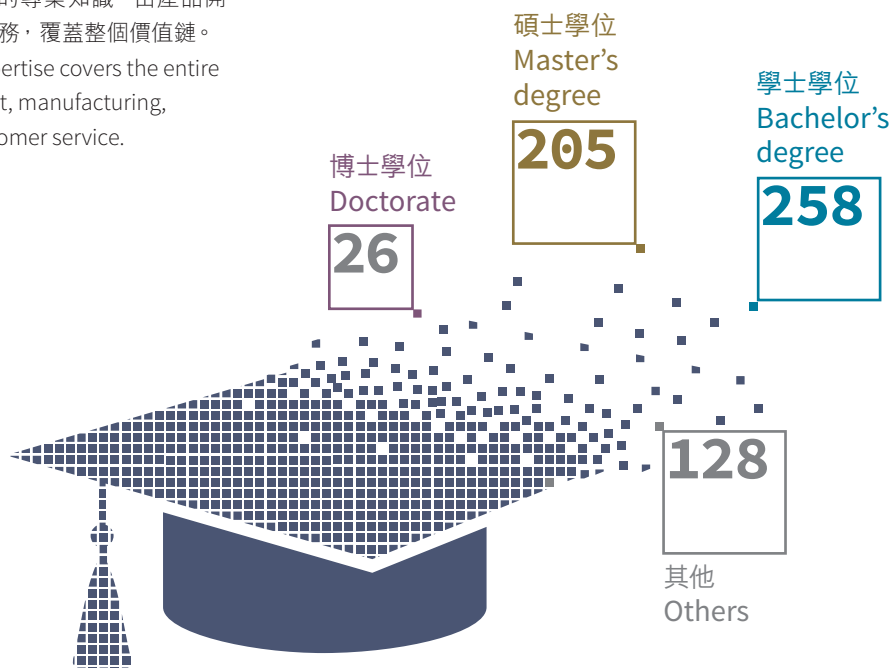
HKPC's workforce comprises professional consultants and technical staff with strong academic backgrounds and solid industry experience. 79.3% of HKPC's employees hold bachelor's or higher degrees and about 160 professional designations have been conferred on our colleagues.

本局員工具備不同的才能，以及豐富的專業知識，由產品開發、製造、測試、企業管理以至客戶服務，覆蓋整個價值鏈。Their diverse talents and extensive expertise covers the entire value chain from product development, manufacturing, testing, business management to customer service.

員工學歷

Academic Qualifications of HKPC Staff

(截至2017年3月31日) (as at 31 March 2017)



人力資本 HUMAN CAPITAL

生產力局已制定了系統化的培訓課程，清楚界定各級人員所需的技能和知識。

HKPC has formulated a structured training curriculum to clearly define the general skills and knowledge required in each staff grade.

本局亦建立完善的持續培訓制度，充份運用局內專長及外間的進修資源，讓員工掌握必要的技能，為生產力局客戶提供更優質的服務：

HKPC has established a comprehensive continuous training framework that utilises both in-house expertise and external facilities aiming to sharpen staff members' essential skills to better serve our clients:

每名員工平均培訓時數

15.7

小時 hours
Average Training
Hours

過去一年資助

Sponsorship programme to encourage staff members to participate in external training.

230

位員工參加
employees have attended

440

項外間培訓課程及知識交流活動。
external training programmes and knowledge-sharing events under this programme in the past year.

共資助21位員工完成學士學位課程，26位員工取得碩士或博士學位，包括工商管理、電腦及資訊系統、電子及信息工程、環境管理。

Sponsored 21 employees since 2009 to pursue their first degree and another 26 to pursue master's degrees or doctorates in the disciplines of Business Administration, Computing & Information Systems, Electronic & Information Engineering, and Environmental Management.

為創新科技署支持的創新科技獎學金計劃2名獲獎者提供實習機會。

Provided internship opportunities to two awardees of the Innovation and Technology Scholarship Award Scheme, supported by the Innovation and Technology Commission (ITC).

結構資本 STRUCTURAL CAPITAL

「結構資本」可定義為「員工下班後，仍留在公司的所有事物」，例如：操作流程、管理系統、資訊系統、知識產權和良好典範。

Structural capital can be defined as all those things that remain in an organisation after its employees have left the office after work, such as operating processes, management systems, information systems, intellectual property and best practices.

生產力局擁有不同類型的結構資本，當中包括各類無形資產，例如：品牌價值、作業流程、管理系統及資訊科技平台，以確保本局持續運作。

HKPC is in possession of many kinds of structural capital, which incorporate all intangible assets such as brand value, processes, management systems and IT platforms that help to ensure the sustainable operation of HKPC.

憑藉多年來支援香港工業的服務表現，生產力局建立了備受推崇的品牌，本局的服務質素及可靠性享譽業界。

With a long track record of support for Hong Kong industry, HKPC has built a well-established and highly regarded brand, with a reputation for quality and reliability.

生產力局重視創新機制，自2000年起推行「應用研發計劃」(CRD)，每年財政預算也為計劃基金預留最少300萬港元，支援員工進行自發的研究項目，開發新技術、管理方法和最佳工作程序。

Especially important is our innovation mechanism. HKPC has deployed a Commercial Research and Development Scheme (CRD) since 2000. Every year, at least HK\$3 million of internal funding is earmarked in HKPC's annual budget for the CRD Fund to support our staff's self-initiated R&D projects relating to new technologies, methodologies, services and best practices.

生產力局透過資訊科技平台及知識管理(KM)機制，有系統地收集、整理和分享資訊。HKPC systematically captures, organises and shares information through IT platforms and Knowledge Management (KM) mechanisms.

本局亦推行了企業資源規劃系統(ERP)，以管理本局的主要業務運作，包括項目、財務、採購及相關運作。

A corporate-wide Enterprise Resource Planning system (ERP) was also deployed to manage our key business functions covering projects, finance, procurement and related operations.

生產力局在生產力大樓設立產業支援中心，配備先進的設計、加工和檢測設施，用以支援本局的顧問服務及技術研發。大樓內亦設有「香港實驗所認可計劃」(HOKLAS)的認可實驗所。

To support its R&D and consulting services, HKPC operates industry support centres in HKPC Building that are equipped with advanced design, processing and testing facilities, including accredited laboratories under the Hong Kong Laboratory Accreditation Scheme (HOKLAS).

HK\$3

百萬 MILLION

基金預留支援員工進行
自發的研究及開發新技術
internal funding is earmarked
in HKPC's annual budget for
the CRD Fund to support our
staff's self-initiated R&D
projects on new technologies

產業支援中心 INDUSTRY SUPPORT CENTRES

創新及知識產權

Innovation & Intellectual Property

- 3D 打印體驗廊
3D Printing One
- 電腦輔助設計及製造中心
CAD/CAM Centre
- 知識產權服務中心
Intellectual Property Services Centre
- 知創空間
Inno Space
- 精密光機電科技中心
Optics and Opto-Mechatronics
Technology Centre

自動化

Automation

- D2D+ 企業自動化中心
D2D+ Business Automation
Centre
- 智能機器人中心
RoboticsOne

測試及標準

Testing & Standards

- 電磁兼容科技中心
Electromagnetic Compatibility Centre
- 環境及產品創新化驗室
Environmental and Product Innovation Laboratory
- 香港鐘錶科技中心
Hong Kong Watch & Clock Technology Centre
- 可靠性測試中心
Reliability Testing Centre
- 香港塑膠機械性能測試中心
The Hong Kong Plastic Machinery Performance
Testing Centre

製造科技

Manufacturing Technology

- 先進電子工藝中心
Advanced Electronics Processing Technology Centre
- 先進表面處理科技中心
Advanced Surface Technology Development Centre
- 隨形冷卻技術中心
Conformal Cooling Technology Centre
- 香港珠寶科技中心
Hong Kong Jewellery Industry Technology Centre
- 微製造科技中心
Micro Fabrication Technology Centre
- 塑膠科技中心
Plastics Technology Centre
- 精密模具技術中心
Precision Tooling Technology Centre
- 智能產業廊
Smart Industry One

資訊科技

Information Technology

- 香港電腦保安事故協調中心
Hong Kong Computer
Emergency Response Team
Coordination Centre (HKCERT)
- 香港軟件檢測和認證中心
Hong Kong Software Testing
and Certification Centre

中小企業

Small and Medium Enterprises

- 中小企一站通
SME One

關係資本 RELATIONAL CAPITAL

關係資本泛指可以為機構創造價值的對外關係，例如：客戶、供應商、合作伙伴和政府部門等。

Relational capital refers to value-creating relationships that are external to an organisation such as those with customers, suppliers, partners and the government.

生產力局一直密切留意香港特區和內地政府的政策，並支持各項政策範疇的措施。本局自90年代起已積極與內地政府機構建立合作網絡，成功在多個層面建立了有效的跨境溝通渠道。

HKPC keeps close track of HKSAR and Mainland government policies and supports government initiatives in various policy areas. HKPC has been actively building a cooperation network with Mainland government organisations since the 1990s, establishing effective cross-boundary communication channels on many levels.

生產力局孕育了不少行業協會的成立和發展，協助業界運用不同的資源，推動行業升級，並向政府反映業界的訴求。本局亦與學術機構及研究中心緊密交流合作，推動產業升級、創新及科技商品化。

HKPC nurtures the formation and development of trade associations, helping them to access various resources to upgrade their sectors and reflect their concerns to the HKSAR Government. We also exchange ideas and collaborate with academic and research institutes in the areas of industry upgrading, innovation and technology commercialisation.

為加強本局的合作網絡，生產力局的代表亦參與約170個行業協會、專業團體、政府及半政府機構的委員會，由本局顧問協助推行業界聯繫、行業推廣及專業發展活動。To foster our collaboration network, HKPC has representation in about 170 trade associations, professional bodies, and the advisory committees of government bureaux, departments and related organisations, with many of our experts making contributions to their networking, industry promotion and professional development activities.

生產力局成立的產業諮詢平台「HKPC集思匯」，就可能影響各行業長遠發展的課題諮詢業界意見。「HKPC集思匯」所收集的意見，有助促成全新的工商業支援計劃。The industry consultation platform, “Hong Kong Industry Network Clusters” (HK-INC), was established by HKPC to gauge the views of different industries on issues of relevance to their long-term development.

在2016/17年度舉辦了42場行業諮詢會，22,093人次參與生產力局為行業協會舉辦的各類交流活動。

Views and comments collected through HK-INC helped shape the establishment of various new industry support programmes. In the last year, 42 industry consultation meetings were organised and 22,093 people attended networking activities for industry associations in 2016/17.



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行業諮詢會議
Industry
consultation
meetings

我們的持份者 OUR STAKEHOLDERS

為採取最有效的方式協助持份者創優增值，我們必須清楚了解誰是持份者，明白他們的重要性，以及他們對生產力局的期望。我們的持份者包括：

In order to apply the most effective ways to create value for our stakeholders, we must identify the expectations and needs of our stakeholders. We must know to whom we are accountable and what is important to them.



對生產力局的期望

What they expect of HKPC

以務實及針對性的支援服務及計劃，迅速回應政府的政策措施。
Respond swiftly to government initiatives with specific and practical initiatives and programmes.

維持良好的企業管治，履行本局的公共使命，滿足社會需求。
To maintain good corporate governance and fulfil its public mission in response to stakeholders' needs through an effective and efficient organisational structure.

持續提供優質服務，以獨立、專業的判斷，保障企業伙伴的最大利益。
To deliver a consistent level of service as well as independent and professional judgment to safeguard the best interest of HKPC's business partners.

與行業協會保持緊密聯繫，協助各界運用不同的資源，推動行業升級，並向政府反映業界的訴求。
To maintain a close linkage with industry associations so as to help different sectors access various resources for business upgrading and reflect their concerns to the government.

維持長期合作關係，定期提供合作機會。
To provide regular cooperation opportunities and maintain a long-term relationship.

建立積極進取的工作環境，讓員工能盡展所長，不斷發展專業及個人能力。
To create a positive work environment in which people are empowered, enabling them to grow professionally and personally.

作為他們與各行業的橋樑，以轉移其技術及知識。
To help them collaborate with various industry sectors to transfer their technologies and knowledge.

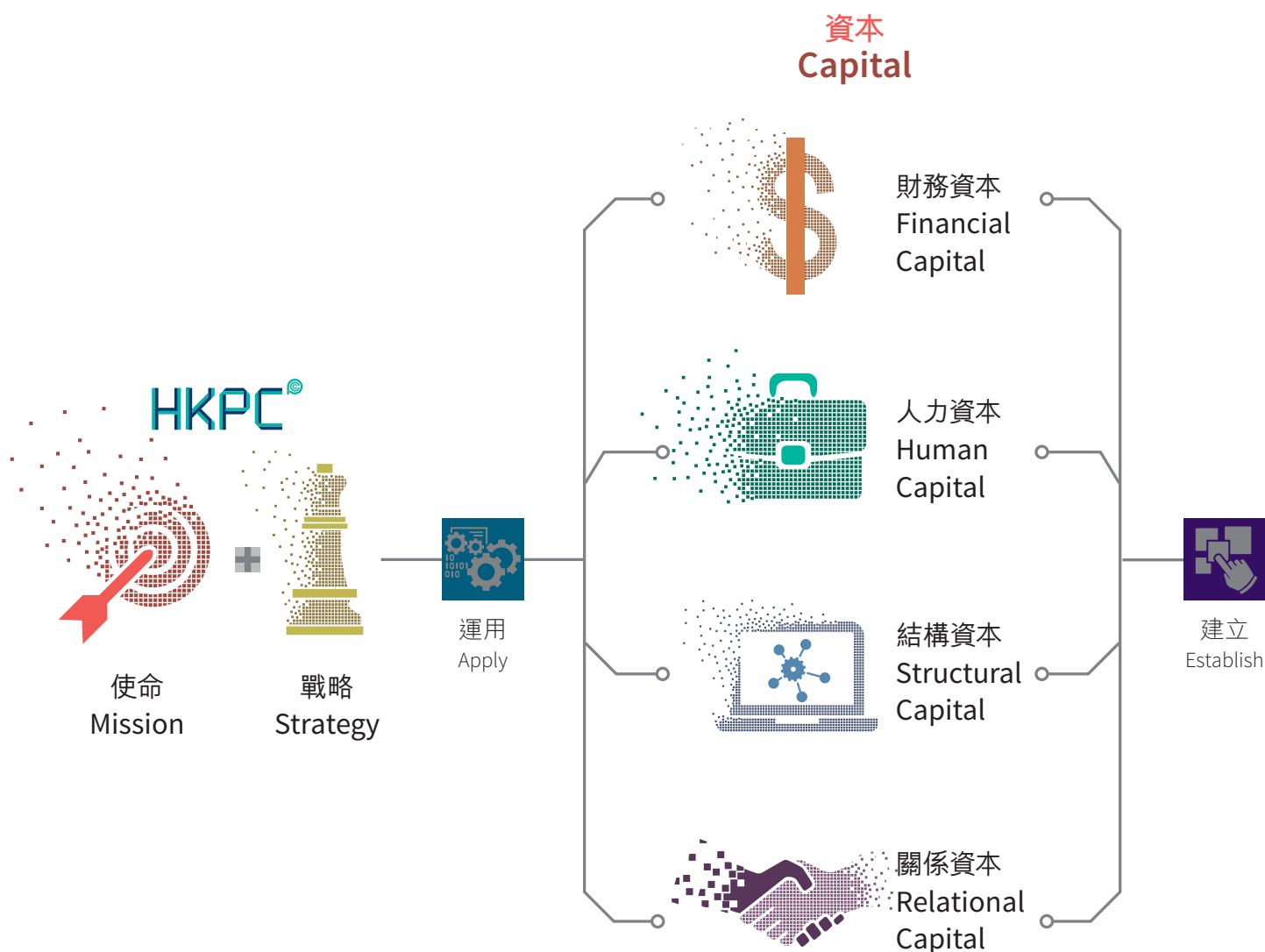
按照企業管治原則營運業務，並定期透過不同傳播媒介與公眾溝通。
To conduct its business following the principles of good corporate governance and regularly communicate with the general public through various media.

我們的業務模式 OUR BUSINESS MODEL

作為法定的工商業支援機構，生產力局的核心業務是協助企業和行業，提升競爭力及可持續性，以克服外圍環境的挑戰，包括：經濟狀況、技術轉變及環保挑戰。As a statutory industry support organisation, HKPC's core business is to help companies and industry sectors enhance their competitiveness and sustainability to cope with the challenges of the external environment, including economic conditions, technological change and environmental problems.

為此，生產力局運用各種「資本」，包括：「財務資本」、「人力資本」、「結構資本」和「關係資本」。透過本局的產業支援平台和企業支援服務，將「資本」轉化為產品、服務、技術和知識，最終令香港經濟、環境和社會受惠。

To do so, HKPC draws on various forms of capital, including financial capital, human capital, structural capital and relational capital, and converts them into products, services, technology and knowhow through HKPC's industry support platforms and enterprise support services, having a positive impact on the economy, environment and society.



產業支援平台

Industry Support Platform

生產力局不能單靠一己之力服務香港工商業，為了擴大支援服務規模，必須借助本局以外的能力和資源。

HKPC can never serve Hong Kong's industries in isolation. In order to scale up its services substantively, HKPC has to leverage external capabilities.

因此，生產力局致力建立支援平台，不但為業界全面提供所需服務，更為其他主要持份者及業務伙伴創造新的商機。

In the process, HKPC creates support platforms which not only provide comprehensive services to industries in need but also create new business opportunities for all other key stakeholders and business partners.

企業支援方案

Enterprise Solutions

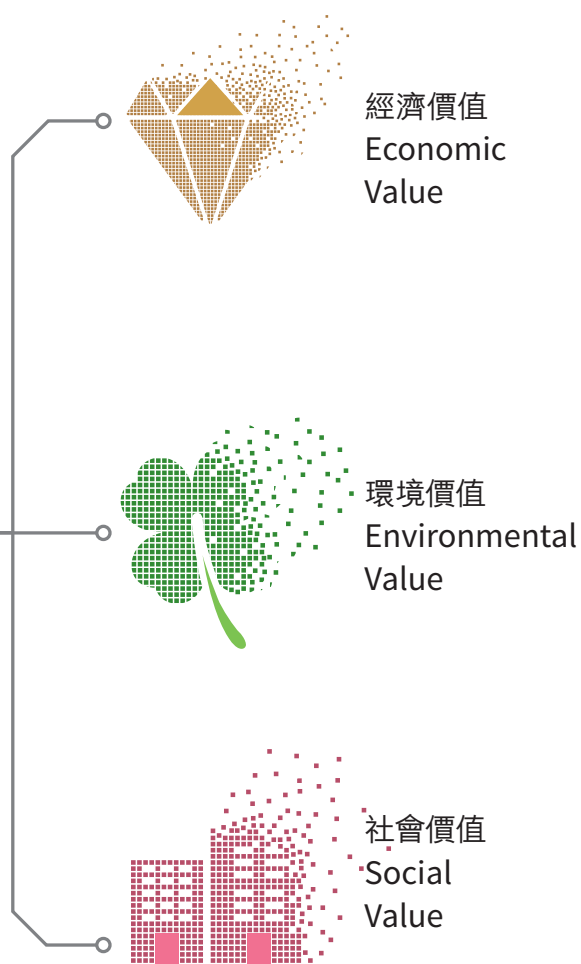
除了產業支援服務平台，生產力局亦提供個別企業支援服務，涵蓋整個業務價值鏈。從個別企業的支援服務所汲取的經驗，有助我們確保產業支援服務平台能切合業界的需要。

Besides its one-to-many service platform, HKPC also provides a one-on-one enterprise support service covering the entire business value chain. These one-on-one service projects complement the service platforms, and the experience gained will ensure that these service platforms remain relevant to the industrial sectors they serve.

持份者需要 Stakeholders' Needs



價值 Value Created



生產力局 - 與你智慧創未來

HKPC - Your Smart Solution Partner

第四次工業革命和智慧城市正在迅速發展，因應這個席捲全球的趨勢，生產力局正全力協助企業掌握關鍵技術和管理能力，以開拓新興的商機。

With the advent of the Fourth Industrial Revolution and the development of smart cities around the world, HKPC is offering all-round support to equip enterprises with enabling technologies and management capabilities to allow them to capture emerging businesses opportunities.

智能產業 Smart Industry



智能製造

Smart Manufacturing

工業 4.0 認證培訓、成熟度評估、策略顧問服務

Industry 4.0 Certified Training, Maturity Assessment, Deployment Consultancy



智能產品

Smart Products

金屬 3D 打印、產品創新、測試和認證

Metal 3D Printing, Product Innovation, Testing and Certification



智能材料

Smart Materials

納米材料、陶瓷、複合材料

Nano Materials, Ceramics, Composite Materials



智能自動化與機器人

Intelligent Automation and Robotics

生產線自動化、智能傳感器應用、流程優化

Production Line Automation, Intelligent Sensors, Process Optimisation



先進表面技術

Advanced Surface Technology

表面塗層、表面改性、智能傳感器開發

Surface Coating, Surface Modification, Smart Sensors



智能服務

Smart Service

業務流程創新、大數據分析、物聯網應用

Business Process Innovation, Big Data Analytics, IoT Application

智慧城市 Smart City



智慧經濟 Smart Economy

業務轉型、電子商務、服務創新

Business Transformation, E-Commerce, Service Innovation



智慧環境 Smart Environment

廢物轉化能源、水循環利用、能源管理

Waste-to-energy Development, Water Recycling, Energy Management



智能交通 Smart Mobility

車聯網、電動汽車、充電基建發展

Internet of Vehicles (IoV), EVs, Charging Infrastructure Development



智慧生活 Smart Living

健康管理、食品加工、社會創新

Health Management, Food Processing, Social Innovation



智慧人才 Smart People

人才發展、人才重塑與培訓、知識管理

Talent Development, Retooling and Training, Knowledge Management



智慧管治 Smart Governance

電子政府、可持續發展、標準與合規、網絡安全

E-Governance and Sustainability, Standards and Compliance, Cyber Security

主席前言

MESSAGE FROM THE CHAIRMAN



「這場革命剛剛開始，正不斷顛覆我們的生活、工作及互相聯繫的方式。」

“We are at the beginning of a revolution that is fundamentally changing the way we live, work, and relate to one another.”

- 第四次工業革命

- The Fourth Industrial Revolution

克勞斯·施瓦布

Klaus Schwab

2017年，第四次工業革命席捲全球之際，香港生產力促進局亦與本地工商企業風雨同路，走過50年光輝歷程。

從60、70年代以來，生產力局一直見證、一同創造香港的經濟奇蹟。今天，香港正面對「再工業化」的機遇，在此重大時刻擔任生產力局主席，引領業界邁向工業發展新里程，實在與有榮焉。

生產力局在過去50年，秉持生產力促進機構的核心使命，透過提升能力、推動變革，並與各持份者伙伴合作，協助無數本地企業緊貼技術和市場轉型的步伐。第四次工業革命將帶來空前的變革與機遇，但生產力局將始終如一，履行使命。

回顧生產力局半世紀的工作，印證生產力機構一直擔當關鍵的角色，能集中提供專門的支援服務，協助企業克服升級轉型的障礙。

早在70年代，本局已成立廉價自動化單位，為工業界提供低成本的自動化方案。80年代，配合港商跨境營運的發展，本局積極推廣全面品質管理，為不同行業開發電腦輔助設計方案；並在工商業對環保仍感陌生之時，提倡綠色生產力的概念。

90年代，生產力局率先在香港推出ISO 9000品質管理顧問服務，成功協助大量香港公司取得ISO 9000認證。遠在今天3D打印技術大行其道之前，本局已於1995年設立香港首家快速原型科技中心。

進入21世紀，香港工業面對珠三角地區生產成本上漲的挑戰，以及迫切需要減少碳足跡。生產力局迅速回應業界的需求，牽頭成立並推行全新的一站式支援平台，協助香港企業將其營商模式轉型升級，並採用更清潔的生產方式。

In 2017, as the Fourth Industrial Revolution begins to take a grip on economies around the world, the Hong Kong Productivity Council (HKPC) is celebrating 50 successful years of partnership with Hong Kong industries, through rain and shine.

HKPC witnessed and was a key player in the economic miracle of Hong Kong in the 1960s and 1970s. Now we are set to move into a new era of re-industrialisation, and it makes me very proud to be the chair of HKPC as we continue to support our clients and partners moving into the next stage of industrial development

Over the past 50 years, HKPC has been diligently fulfilling the core missions of a productivity organisation by building capacity, catalysing change and working in close partnership with key stakeholders. We have helped numerous local enterprises to keep pace with technology and market transformation, and this will continue with the significant and exciting changes being brought about by i4.0.

Looking back over the past five decades shows solid proof of the indispensable role a productivity organisation can play in providing a focused and dedicated support platform to overcome the hurdles of industrial transformation and upgrading.

As early as the 1970s, we set up the Low-Cost Automation Unit to provide automation solutions to local manufacturers. In the 1980s, we promoted Total Quality Management and developed computer-aided design solutions for various sectors. While environmental protection was still a novelty in Hong Kong, we were already promoting green productivity practices to local manufacturers.

Into the 1990s, HKPC was the first to launch consultancy services for the ISO 9000 quality management system in Hong Kong and we successfully helped many local companies obtain ISO 9000 certification. While 3D printing only became the rage in recent years, we had already set up Hong Kong's first rapid prototyping technology centre back in 1995.

Around the turn of the century, Hong Kong industry confronted a number of major challenges, including rising production costs in the PRD region and a pressing need to reduce its carbon footprint. HKPC responded promptly to the needs of the industry by initiating one-stop support platforms to help Hong Kong enterprises transform and upgrade their modes of business and adopt cleaner production practices.

PARTNERING FOR A
SMART
FUTURE

展望2017年的營商環境，環球市場正逐漸復甦。香港經濟在2017年首季實質增長4.3%，高於2016年同期的2%。第一季的香港整體出口貨值，亦按年大幅上升9.2%，升幅為2013年以來最高。

在經濟發展方面，「十三五」規劃及「一帶一路」將為香港創造更多新機遇。另外，「粵港澳大灣區城市群發展規劃」的新政策，也提供了嶄新平台，把「大灣區」發展成為科技及創新樞紐，開拓內地經濟持續增長的商機。

然而，香港要確保經濟持續發展，仍面對嚴峻挑戰。香港經濟若缺乏新的發展動力，將困限本地經濟的長遠成長，削弱社會的流動性。故此，香港必須推動經濟結構轉型，推動產業多元化發展，從而創造更多高薪、高技能的就業機會。與此同時，香港亦與其他經濟體系一樣，面對人口老化所帶來的挑戰。

智能科技日益進步，第四次工業革命正在改變消費者的行為，顛覆傳統的商業模式。面對時代的挑戰，香港工商業不能獨善其身，必須把握香港「再工業化」帶來的無限機遇，發展高端製造業，促進經濟持續增長，創造優質的就業機會。

另一方面，香港進一步發展成智慧城市，將有效克服人口老化和城市化的挑戰，帶動可持續發展。



Getting back to 2017, we are encouraged to be seeing a gradual recovery in global markets. In the first quarter of 2017, Hong Kong's economy grew by 4.3% in real terms compared to 2% for 2016 as a whole. Hong Kong's total exports of goods grew by 9.2% year-on-year in the first quarter, marking the fastest growth since the first quarter of 2013. These are encouraging signs.

In terms of economic development, the National 13th Five-Year Plan and the Belt and Road Initiative will undoubtedly create new opportunities for businesses in Hong Kong. The proposed Guangdong-Hong Kong-Macao Bay Area initiative will provide another new platform for building a technology and innovation hub to tap into the Mainland's continued growth.

But it is important not to overlook the formidable challenges Hong Kong faces in being able to sustain its economic development. Like other economies, Hong Kong is also facing the challenges posed by a rapidly ageing population. The lack of new growth engines will restrain our long-term growth and social mobility, and there is an urgent need to diversify and restructure the economy to create more higher-paid and higher-skilled job opportunities.

The Fourth Industrial Revolution, with its rapid advances in smart technology, is already changing consumer behaviour and disrupting traditional business models. Hong Kong industry will not be immune to the challenges this will bring, but i4.0 also offers unlimited opportunities for Hong Kong to "re-industrialise" by developing high-end manufacturing industries in the city that can promote sustainable economic growth and create high-quality employment opportunities.

Transforming Hong Kong into a smart city will also help to address the challenges of an ageing society and increasing urbanisation, ensuring the city can develop in a more sustainable way.

生產力局將會再一次肩負重任，開拓創新技術和管理典範，引領香港企業邁向智能產業和智慧城市的新紀元。生產力局的「知創空間」將於今年啟用，配合其他新舉措，將有助培育香港的創新文化和創業精神，推動我們的城市躍進新里程。

衷心感謝本局總裁麥鄧碧儀女士過去七年盡心盡力帶領生產力局，協助本局與工商界建立緊密伙伴關係，革新本局企業形象，令生產力局成為香港企業信賴和首選的方案伙伴，貢獻良多。在她卓越領導下，生產力局的企業管治和技術能力，皆奠定了穩固的基礎。

祝願麥鄧碧儀總裁榮休生活愉快，期待生產力局在她的佳績上，繼續不斷拓展業務。在此亦感謝所有理事會成員及全體同事，過去一年來鼎力支持本局的工作。

第四次產業革命大時代當前，新挑戰、新機遇不斷湧現。五十年來，香港生產力促進局一直是工商企業的忠實伙伴，我們將堅守使命，致力提升企業生產力及競爭力，與工商企業伙伴同行，以智慧共創未來。

主席

林宣武, SBS, JP

HKPC will play a pivotal role in pioneering innovative technologies and management best practices to lead Hong Kong enterprises into the new era of smart industry and the smart city. It is exciting to see initiatives such as Inno Space at HKPC which, when it opens later this year, will help to foster a culture of innovation and entrepreneurship in Hong Kong that can lead our city's industry into the next stage of development.

Lastly, I would like to extend my sincere gratitude to Mrs Agnes Mak, Executive Director of HKPC, for her dedicated effort in leading the HKPC over the past seven years. She has been exemplary in forging a close partnership between HKPC and the business sector, refreshing HKPC's corporate image, and strengthening HKPC as the trusted and preferred solution partner for Hong Kong enterprises.

My colleagues and I are grateful that under Agnes's capable leadership, the Council has laid a solid foundation in both corporate governance and technical competence to help local enterprises transform and upgrade their business.

I wish Agnes every happiness upon retiring from the Council. We look forward to the Council's further growth and development, building upon her good work. My thanks also go to all Members and staff of the Council for their support, commitment and dedicated effort over the past year.

We are facing challenging yet exciting times. As Hong Kong industry moves forward into the i4.0 era, HKPC will stand by its mission - to enhance business productivity and competitiveness - with a focus on helping enterprises embrace the changes in this new era. For five decades we have been a strong and committed partner to local industry. As we celebrate our 50th anniversary we look forward to continuing and strengthening this partnership to build a smarter and more sustainable future for industry in Hong Kong.

Willy LIN Sun Mo, SBS, JP

Chairman



主席
Chairman
林宣武, SBS, JP
Mr Willy Lin Sun-mo, SBS, JP
美羅針織廠(國際)有限公司董事總經理
Managing Director,
Milo's Knitwear (International) Ltd.
(自2016年8月6日起履任主席)
(Assumed chairmanship
from 6 August 2016)

生產力局
HKPC

副主席
Deputy Chairman
黃志光
Mr Patrick Wong Chi-kwong
退休
Retired

劉展灝, SBS, MH, JP
Mr Stanley Lau Chin-ho, SBS, MH, JP
連年錶業有限公司董事總經理
Managing Director,
Renley Watch
Manufacturing Co. Ltd.
(自2016年4月1日-2016年6月20日)
(1 April 2016 - 20 June 2016)

業務發展委員會主席
Business Development Committee Chairman
李國本
Dr Delman Lee
聯業製衣有限公司總裁兼首席科技總監
President and Chief Technology Officer,
TAL Apparel Ltd.

職員事務委員會主席
Staffing Committee Chairman
陳祖恒
Mr Sunny Tan
聯泰控股有限公司執行副總裁
Executive Vice President,
Luen Thai Holdings Ltd.

財務委員會主席
Finance Committee Chairman
馮英偉
Mr Wilson Fung Ying-wai
退休
Retired

張益麟
Mr Alan Cheung
TML Apparel Ltd.
董事總經理
Managing Director,
TML Apparel Ltd.

周博軒
Mr Felix Chow Bok-hin
駿碼科技集團行政總裁
Chief Executive Officer,
Niche-Tech Corporation Ltd.

查逸超, JP
Prof John Chai Yat-chiu, JP
福田集團控股有限公司董事總經理
Managing Director,
Fook Tin Group Holdings Ltd.

郭敏宜
Ms Mandy Kwok Man-ye
退休
Retired

管理/專業/學術界別代表
Management/
Professional/
Academic Representatives

梁廣泉
Mr Leung Kwong-chuen
Director, Union Healthcare Ltd.

譚嘉因, MH
Prof Tam Kar-yan, MH
香港科技大學工商管理學院院長
Dean of the School of Business and Management,
Hong Kong University of Science and Technology

楊嘉燕
Ms Karmen Yeung Ka-yin
畢馬威會計師事務所中國稅務合夥人
Partner, China Tax, KPMG

吳宏斌, BBS, MH
Dr Dennis Ng Wang-pun, BBS, MH
寶星首飾廠有限公司董事總經理
Managing Director,
Polaris Jewellery Manufacturer Ltd.

卓永興, JP
Mr Cheuk Wing-hing, JP
創新及科技局常任秘書長
Permanent Secretary for Innovation and Technology

李寶儀, JP
Ms Mabel Li Po-yi, JP
勞工處副處長(勞工事務行政)
Deputy Commissioner for Labour
(Labour Administration)

陳李藹倫, JP
Mrs Helen Chan, JP
政府經濟顧問
Government Economist

蔡淑嫻, JP
Ms Annie Choi Suk-han, JP
創新科技署署長
Commissioner for Innovation and Technology

甄美薇, JP
Ms Salina Yan Mei-mei, JP
工業貿易署署長
Director-General of Trade and Industry

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Mrs Carrie Yau Tsang Ka-lai, GBS, JP
職業訓練局執行幹事
Executive Director, Vocational Training Council

李秀琼
Ms Amy Lee Sau-king
港九電器工程電業器材職工會秘書長
General Secretary, Hong Kong & Kowloon Electrical
Engineering & Appliances Trade Workers Union

勞工界別代表
Labour Representatives

李凱
Mr Li Hoi
香港職工會聯盟培訓中心副行政總監
Deputy Executive Director, Hong Kong
Confederation of Trade Unions Training Centre

林錦儀
Miss Lam Kam-yi
物流理貨職工會理事長
Chairperson,
Logistics Cargo Supervisors
Association

成員變動情況(2017年1月1日生效)
Membership Changes (Effective on 1 January 2017)

新任成員 New Members

郭敏宜
Ms Mandy Kwok Man-ye

譚嘉因, MH
Prof Tam Kar-yan, MH

尤曾家麗, GBS, JP
Mrs Carrie Yau Tsang Ka-lai, GBS, JP

楊嘉燕
Ms Karmen Yeung Ka-yin

于健安, JP
Mr Emil Yu Chen-on, JP

離任成員 Outgoing Members

伍志強, MH
Mr Victor Ng Chi-keung, MH

梁任城
Mr Leung Yam-shing

蒙美玲
Prof Helen Meng Mei-ling

顏吳餘英, MH, JP
Mrs Katherine Ngan Ng Yu-ying, MH, JP

楊棕傑
Dr Jack Yeung Chung-kit

核數師 Auditors

安永會計師事務所
Ernst & Young

法律顧問 Legal Advisers

高露雲律師行
Wilkinson & Grist

尼克松・鄭黃林律師行
Nixon Peabody CWL

截至2017年3月31日
As at 31 March 2017

于健安, JP
Mr Emil Yu Chen-on, JP
啟東電線電纜有限公司總經理
Director and General Manager,
Keystone Electric Wire & Cable Co. Ltd.

總裁匯報

EXECUTIVE DIRECTOR'S REVIEW



憑藉五十年累積的專業經驗及知識，
生產力局一直以專業及務實的態度，
協助企業解決各式問題。

With five decades of professional
experience and accumulated wisdom
under our belts, HKPC has been able
to help enterprises deal with all kinds
of issues with confidence and rigorous
professionalism.

今年是生產力局五十週年金禧誌慶。本局從只有12名員工起步，發展至超過600人的跨領域專業團隊，實有賴與時並進的精神，以及特區政府和工商界一直以來對本局的信任及支持。

歷練多，人生智慧才能提升。憑藉五十年累積的專業經驗及知識，生產力局一直以專業及務實的態度，協助企業解決各式問題。藉慶祝金禧，我們期盼表達本局信守與企業及社會大眾伙伴同行的承諾，全力協助香港工商業邁進智慧新紀元。

服務需求持續增長

隨全球經濟逐漸復甦，創新技術不斷變革營商模式，本局繼續加強對香港工商業的支持，協助他們拓展新商機。在2016/17年度，我們的整體服務收入為\$4.56億港元，較2015/16年度增長4.28%。年內，我們共推行948個顧問項目，客戶滿意度調查的得分為8.99(10分最高)。

本局按照三大策略——「與持份者攜手合作」、「重點發展專精領域」及「積極拓展支援平台」，推展工商業支援服務。在各個策略範疇，本局皆能穩步向前，滿足業界的需求。

2016/17 has been a memorable year for the Hong Kong Productivity Council as we celebrate our 50th anniversary. From very humble beginnings in 1967, when we launched with just 12 staff members, HKPC now boasts a multi-disciplinary professional team of over 600 people. All this was made possible through a spirit of innovation and continuous improvement, with the trust and support of the Hong Kong SAR Government and our industry partners.

One strength that grows with age is the ability to put things into perspective. With five decades of professional experience and accumulated wisdom under our belts, HKPC has been able to help enterprises deal with all kinds of issues with self-assurance, confidence and rigorous professionalism. As we celebrate our golden jubilee, I would like to reaffirm HKPC's partnership with industry and the community at the same time as we chart the course for the next stage of industrial transformation in the "smart" era.

Rising Demand for HKPC Services

Amid the gradual global economic recovery and development of transformative technologies, HKPC remained focused on strengthening our support to Hong Kong industries to help capture new business opportunities. In 2016/17, HKPC's total service income was HK\$456 million, representing an increase of 4.28% over that of 2015/16. We undertook a total of 948 consultancy projects in the year, and scored 8.99 out of 10 in a customer satisfaction survey.

Our industry support services are steered by a three-pronged strategy of "collaborating with stakeholders", "focusing on areas of excellence" and "scaling up platforms". We have made robust progress in each of these strategic areas to meet the needs of Hong Kong industry.



與持份者攜手合作

為推動「工業 4.0」，以及協助企業在國家「中國製造 2025」策略下尋找商機，生產力局積極伙拍不同的國際技術機構和團體，為業界提供緊密支援，以順利轉型至「工業 4.0」的營運模式。

「工業 4.0」策略伙伴

生產力局與來自德國弗勞恩霍夫生產技術研究所(Fraunhofer IPT) 合作發展「工業 4.0」轉型方案，包括評估企業的準備及成熟程度，以及全面的「工業 4.0」實施和認可計劃。

該方案備受各行各業的好評。玩具、電子、金屬及塑膠等行業的企業已經開始試行，發展日臻成熟。其他行業的企業，如汽車模具、注塑和食品加工等亦將緊隨採用。生產力局與 Fraunhofer IPT 專家合作，提供培訓和顧問服務，指引先導公司推行「工業 4.0」升級轉型。

建設創新樞紐

在 2015 年，麻省理工學院(MIT) 宣布成立 MIT Hong Kong Innovation Node，藉此協作空間加強兩地的科研聯繫，麻省理工可憑藉香港獨特的資源，包括先進製造能力，抓緊香港以至鄰近珠三角地區的發展機遇。

Collaborating with Stakeholders

To promote “Industry 4.0” (i4.0) and help enterprises seize opportunities under the “Made in China 2025” strategy initiated by the Central Government, HKPC partners with various international technology institutes and bodies to provide close support to industry for a smooth transition to the i4.0 operation and business model.

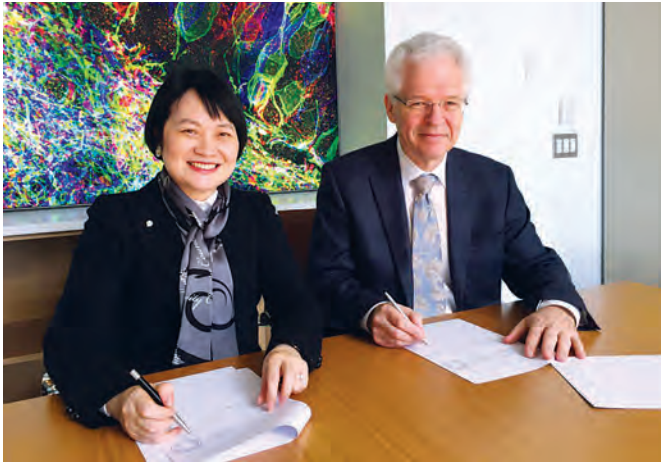
Strategic Partnership for i4.0

In collaboration with the Fraunhofer Institute for Production Technology (IPT) from Germany, HKPC developed an i4.0 migration model comprising a readiness check, maturity level evaluation, holistic implementation plan and recognition scheme.

The model has been well received by different sectors of the industry. Companies from sectors such as toys, electronics, metals and plastics have implemented the model on a trial basis and are on the way to reaching a certain level of maturity. Companies from other sectors such as automotive tooling, plastic injection and food processing will soon follow suit. HKPC collaborated with experts from Fraunhofer IPT to provide training and consultancy services to guide the pilot companies through the i4.0 upgrading process.

Building an Innovation Hub

In 2015, the Massachusetts Institute of Technology (MIT) announced the launch of the MIT Hong Kong Innovation Node, a collaborative space that aims to connect the MIT community with advanced manufacturing capabilities and other resources in Hong Kong and the Pearl River Delta (PRD) region.



經過嚴謹的遴選，麻省理工學院決定於生產力局開設 MIT Hong Kong Innovation Node，專注為該院學生、本地大學和企業提供技術及創業方面的教育和培訓。這項嶄新的合作關係可借助麻省理工在智能製造和科技創業等方面的專長，讓生產力局為本港工商業界增值。

此外，憑藉本局五十年的豐富經驗、廣闊的工商網絡和跨領域技術，也可協助麻省理工在本港推展其工作，為未來開拓更多的合作機會。

工商組織合作

為了解業界對不同行業長遠發展的見解，以及所需的政策和技術支援，生產力局本年度舉辦了42個業界諮詢會議，其中主要是通過「HKPC集思匯」諮詢平台舉行，出席者包括政府、半官方機構、工商團體和企業，討論有關智能產品、車聯網、零售業大數據，以及在工業4.0浪潮下資訊科技業的商機等課題。

生產力局一直是工商行業協會的重要合作伙伴，攜手加強本港各行業中小企的競爭力。年內，生產力局與不同行業的協會合作，展開多個中小企業發展支援基金資助項目，在質量保證、經營管理、產品創新、行業推廣，以及發展高增值市場等不同領域，增強中小企業的競爭能力。

MIT Hong Kong Innovation Node selected the HKPC Building as its new location following an extensive search process. While the Node will focus on technological and entrepreneurial education and training for students from MIT, local universities and enterprises, this exciting new relationship will allow HKPC to leverage on MIT's world-renowned expertise in smart manufacturing and technology entrepreneurship to bring value to the local manufacturing industry.

In return, we will offer our vast local industry network and wealth of knowledge and experience accumulated over 50 years of supporting Hong Kong Industry to MIT. We are confident that this will pave the way for the start of many potentially exciting collaborations.

Partnership with Trade Associations

To gauge industry's views on the long-term development of different sectors and to identify their needs regarding Government and technical support, HKPC organised a total of 42 industry consultation meetings during the year, most of which were convened through our major consultation platform, HK Industry Network Cluster (HK-INC). Participants from the Government, quangos, trade and industry organisations met with business partners to discuss issues relating to smart products, the internet of vehicles, big data for the retail industry, and business opportunities for the IT industry under i4.0.

HKPC continues to be a major partner with industry and trade associations in enhancing the competitiveness of Hong Kong's SMEs across various sectors. During the year, in collaboration with trade associations from a wide array of sectors, HKPC launched and implemented projects sponsored by the SME Development Fund to enhance the competence of SMEs in the areas of quality assurance, operation management, product innovation and industry promotion, as well as helping them capture opportunities in high-value-adding market sectors.

重點發展專精領域

生產力局一直致力推廣先進技術及管理模式，促進工商業變革，故此，本局不斷發展專精領域，投資先進設施，主動回應各行業的新興需求。

應用研發

生產力局積極推動應用研究與發展，協助香港企業把上游研發成果轉化為產品，創造新的商業發展機會。

在2016/17年度，生產力局推出了28項新服務和產品，成功將19項產品(或技術)商品化，註冊了18項專利(或授權/特許權)，開展46個新研發項目。其中許多研發項目皆獲業界贊助，對我們研發成果的市場潛力投下信心一票。

除了業界反應良好，生產力局不少研發項目也獲國際及本地獎項，其中數個研發項目在第44屆「日內瓦國際發明展」獲得殊榮，得獎的研發項目包括：金獎－「度身訂造」可更換馬蹄鐵技術、銀獎－「智能流動電動車充電系統」、銀獎－「無水紡織品處理系統」，及銅獎－「醫學皮膚分析系統」。另外，「廚餘全面轉化系統」獲得2016年「香港工商業獎：設備及機器設計優異證書」。

Focusing on Areas of Excellence

Being an important change agent in disseminating advanced technology and management best practices, HKPC needs to continuously develop areas of excellence and invest in advanced facilities to proactively respond to the emerging needs of local industries.

Applied R&D

HKPC plays an active role in market-led applied research and development (R&D), helping Hong Kong industries transform upstream R&D into market-ready products - a springboard to potential business growth.

In 2016/17, HKPC introduced 28 new services and products, commercialised 19 products (or technologies), registered 18 patents (or licences/royalties), and commenced 46 new R&D projects. Many of these R&D projects were co-sponsored by the industry, which is a clear vote of confidence in the market potential of our R&D expertise.

In addition to receiving positive market feedback, many of our R&D projects won international and local accolades. Various applied R&D technologies developed by HKPC won four awards in the "44th International Exhibition of Inventions Geneva" held in Switzerland. The winning projects included: Gold medal - "Customised and Replaceable Horseshoe"; Silver medals - "Multi-standard Mobilised EV Smart Charger" and "Waterless Textile Materials Processing System"; and Bronze medal - "Medical Skin Analyser". Our FTR Food Waste Total Recycling System won a Certificate of Merit in the





本局研發團隊一直致力為工商業界提供創新的解決方案，這些殊榮肯定了團隊的努力和貢獻。我們會繼續推行嶄新的應用研發項目，協助本港企業採用創新技術，提升競爭力。

為了提升生產力局在「工業 4.0」領域的能力，以及為業界提供增值服務，在 2016 年，我們成為香港首家獲 Fraunhofer IPT「工業 4.0」認證的專業機構。我們現正計劃為專業團隊提升「工業 4.0」的能力，例如：資訊及通訊科技、人機界面、數據分析和智能創新。

積極拓展支援平台

生產力局致力建立業界支援平台，以匯集公營和私營機構的資源及技術，協助更多不同行業的工商企業解決難題。

3D 打印體驗廊

3D 打印體驗廊是生產力局推廣 3D 打印技術的平台，備受公眾和商界的熱烈歡迎。自 2015 年 8 月啟用以來，接待訪客 16,163 人次，並已處理 1,025 個查詢。

Equipment and Machinery Design Award in the Hong Kong Awards for Industries.

This is great recognition of the effort and dedication of our research teams in providing creative applied solutions to local industries. We will continue to embark on new applied R&D projects that can help Hong Kong enterprises adopt innovative technologies to enhance their competitiveness.

To build up HKPC's competency in the area of i4.0 and to deliver value-added services to industry, in 2016 we became the first and only professional organisation in Hong Kong to acquire the i4.0 credential from Fraunhofer IPT. Plans are in the pipeline to gear up our professional teams for more aspects of i4.0 such as information and communication technology (ICT), human machine interfaces, data analytics and smart innovation.

Scaling Up Platforms

In order to assist a wider spectrum of enterprises to address sectoral issues, HKPC plays an active role in setting up resource hubs for different industries, through which a wide range of funding and technical support services from the public and private sectors are provided.

3D Printing One

3D Printing One, HKPC's platform for promoting 3D printing technology, also received an enthusiastic response from the public and business community. Since its opening in August 2015, 3D Printing One has received 16,163 visitors, and handled 1,025 enquiries.

知創空間

年內，特區政府委托生產力局成立「知創空間」，打造一個協助初創企業、提供工作空間和技術支援的生態社區，幫助他們將創新意念轉化為工業設計、原型和產品。「知創空間」預計於2017年10月啟用，並以初創企業、中學、大學學生及畢業生作為主要目標用戶。

提升回收業

政府於2015年10月推出總額10億的回收基金，以促進回收業的可持續發展，環境局委任本局為該計劃的執行伙伴和秘書處。

至今，委員會建議批出85宗申請，包括23項「企業資助計劃」、55項「企業資助計劃 – 小型標準項目」及7項「行業支援計劃」，涉及資助金額約7,000萬港元。2017年1月推出了一系列便利申請新措施，協助小型回收商通過基金資助提升營運效率。

BUD 專項基金

「發展品牌、升級轉型及拓展內銷市場」(BUD專項基金)於2012成立以來，生產力局一直為專項基金的「企業支援計劃」(ESP)擔任秘書處。

截至2017年2月底，專項基金批出的撥款總額約為2.87億港元。根據生產力局進行的完成調查和跟進調查，約有99%的ESP受助人認為ESP有效協助企業的業務發展，包括提升整體競爭力、提高企業形象和品牌知名度，以及增加營業額。

零售業人力需求管理科技應用支援計劃

憑藉多年來服務零售業的豐富經驗，以及與本地資訊科技業界緊密合作，自2014年起，生產力局一直推廣及推行「零售業人力需求管理科技應用支援計劃」(ReTAAS)。截至2017年3月底，超過261宗的申請已獲批准，涉及資助金額超過900萬港元。

Inno Space

During the reporting year, the Government commissioned HKPC to establish an Inno Space to create an eco-system and community for assisting startup companies, providing workspace and technical support to help turn their innovative ideas into industrial designs, prototypes and products. Expected to commence operation in October 2017, Inno Space will be open to the public, with startup entrepreneurs, secondary or university students and graduates as its primary target users.

Upgrading Recycling Industry

The Government introduced a HK\$1 billion Recycling Fund in October 2015 to promote the sustainable development of the recycling industry. HKPC was appointed by the Environment Bureau as the implementation partner and secretariat for the scheme.

To date, the Advisory Committee on Recycling Fund has approved funding for 85 applications, among which 23 are under the Enterprise Support Programme, 55 under the Enterprise Support Programme (Small-scale Standard Projects), and seven under the Industry Support Programme. The amount of funding approved so far is approximately HK\$70 million. A series of facilitation measures was introduced in January 2017 to help small recyclers enhance their operational efficiency through funding applications.

BUD Fund

HKPC has also acted as the secretariat for the Enterprise Support Programme (ESP) of the Dedicated Fund on Branding, Upgrading and Domestic Sales (the BUD Fund) since its inception in 2012.

Up to end February 2017, the total amount of funding approved was about HK\$287 million. According to completion surveys and tracking surveys conducted by the HKPC, around 99% of ESP grantees considered the ESP effective in assisting their business development, including upgrading their overall competitiveness, enhancing their corporate image and brand awareness, as well as increasing turnover.

ReTAAS

Riding on our rich experience in serving the retail sector and close partnership with the local IT industry, HKPC has been delivering robust support for the promotion and implementation of the "Retail Technology Adoption Assistance Scheme for Manpower Demand Management" (ReTAAS) since 2014. Up to end March 2017, funding of more than HK\$9 million had been approved for more than 261 applications.



中小企一站通

為方便中小企搜尋發展資源，生產力局於2012年成立了「中小企一站通」(SME One)，提供一站式支援，協助本地中小企充份利用香港及珠三角的支援與資助計劃。過去五年，「中小企一站通」處理了超過13,590宗查詢，舉辦逾534個論壇及工作坊，共吸引24,066多位中小企代表參與。

渣打香港中小企領先營商指數

「渣打香港中小企領先營商指數」是於2012年推出的季度調查，前瞻來季的營商環境，由生產力局獨立執行，是本港同類型調查中最廣泛和深入之一，涵蓋八大行業，共取得超過三千多個回覆作分析。

該指數已成為本地中小企業整體業務環境前景重要指標之一。除整體指數外，調查結果亦會就美國總統大選、英國脫歐和資訊科技保安意識等專題，諮詢中小企意見。

SME One

Aiming to enhance SMEs' ability to access development resources, a dedicated centre called SME One was established by the HKPC in 2012, providing one-stop support for local SMEs to utilise the variety of support and funding schemes available in Hong Kong and the Pearl River Delta region. Over the past five years, SME One has handled 13,590 enquiries on various funding and industry support schemes, organised 534 workshops and forums, and attracted participation from 24,066 SME representatives.

SME Leading Business Index

Launched in 2012, the "Standard Chartered Hong Kong SME Leading Business Index" is executed independently by HKPC and sponsored by Standard Chartered Hong Kong. It is one of the most extensive surveys of its kind in Hong Kong, with more than 3,000 responses from the four quarterly surveys, covering eight major industrial sectors.

The index has become one of the leading indicators of local SMEs' outlook on the overall business environment. Besides the overall index, the surveys also gauged the views of SMEs on special issues such as the change in US presidency, Brexit and IT security awareness.



TecONE

生產力局與香港科技園合辦 TecONE 資源中心，為中小型初創科企提供資助及支援計劃諮詢服務。年內，TecONE 處理 1,077 宗查詢及轉介 429 宗個案，協助科企尋找合作伙伴及服務供應商。自 2014 年 7 月運作以來，TecONE 助科技企業申請超過 3,300 萬港元資助。

優秀團隊

七年前，我接掌香港生產力促進局，帶領這家工業支援機構履行其使命。

一直以來，我非常欣賞本局卓越的跨領域專業團隊及其專業精神，使生產力局成為備受業界信賴的合作伙伴。

TecONE

A joint initiative by HKPC and the Hong Kong Science and Technology Parks Corporation (HKSTPC), TecONE provides advisory services on funding and other support programmes to SME technology startups. In the year under review, TecONE handled 1,077 enquiries and initiated 429 referrals to different parties. TecONE refers technology SMEs to potential collaborators and service providers to receive the best support. Since its launch in July 2014, TecONE has contributed funding of more than HK\$33 million to technology companies.

A Great Team

Seven years ago, I took up the helm at HKPC to steer this industry support organisation and ensure it continued to achieve its mission.

In my time at HKPC I have always been impressed by the strength of its exceptional team of multi-disciplinary experts and the professionalism they show in making HKPC one of industry's most trusted partners.

在任期間，我致力革新本局的業務策略，擴大服務平台，以應對業界瞬息萬變的訴求。我更致力提升生產力局的品牌形象，使我們的服務和創新方案不會不見經傳，而是廣為業界和市民認識。我更推行一系列內部改革，以建立更加穩健的公司管治架構，令人力資源管理制度與時共進，滿足持份者日益殷切的期望，吸引頂尖人才加入我們的行列。

我很榮幸能成為這優秀團隊的一分子，完成多個極富挑戰和意義重大的項目。我未敢說已經大功告成，但憑藉堅實的業務基礎和革新的策略，深信生產力局將繼續成為香港業界信賴的合作伙伴，不斷提升企業的能力，面對營商環境轉變的挑戰。

我衷心感謝理事會所有成員的不懈支持，更感謝三位理事會主席陳鎮仁博士、已故劉展灝先生，以及林宣武先生不吝指導。

最後，我要感謝生產力局全體員工多年來與我同心協力，只要大家繼續攜手共進，必可再創佳績！

總裁

麥鄧碧儀, MH, JP

During my tenure, I have focused on renewing our strategy and expanding our service platforms for addressing the changing needs of the industry. I also spared no effort to refresh HKPC's own brand image such that our services and innovative solutions are not "hidden gems" and are continually showcased to our industry stakeholders and the general public. A series of internal reforms was undertaken with a view to build a more robust corporate governance structure and modernise the human resources management system to help meet the ever-increasing expectations of stakeholders and attract top-notch talents into the organisation.

It has been an amazing privilege to be part of such a great team and be involved in so many challenging yet meaningful projects. I would not dare to say that I have accomplished everything I set out to achieve, but with a solid business foundation and a renewed strategy in place, I am fully confident that HKPC will continue to be the trusted solution partner of Hong Kong industry, energising enterprises with new capabilities to keep in step with the ever-changing business environment.

I would like to convey my heartfelt thanks to all Council Members for their unrelenting support. I am also indebted to three Council Chairmen, Mr Clement Chen, the late Mr Stanley Lau and Mr Willy Lin, for their valuable guidance. Last but not least, I would like to thank the staff of HKPC for their dedicated and concerted effort. With every one of us moving forward together, I am sure that success will take care of itself.

Agnes Mak, MH, JP

Executive Director

年度剪影 YEAR IN PICTURES

在金屬3D打印、電動車充電技術、綠色漂染工藝及醫療科技領域的四項應用研發項目，於「第44屆日內瓦國際發明展」榮獲1金2銀1銅四個殊榮。 HKPC's applied R&D in the realm of metal 3D printing, electric vehicle charging, green textile processing, as well as medical device technologies won four awards in the 44th International Exhibition of Inventions Geneva.



連續四年與香港提升快樂指數基金合辦「開心工作間」推廣計劃。 Organised the "Happiness-at-Work Promotional Scheme" with the Promoting Happiness Index Foundation for the fourth consecutive year.

APR
四月

2016



公布2016年第二季「渣打香港中小企領先營商指數」。 Announced the Standard Chartered Hong Kong SME Leading Business Index for the second quarter of 2016.



生產力局網站榮獲由政府資訊科技總監辦公室與平等機會委員會合辦「無障礙網頁嘉許計劃」金獎（網站組別）。 The HKPC website was granted the Gold Award (Website Stream) in the Web Accessibility Recognition Scheme jointly organised by the Office of the Government Chief Information Officer and the Equal Opportunities Commission.



舉辦「HKPC集思匯」，並以「工業4.0-資訊科技界的新機遇」為題，探討資訊科技業為不同行業提供支援「工業4.0」的方案。 Under the theme of "i4.0 - New Opportunities for IT industry", the Hong Kong Industry Network Clusters (HK-INC) consultation session explored various IT solutions for industry.



▲舉辦「中小企資訊科技應用全接觸」研討會，加強中小企對各種資訊科技解決方案的認識。
Organised the “SME ICT Experience Day 2016” to introduce various IT solutions to SMEs.

JUN
六月
2016



▲舉辦以「E時代I生活」為題的「最新汽車市場及科技發展分享會」，探討新能源汽車科技發展及商機。
Organised the “APAS R&D Centre Showcase 2016” to introduce the latest technological developments and new business opportunities in the area of green transportation.



■香港生產力促進局主席劉展灝先生逝世。
HKPC Chairman
Mr Stanley Lau passed away.



▲舉辦「滙智營商」高峰會2016以「創新思維·數碼商機」為主題，探討如何從創新及數碼發展趨勢中把握機遇。
Organised the Wise Business Summit 2016 under the theme of “Innovation Paradigm and Digital Opportunities” to analyse macro-economic trends, and share insights on ways to grasp opportunities in evolving digital and innovation developments.



■ 舉行為期三天的「工業4.0國際會議暨智能研討會」，助香港企業掌握「工業4.0」的推行策略、最新應用技術和商機。
Organised a three-day International Conference on Industry 4.0 and Smart Seminars to enhance the local industry's understanding of the implementation strategies, latest enabling technologies and business opportunities of "Industry 4.0".

■ 舉辦一系列智慧城市培訓課程，首個以「智慧數據 智慧政府」為主題。
Launched a Smart City training series with the debut event, "Smart Data, Smart Government - Fostering a Smart City Model in Hong Kong".

JUL
七月

2016



■ 舉辦「2016下半年經濟前瞻研討會」，協助中小企掌握經濟走勢，部署營商策略。
Organised the "SME Fund Day 2016" to provide updates on economic trends for the second half of the year to help SMEs' business planning.



■ 與天寶集團簽署合作項目，協助該集團在惠州推行智能製造，以配合「中國製造2025」國家發展戰略。
Collaborated with Ten Pao Group, helping them to set up smart production lines in Huizhou - a step moving in line with the "Made in China 2025" national strategy.

生產品局2014/15年度年報在《2016年度國際ARC大獎》中，榮獲「非牟利機構」組別金獎及「內頁設計：政府機構及辦事處」組別銅獎。

HKPC Annual Report 2014/15 won the Gold Award in the Non-Profit Organisation category, and Bronze Award in Interior Design (Non-Profit Organisation category) in the 2016 International ARC Awards.

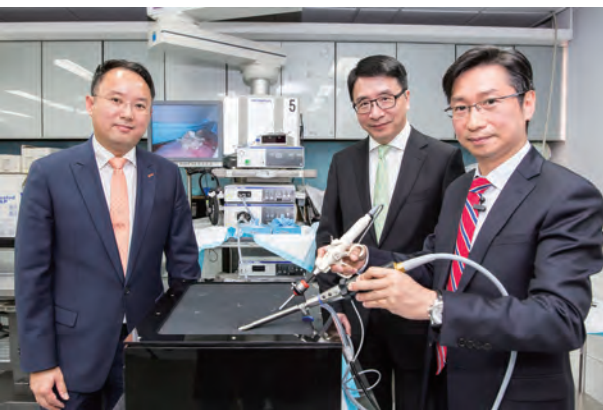


政府委任資深工業家林宣武先生出任香港生產力促進局主席。

The HKSAR Government appointed veteran industrialist Mr Willy Lin as Chairman of HKPC.

AUG
八月

2016



夥拍香港中文大學醫學院的外科團隊，成功研發全港首創吹噴式「腹腔鏡手術煙霧驅散技術」，提升手術的整體安全及效率。
Successfully developed a surgical smoke evacuation technology for laparoscopic surgery with the surgery team from the Faculty of Medicine of the Chinese University of Hong Kong. This development, a first in Hong Kong, enhances the safety and efficiency of surgical operations.



公布2016年第三季「渣打香港中小企領先營商指數」。

Announced the Standard Chartered Hong Kong SME Leading Business Index for the third quarter of 2016.

SEP
九月

2016

舉辦以「智慧交通」為主題的智慧城市培訓課程，加強各界對智慧城市之重要元素的認識，促進交流，並探索可行的合作方式。

Organised a smart city training session under the theme of "Smart Transportation" to raise public awareness about smart cities and promote potential cross-sector collaboration in the transport sector.



■「香港中學生太空搭載實驗方案設計比賽」得獎隊伍代表親臨甘肅省酒泉衛星發射中心，見證本港中學生構思的太空實驗裝置首度隨國家航天船升空的歷史時刻。

The winning school teams in the “Space Science Experiment Design Competition for Hong Kong Secondary School Students” witnessed the launch of the Shenzhou-11 manned spacecraft live at the Jiuquan Satellite Launch Centre.



■於「創新科技嘉年華」設置「生產力展館」，以「智創新世代」為主題，展示多項自行研發的先進科技及不同的應用。
A HKPC pavilion was staged at InnoCarnival 2016 with the theme of “Facing the Smart Future”.

OCT
十月

2016



■舉辦「智慧城市培訓課程」之第三單元 – 智慧環境。
Organised a smart city training session under the theme of “Smart Environment”.



■推出首屆「種籽聯盟」體驗計劃，推廣企業社會責任，促進社企和商界跨行業協作，提升人力資源及分享營商管理經驗。

Launched the “Social Enterprise Executive Development (SEED) Experiential Programme” to promote corporate social responsibilities and boost collaboration between businesses and social enterprises.

NOV
十一月

2016

■舉辦「渣打香港中小企領先營商指數」中小企智囊論壇。
Organised the “Hong Kong SME Leading Business Index - SME Conference” event.



■公布2016年第四季「渣打香港中小企領先營商指數」。
Announced the Standard Chartered Hong Kong SME Leading Business Index for the fourth quarter of 2016.



■本局智能製造及材料科技部高級顧問盧偉賢博士獲英國 Institute of Materials Finishing (IMF) 學院頒授 Canning Bi-Centenary Medal 專業獎。
HKPC Smart Manufacturing and Materials Division Senior Consultant Dr Lo Wai-yin was awarded the Canning Bi-Centenary Medal by the Institute of Materials Finishing (IMF) in the UK.



▲ 生產力局為周大福珠寶集團開發及設計的「自動物流及配貨中心」獲頒生產力及品質組別大獎。

HKPC helped Chow Tai Fook Jewellery Group Limited design and develop the "Automated Logistics and Distribution Centre", which won the Grand Award in the Productivity and Quality category of the 2016 Hong Kong Awards for Industries.



▲ 舉辦「HKPC集思匯」，探討「大數據」涉及的不同技術及元素，以及業界應如何把握發展機遇。
Organised a HK-INC consultation session to explore the future development of smart technologies among Hong Kong industries.



▲ 本局開發的「廚餘全面轉化系統」獲頒2016香港工商業獎設備及機器設計優異證書。

The FTR Food Waste Total Recycling System developed by HKPC received a Certificate of Merit in the 2016 Hong Kong Awards for Industries: Equipment and Machinery Design category.



▲ 舉辦「HKPC集思匯」，探討智能科技在香港工商業的未來發展。
Organised the HK-INC consultation session to explore Big Data and its corresponding technologies and impact on industry.



▲ 舉辦「第七屆香港傑出企業公民獎」表揚企業及團體履行及推廣企業社會責任的傑出表現。
Organised "The 7th Hong Kong Outstanding Corporate Citizenship Awards Presentation Ceremony" to recognise organisations and teams showing outstanding achievements in the implementation and promotion of corporate social responsibility.

▲ 與香港工業總會和珠三角工業協會在深圳舉行第十五屆「香港珠三角工商界合作交流會」。
Organised the 15th Hong Kong-PRD industry networking event in Shenzhen with the Federation of Hong Kong Industries and the PRD Council.





舉辦「魅力維港耀全城」全港中學生3D打印設計比賽，推廣3D打印技術在教學上的應用。
Launched a 3D printing design competition for secondary school students to promote the wider use of 3D printing in education.

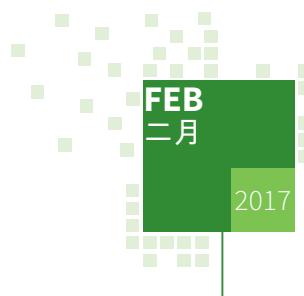


JAN
一月
2017

舉辦「HKPC集思匯」，探討業界應如何把握車聯網技術發展及市場開發的機遇。
Convened the HK-INC consultation session to explore ways for Hong Kong companies to seize new market opportunities in Internet of Vehicles (IOV) technology development.



公布2017年第一季「渣打香港中小企領先營商指數」。
Announced the Standard Chartered Hong Kong SME Leading Business Index for the first quarter of 2017.



為慶祝金禧，生產力局以「同行五十載 智慧創未來」為主題，開展一系列慶祝活動。
To mark its golden jubilee, HKPC unveiled its 50th anniversary commemorative programme under the theme of "Partnering for a Smart Future".



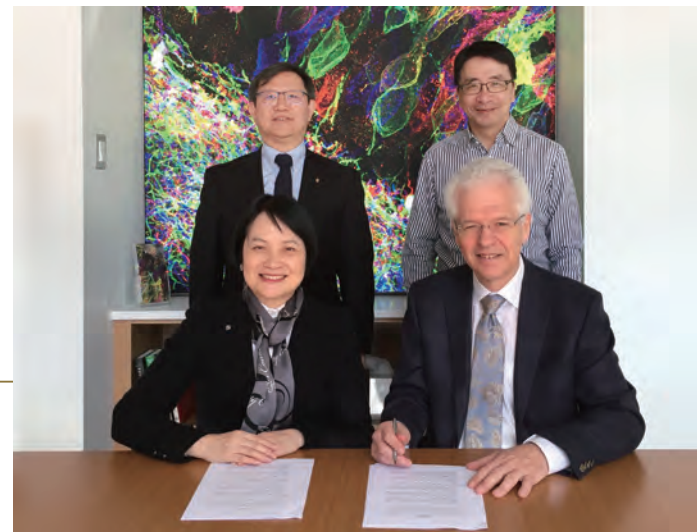
■ 製造科技業(模具、金屬及塑膠)的「過往資歷認可」機制正式推出，生產力局擔任評估機構。
Launch of the “Recognition of Prior Learning” mechanism for the manufacturing technology (tooling, metals and plastics) industry to enable practitioners to receive formal recognition under the Qualifications Framework (QF) for the experience and skills they have acquired in the workplace.



MAR
三月

2017

■ 舉辦「HKPC 集思匯」，探討服務業界儲備人才以支持業務長遠發展的方法。
Convened the HK-INC consultation session to explore human capital management strategies to support the long-term development of the service industry.



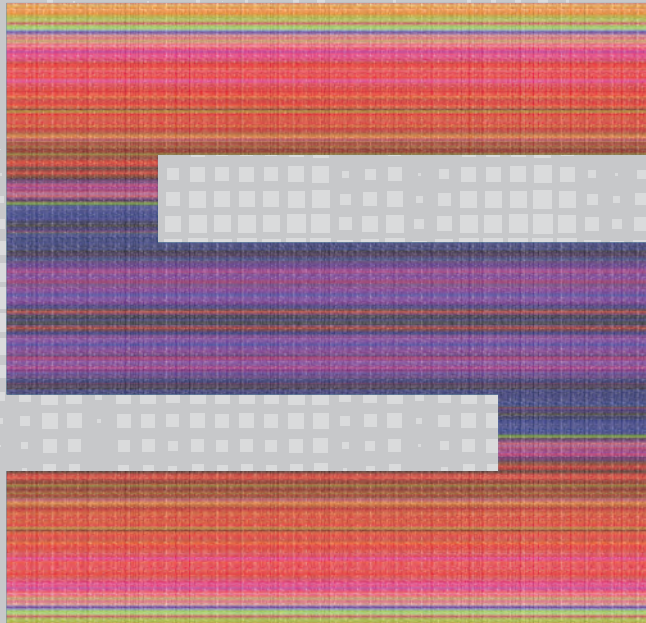
■ 麻省理工學院 MIT Hong Kong Innovation Node 宣佈落戶生產力局。
MIT Hong Kong Innovation Node announced that HKPC will be the new home of the Node.

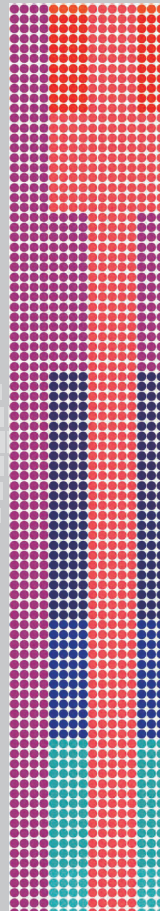


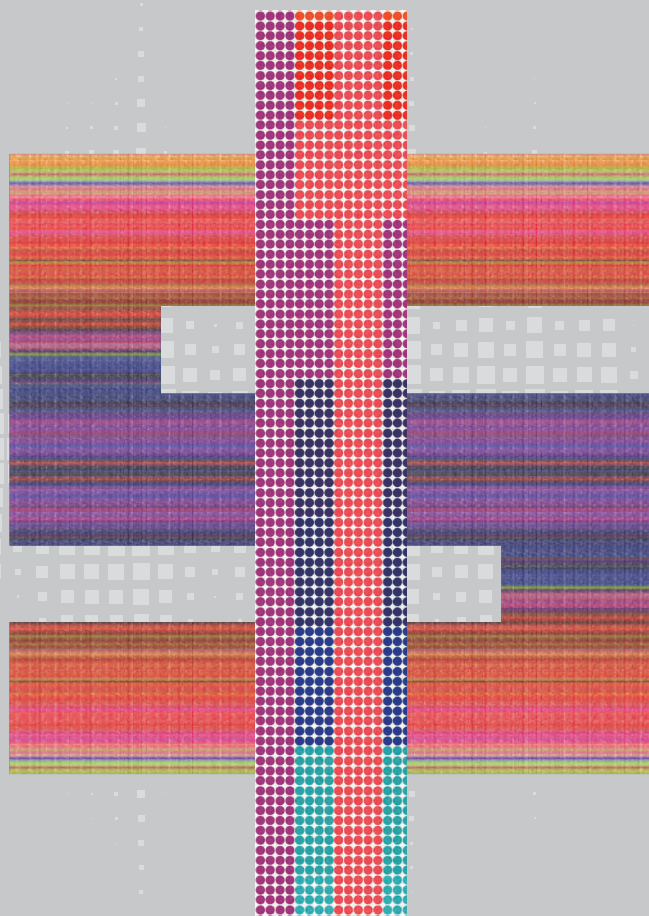
■ 生產力局五項先進應用研發獲「第45屆日內瓦國際發明展」六大獎項，創歷年最佳成績。
Five applied R&D innovations developed by HKPC won six major awards at the “45th International Exhibition of Inventions Geneva”.

SMART INDUSTRY

智能產業







智能製造
SMART MANUFACTURING



智能產品
SMART PRODUCTS



智能自動化與機器人
INTELLIGENT AUTOMATION
& ROBOTICS



先進表面處理技術
ADVANCED SURFACE TECHNOLOGY



智能物料
SMART MATERIALS



經過近年全球金融危機之後，歐美先進國家均積極尋找新的經濟增長動力，「再工業化」成為各國的重要發展策略。

美國和德國等多個發達經濟體系，紛紛推出「再工業化」計劃，以數碼化革新製造業。中國國務院亦於2015年5月公佈「中國製造2025」計劃，全面推動製造業轉型。

創新及科技可以驅動香港「再工業化」，發展適合本地進行高增值工序的高端製造業，創造更高質素的就業機會，促進智慧型經濟的發展。

Over the past decade, successive waves of financial crises have made western countries begin to reevaluate the role of the manufacturing sector in driving innovation and sustainable growth.

We have seen the launch of “re-industrialisation” initiatives in developed economies such as the US and Germany, leveraging digitalisation to revamp and revitalise their manufacturing sector. Likewise, the State Council of the People’s Republic of China announced its “Made in China 2025” strategy in May 2015 as a national initiative to transform the country’s manufacturing industry.

In Hong Kong, by applying innovation and technology to drive re-industrialisation we could develop high-end manufacturing industries and carry out high value-added production processes in the city. This would create high-quality job opportunities and promote the development of a smart economy.

智能製造
SMART MANUFACTURING

大量生產經已無法滿足消費者的個人化需求。智能科技結合傳統工業機器，讓消費者能夠自選個人化的產品功能及設計，實現大量及靈活生產個人化產品，正是第四次工業革命或「工業 4.0」主要特點，開始顛覆不同產業的生態。

Mass production can no longer satisfy the more personalised preferences of consumers. Through the integration of smart technologies and traditional industrial machineries, consumers can have the option of personalised product features, which in turn is driving the emergence of highly customised and flexible production methods. “Mass Customisation” is one of the key features of Industry 4.0, the so-called Fourth Industrial Revolution, which is set to disrupt the ecologies of various industrial sectors.

因應工業模式面臨翻天覆地的轉變，生產力局展開全面的工業 4.0 推廣活動，透過會議、工作坊、顧問服務、培訓，並成立工業支援及科技展示中心，讓業界掌握智能科技所帶來的重大變化。生產力局的「智能產業廊」將於 2017 年 8 月啟用，展示工業 4.0 的工作流程及重點技術。

- In response to this forthcoming industry paradigm-shift, HKPC launched an industry-wide campaign to help industry practitioners comprehend and get ready for the enormous changes smart manufacturing will bring through conferences, workshops, consultancy services, training and the setting up of industry support centres for technology demonstrations. HKPC's i4.0 smart demonstration factory, Smart Industry One, will commence operation in August 2017 to showcase the workflow and key technologies of i4.0.

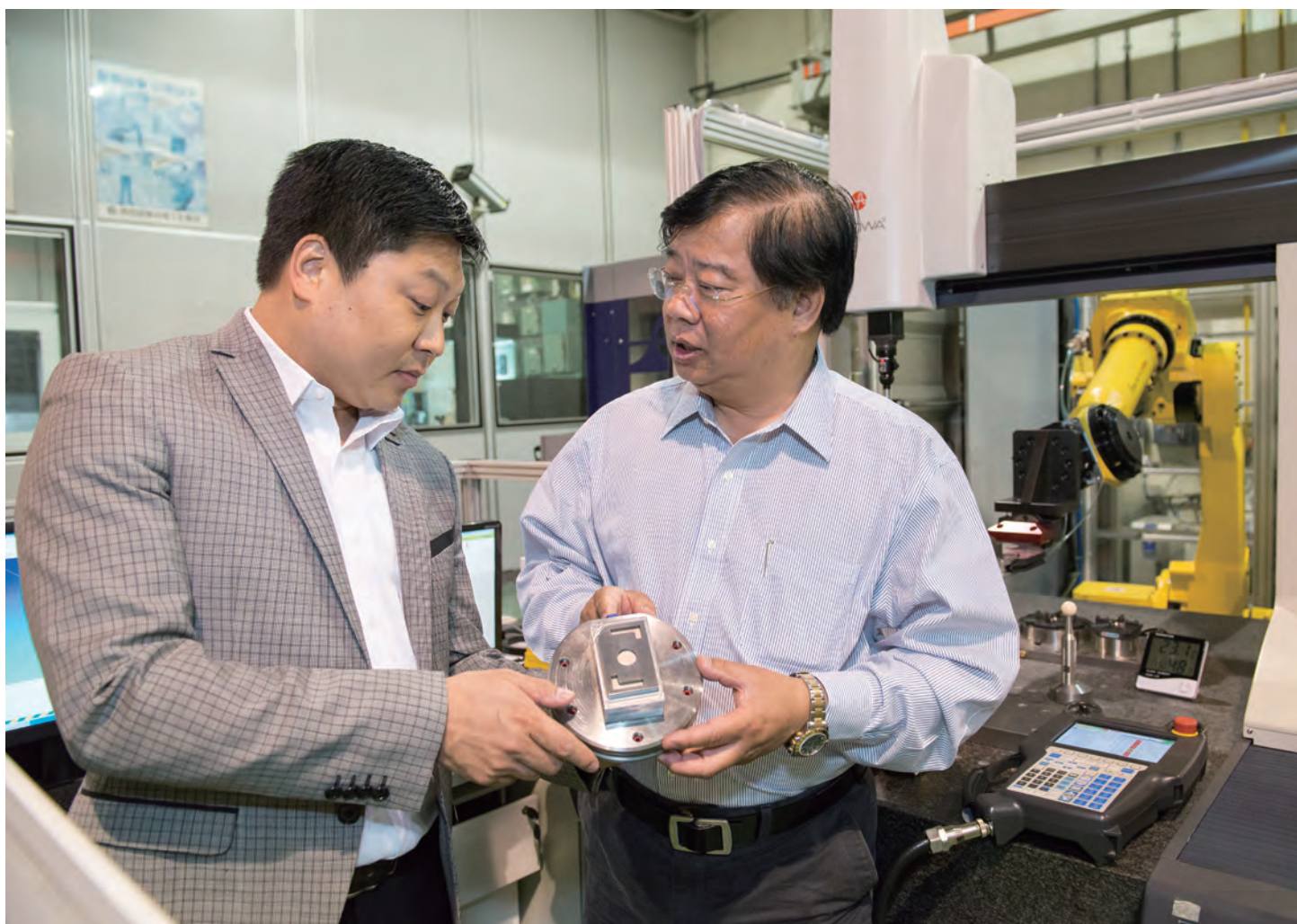
這些項目廣獲業界支持，多家廠商已委託生產力局，評估公司對工業 4.0 的準備情況。生產力局並舉辦了五次海外考察團、工業 4.0 促導員培訓課程，並編製了基礎指南。These initiatives were well received by the industry, and many companies in different manufacturing sectors commissioned HKPC to conduct i4.0 readiness assessments. Five overseas study missions, i4.0 lead facilitator training and an introductory guidebook were delivered as part of this programme.



大步邁進工業4.0
THREE STEPS TO i4.0

嘉瑞集團作為主要的金屬和塑料產品製造方案供應商之一，正昂然邁向工業4.0。自1980年成立以來，嘉瑞集團一直與生產力局緊密合作，利用生產力局多元化的顧問服務，提升其技術和管理能力。

One of the leading manufacturing solution providers of metal and plastics product, Ka Shui Group, has made great strides in progressing towards Industry 4.0 (i4.0). Since its establishment in 1980, Ka Shui has been a close partner of HKPC and has leveraged HKPC's multi-disciplinary consultancy services to enhance its technology and management competence.





「工業4.0是未來工業發展的方向。」

“i4.0 is the direction
for future development of
industry.”

李遠發先生

Mr Lee Yuen Fat

嘉瑞集團主席

Chairman, Ka Shui Group



集團決心推行工業4.0來提升競爭力和效率，遂委託生產力局為落實工業4.0作出部署，評估嘉瑞的成熟程度，從而制定將集團轉型至智能企業的策略。生產力局為嘉瑞提出了一系列重點改善建議，並策劃了多個試點項目，制訂五年策略路線圖，分三個階段升級為工業4.0。Determined to take advantage of i4.0 to enhance its competitiveness and efficiency, the group commissioned HKPC to conduct an i4.0 deployment programme to evaluate Ka Shui's maturity level or formulating a strategy to transform the group into a smart enterprise. HKPC identified key improvement areas and pilot projects for Ka Shui which formed a five-year strategic roadmap for realising i4.0 under a three-phase upgrade programme.





來自德國弗勞恩霍夫生產技術研究所的工業4.0專家，與生產力局組成專業團隊，匯集製造及物料技術、數碼化、數據分析及績效管理等多方面專業知識，為嘉瑞提供廣泛的顧問服務。

HKPC and Fraunhofer IPT of Germany have formed a team of experts from the manufacturing and material technology, digitalisation, data analytics and performance management fields to deliver a wide range of consultancy services.

第一階段 Phase One

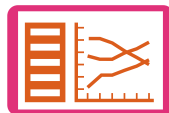


實地評估管理及技術成熟程度
Onsite evaluation of management
and technical maturity



策劃工業4.0試點項目，
制定策略路線圖
Identify i4.0 pilot projects and formulate
strategic roadmap

第二階段 Phase Two



舉辦度身設計的工業4.0培訓，並
評估應用領域
Tailor-made i4.0 training and
assessment of application areas



推行試點項目
Implement pilot projects

第三階段 Phase Three



推行工業4.0智能生產或運作，
成為認可的工業4.0工廠
Implement i4.0 smart
manufacturing/
operation and achieve i4.0 factory
recognition



綜合平台迎接工業4.0 INTEGRATED PLATFORM READY FOR i4.0

企業在過渡至工業4.0時，面對的其中一個主要障礙是，缺乏一個能夠對內、對外分享數據的綜合平台。要成功推行工業4.0，公司、管理層和員工必須掌握數據。

One of the major barriers in the transition to Industry 4.0 is the lack of an integrated platform for transferring data both within and outside the organisation. Successful implementation of i4.0 requires that the organisation, its management and workforce should all be data-focused.



「生產力局協助我們引入的新系統，為工業4.0作好準備。」

“The new system, introduced through HKPC, is timely preparation for Industry 4.0.”

陳大強先生

Mr David Chan

藍盒集團主席兼行政總裁

Chairman and CEO, Blue Box





1952年成立的藍盒集團(藍盒)，是本港著名的玩具生產及品牌商，近年致力發展旗下的嬰幼兒玩具品牌。

Established in 1952, Blue Box Holdings Limited (Blue Box) is a well-known toy manufacturer in Hong Kong. In recent years, the company has focused on developing its own brand of infant toys.

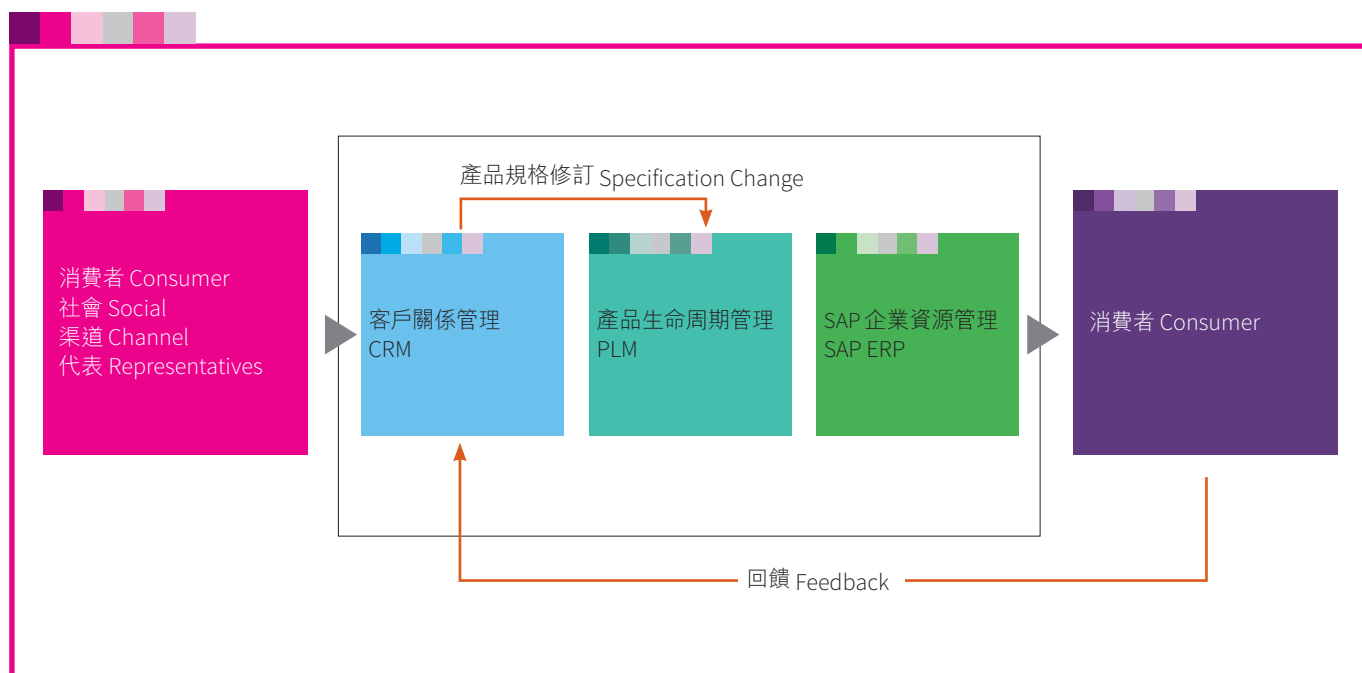
作為品牌商，藍盒須了解產品從開發到生產每個步驟的數據。加上現今客戶的定單單頭細，種類龐雜，所以更要清楚掌握物料庫存等資料，以便隨時調整工廠的生產模式，配合突變的需求。

As a brand owner, Blue Box must master the data related to products in every single step of production - from product development through to manufacturing. Also, as small orders with huge product varieties are common now, the company needs to keep track of inventory and related information so that it can swiftly adjust its production in response to market changes.



藍盒委託生產力局升級和優化其企業資源管理(ERP)系統，引入綜合了產品生命周期管理(PLM)、ERP及客戶關係管理(CRM)的平台，以迎接工業4.0。利用新系統，公司可以從單一的資料來源，掌握由產品開發、製造至分銷的實際情況。

Blue Box commissioned HKPC to upgrade and optimise its Enterprise Resource Planning (ERP) system by introducing an integrated Product Lifecycle Management (PLM), ERP and Customer Relationship Management (CRM) platforms to prepare for Industry 4.0. With the system in place, the company is now able to achieve a single source of truth with consolidated data from the product development, manufacturing and distribution stages.





要有效管理在製品庫存、品質及評估員工績效，關鍵在於廠商能否掌握產品在生產流程上的最新狀態。

Knowing how, when and where goods are produced and located is critical to manufacturers wishing to effectively manage their work-in-progress inventory and quality issues, and measure workers' performance.

生產力效益 Productivity Enhancements

- 節省數據收集和輸入的人力成本
- 根據工人的表現準確計算工資
- 提高整體設備效能
- Save manpower cost on data collection and input
- Accurately calculate wages according to workers' performance
- Improving Overall Equipment Effectiveness (OEE)

在工業4.0的大趨勢之下，許多企業都期望提升實時分析和管理能力，但大部份仍然以傳統人手方式，收集產量數據，以更新其企業資源管理(ERP)系統。

Many enterprises hope to enhance their capabilities for real time analytics and management under the mega trend of i4.0. Yet many of them are still adopting a conventional manual approach to collect production output data for updating their ERP system.

因應生產狀態缺乏透明度的問題，生產力局為一家胸杯生產商開發了一套專用的產量數據收集系統，有效取得在製品的產量數據。

In response to the problem of a lack of visibility on the production status, HKPC developed a customised real-time production capturing system for a bra cup manufacturer. The system is able to capture work-in-progress output data efficiently.



企業資源
ERP



實時數據收集
Real Time Data Capture

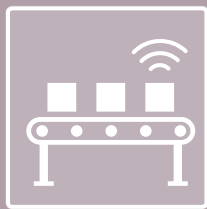


在製品
Work in Progress



產出
Production Output

智能產品 SMART PRODUCTS



智能產業革命讓企業為顧客締造更獨特及更有價值的體驗。例如3D打印等增材式製造技術，讓業界能有效提供高度個人化的產品及消費過程，革新了產品設計、製造及銷售流程。未來，產品將整合智能元素及聯網功能，所產生的數據將可用於發展嶄新的服務，開拓商機。

The smart manufacturing revolution is unleashing endless opportunities for companies to engage their customers in a more effective and value-adding manner. Additive manufacturing technologies, such as 3D printing, enable companies to offer personalised customer experiences and are changing how products are designed, built and sold. The next evolution will be to embed smart components and connectivity features into products, with the product data generated being used to create new services and sources of revenue.



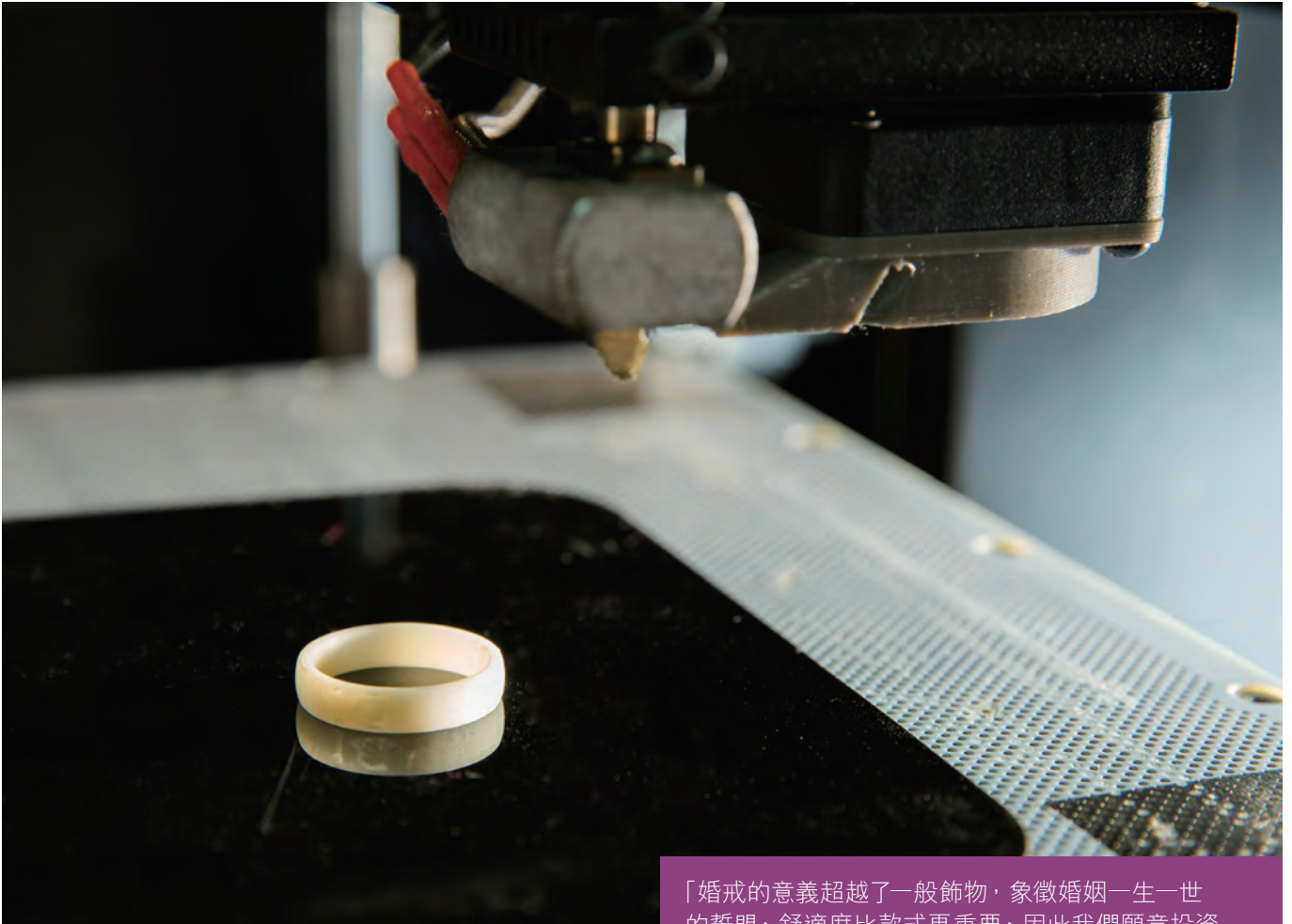


智能試戴 SMART FITTING

一直以來，試戴婚戒都是一個既複雜又費時的過程，因為手指外形因人而異，量度所得尺寸未必每一次也準確。

Trying out wedding rings used to be a complicated and time-consuming process. As people have differently shaped fingers, the measurements taken may not be accurate every time.





珠寶商 Forever Couple 與生產力局合作，開發了 Sizing Master 智能試戴方案，利用 3D 掃描技術量度手指尺寸，然後 3D 打印一枚樣辦，過程少於 10 分鐘。消費者可以帶走樣辦試戴六個月，確保尺寸舒適，才正式生產。

Jewellery store Forever Couple collaborated with HKPC to develop a smart fitting solution, "Sizing Master", that makes use of 3D scanning to measure the finger size and fabricate a 3D-printed sample in less than 10 minutes. Customer can try on the sample for up to six months to ensure a perfect fit before the ring is produced.

珠寶商利用這套智能試戴方案，提供個人化的客戶體驗，而這增值服務亦廣受客戶歡迎。

Thanks to this solution, the jewellery store is able to offer a personalised customer experience, and this value-added service has quickly gained in popularity.

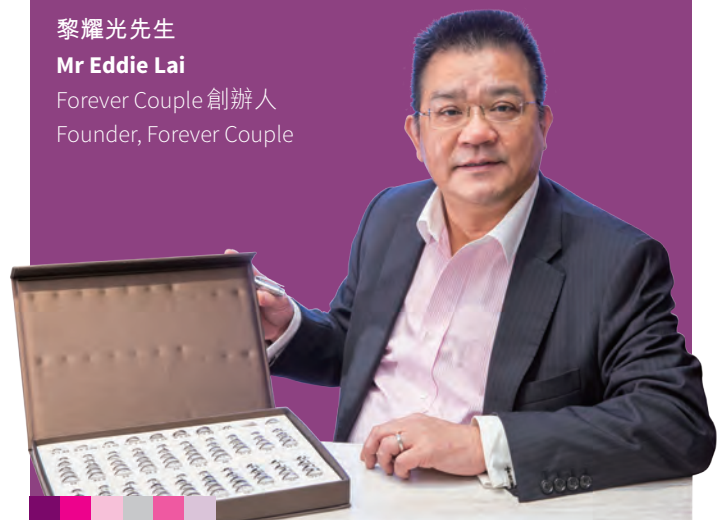
「婚戒的意義超越了一般飾物，象徵婚姻一生一世的誓盟，舒適度比款式更重要，因此我們願意投資科技，讓婚戒的試戴效果更準確，為新人打造既舒適又可穿一世的婚戒。」

"This solution is fully worth our investment. Wedding rings represent a union and commitment between spouses and will be worn for life. Through our new service, our customers can try the feel of their rings and find the most comfortable one they are looking for."

黎耀光先生

Mr Eddie Lai

Forever Couple 創辦人
Founder, Forever Couple





「馬有失蹄」也不驚 CUSTOMISED HORSESHOE

傳統的馬蹄鐵因磨損速度快而需經常更換，更換時容易弄傷馬蹄，若安裝不當更有可能令馬蹄鐵於競跑期間鬆脫釀成意外。生產力局採用「混合式金屬3D打印技術」，為馬匹度身訂造具避震功能，且易於更換的馬蹄鐵。

In addition to the problem of frequent replacement due to wearing, traditional horseshoes can hurt the horse's hoof during the fitting process and lead to accidents during races if the horseshoe is poorly fit. Made from hybrid metal 3D printing technology, this tailor-made horseshoe provides better shock absorption and is easily replaceable.



「第44屆日內瓦國際發明展」
金獎得主

Gold Medal winner in the "44th
International Exhibition of
Inventions Geneva".

有別於傳統的U型馬蹄鐵，此創新的馬蹄鐵能完全覆蓋馬蹄，加上運用高度耐磨的鈦金屬，可以減少馬蹄鐵的更換頻率，從而減低馬蹄受損的機會。

Unlike the traditional U-shaped design, this innovative horseshoe covers the entire hoof. The durable titanium element reduces the need for frequent replacement, which in turn can lower the risk of hurting the hoof.



上層軟膠，緊貼馬掌
Rubber (larger protection area,
geometrically fit, shock absorption)



中層U型金屬底座
Titanium Metal Base
(lightweight)

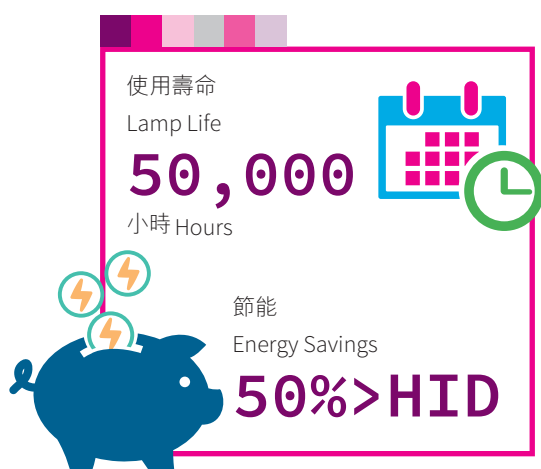
下層U型鈦金屬片，質輕耐磨可更換
Titanium (replaceable part, high
abrasion resistance, lightweight)



等離子發亮 PLASMA SHINES

目前，高強度放電燈(HID燈)主要應用於體育館、倉庫，以及需要大範圍高亮度照明的大型公共場所，但HID燈具需要一段時間預熱，重啟亦費時，而且尺寸相對較大、使用壽命較短(<10,000小時)。

Traditionally, high-intensity discharge lamps (HID lamps) are used in gymnasiums, warehouses and public facilities where a high level of illumination over a large area is required. However, the downside is that HID lamps take a long time to warm up and restart, are relatively large and suffer from a short service life (less than 10,000 hours).



等離子燈結合LED和金屬鹵素光源的優點，為高強度照明提供了更環保的方案，比HID節省了50%的能源，光源的亮度高(75,000至100,000流明)，顯色指數高達95 CRI，使用壽命長達50,000小時。

Combining the best attributes of LED and metal halide sources, plasma light offers a more environmentally friendly solution for high-intensity illumination. It uses 50% less energy than HID, has high lumens of 75,000 to 100,000 at the source, exceptional colour (rated as high as 95 CRI), and a 50,000-hour lamp life.

在創新及科技基金的資助下，生產力局與勁亮嘉科技有限公司合作，設計及製造了適合大功率應用的等離子燈原型。

Supported by the ITF, HKPC collaborated with Topanga Asia Limited to design and fabricate plasma light prototypes suitable for high power applications.

生產力局運用其多元化專業知識，包括化學、材料科學、應用物理、化學工程及機械工程等範疇，設計了高強度等離子燈的原型(功率輸入：每等離子光源750至1000伏特，光源流明：75,000至100,000流明)，並開發了一個可申請專利的諧振器，適用於高功率等離子燈。

Helped by the multi-disciplinary expertise of HKPC, covering chemistry, materials science, applied physics, chemical engineering and mechanical engineering, a prototype design for a high-intensity plasma light (power input: 750 - 1000W per plasma light source and source lumens: 75,000-100,000 lm) and a patentable resonator for high-power plasma light were developed.

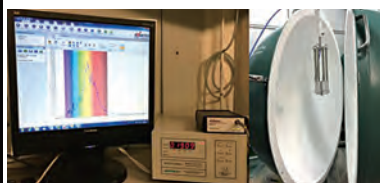
研發成果將交由業界合作伙伴商品化，以發展高增值和高流明的照明市場。

The R&D results will be commercialised by the industry partner to help it explore the high-value-added high-lumen lighting market.

等離子燈內的等離子體電弧
Plasma arc inside the Plasma Light



等離子燈原型測試
Testing the Plasma Light Prototype



等離子燈耐用測試
Long-term Testing of Plasma Lights

智能自動化與機器人 INTELLIGENT AUTOMATION AND ROBOTICS



自20世紀60年代，機器人已開始應用在工業範疇。由於物聯網(IoT)、人工智能和大數據技術急速發展，今天的機器人已更加「聰明」，不只取代人手，更能學習和自主判斷，靈活地適應智能產業時代的少量多款、大量客製化的要求。

Industrial robotics have been in use since the 1960s, but have taken a big step forward in recent years. Thanks to the advancement of the Internet of Things (IoT), artificial intelligence and big data, robotics have become intelligent, capable of learning and making judgment. Robotic solutions can now be flexibly adjusted to the customised requirements for high-mix, low-volume production runs typical of the smart industry era.





一臂之力 GIVE ME A HAND

傳統上，牛仔褲的表面加工，要用人手在布面上噴灑塗料，需聘用大量熟練工人。但是，工人長期暴露於染料、溶劑及褪色劑等有害物質，可能危害健康。

The conventional process for spraying jeans is labour intensive and requires highly skilled and experienced workers. However, workers are repeatedly exposed to hazardous substances emitted from paints, solvents and discolouration agents which can cause health problems in the long term.

此項目在第45屆「日內瓦國際發明展」獲得銀獎。

The project was awarded a Silver medal in the “45th International Exhibition of Inventions of Geneva”.



生產力局與香港紡織及成衣研發中心合作，並獲專門供應製衣設備的藝誠(余氏)發展有限公司資助，開發了專用於牛仔褲表面裝飾的快速學習自動噴塗系統，為成衣製造業界提供創新的機械人解決方案。

In collaboration with HKRITA and sponsored by Ngai Shing Development Limited, a company specialising in garment manufacturing machinery, HKPC developed a unique quick-learning robotics spraying system for automating this labour-intensive process.

傳統機器人的學習過程，需要熟練操作員分配坐標點以產生加工路徑，即使是富經驗的工程師，都需要數小時或數天的時間，設置一條簡單的路徑。

Traditional robot learning requires skilled operators to assign coordinate points to generate the working path. Even for highly trained engineers, it would take hours or days to set up just a simple path for the robots.

生產力局開發的系統，讓操作人員只須使用特製噴槍如常地進行一次噴塗，系統便會自動透過不同的傳感器，捕捉操作人員的手部動作，記錄特製噴槍的移動軌迹和噴塗參數。透過特設的電腦程式，在數據輸出到自動噴塗系統前，操作人員可檢視和修改噴塗路徑。系統加入創新的「手工製作」功能，模仿人手生產的噴塗效果。此外，項目亦開發了六軸機器手，以類似人類手臂運動的關節，自動執行噴塗動作。

HKPC developed a unique robotic spraying gun with an array of sensors to capture the trajectory motions of manual operators and their spraying parameters. These data were then recorded in a database, with a specially developed software program allowing operators to review and modify the spraying profile in the database. This permitted pattern variation for imitating the “handmade” effect. Making use of the data and analysis, a six-axis manipulator will perform the spraying action automatically.

外觀耀目的牛仔褲產品，較普通牛仔褲的利潤更高。隨著市場趨勢逐步走向客製化產品，製造商必須在表面裝飾方面提供小批量、多款式的選擇，此解決方案為製造商開闢新大規模客製化市場，提供高效益的自動化方案。

Denim products with astonishing visual effects can enjoy a higher profit margin than plain jeans. As the market trend is moving towards customised products, manufacturers are required to offer more design variety in terms of surface decoration, but with lower production volumes. This solution provides a cost-effective way for manufacturers to open up a new market for mass-customisation.

生產力效益

Productivity Enhancements

- 可快速、安全、具成本效益地生產個性化的牛仔褲
- 減少熟練噴塗操作員的需求
- 縮短操作員的培訓時間
- Produce customised jeans rapidly, safely and cost-effectively
- Reduce the need for skilled spraying operators
- Shorten the training time of operators



精準提升效率 PRECISION BOOSTS EFFICIENCY

隨著內地人民生活水平提升，對珠寶等貴價產品的需求大幅增加。為滿足此需求，周大福珠寶集團在內地增設銷售店，並需要快速而又準確地向不同省市提供產品，自動化物流及配貨系統提供最佳的解決方案。

The ever-increasing standard of living in the Mainland has led to increased demand for high-end products such as jewellery. To meet this demand, Chow Tai Fook Jewellery Group has opened more outlets in the Mainland, which has increased the need to deliver goods to these outlets - spanning various provinces and municipalities - more precisely and efficiently. Automation of the company's logistics and distribution process offers the best solution.

廣東順德的周大福物流配送中心支援內地零售網絡的庫存補貨，平均每天處理近六萬件產品。

Chow Tai Fook's logistics and distribution centre at Shunde, Guangdong, supports the stock replenishment of its retail network in the Mainland, handling about 60,000 items on average each day.

生產力局獲委託為中心度身訂製自動化物流及配貨系統。中心配備自動化倉儲系統，廣泛應用物聯網(IoT)和RFID技術，可追蹤每件產品的狀態和位置，進行有效的庫存監控。

HKPC was commissioned by the group to tailor-make an automated storage and distribution system. Equipped with an automated warehousing system, the logistics and distribution centre at Shunde applies IoT and item-level RFID technology to keep track of the status and location of each product for effective inventory monitoring.



周大福的廣東順德物流配送中心支援內地的補充存貨，每天平均處理約六萬件商品。

Chow Tai Fook's logistics and distribution centre at Shunde, Guangdong, supports the stock replenishment of its outlets in the Mainland, handling about 60,000 items on average each day.



周大福的「自動化物流及配貨中心」獲2016香港工商業獎之「生產力及品質大獎」，以及2016亞太資訊及通訊科技大獎（「APICTA大獎」）零售及供應鏈管理組別之優異獎。

The project won the Grand Award of the Productivity and Quality category of the 2016 Hong Kong Awards for Industries as well as the Merit Award of the Retail and Supply Chain category of the Asia Pacific ICT Alliance Awards 2016.

「生產力局所研發的系統，對集團達成精準化、數據化、自動化和智能化都有很大幫助。」
“The system HKPC developed has helped our company a lot in achieving precision, digitisation, automation and intelligent production.”



黃紹基先生
Mr Kent Wong
周大福珠寶集團有限公司
董事總經理
Managing Director
Chow Tai Fook Jewellery Group Limited

在開發過程中，項目小組克服了各種挑戰，如準確地從大量細小珠寶首飾中讀取數據。項目完成後，加強了整體庫存運輸的效率。

During development, the project team overcame various challenges, including being able to accurately read data from a large number of tiny jewellery pieces. Upon completion, the project has enhanced the overall efficiency of Chow Tai Fook's stock movements.

生產力局亦為周大福開發了自動化系統，包括23個RFID讀取密封箱、一個預上架系統和一套高智能證書存取管理機器人系統，以支援自動化物流配送中心的運作需要。

On top of providing consultancy services, HKPC developed an automated system for Chow Tai Fook, which includes 23 RFID chambers, a pre-shelving system and a highly intelligent jewellery certificate robotic system, to support the operational needs of the automated logistics and distribution centre.

生產力效益

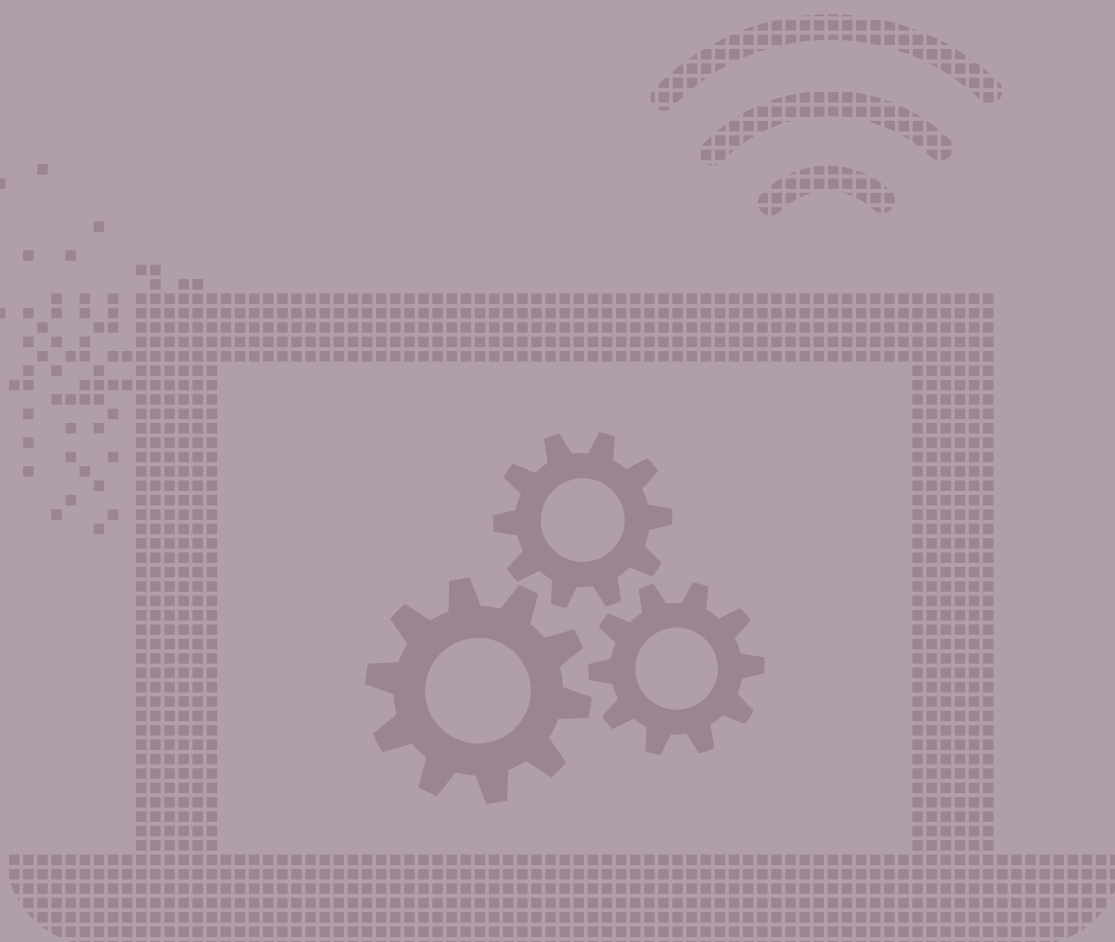
Productivity Enhancements

- 提高整體庫存運輸效率
- 精簡儲存、分揀、包裝和交貨的流程
- 提供實時安全監控
- Enhanced the overall efficiency of stock movements
- Streamlined the storing, sorting, packing and delivery processes
- Offered real-time security surveillance

先進表面處理技術
ADVANCED SURFACE TECHNOLOGY

先進表面技術將材料的性能加以改良和提升，可應對智能城市的各種挑戰。使用新型表面處理塗層的智能裝置，能夠抵禦極端環境，以及具有良好的生物兼容性，並且可在綠色運輸、可再生能源及污染控制等領域，製造節能部件。

By modifying and enhancing the performance of materials, HKPC has developed a number of advanced surface technologies to address various challenges of building a smart city. New surface coatings will make it possible to build smart devices with resistance and durability in extreme environments, promote bio-compatibility, and develop energy-efficient components for green vehicles with improved sustainable energy generation and pollution control.





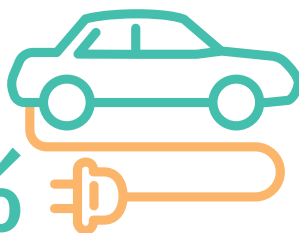
類金剛石碳納米塗層的示範設備
DLC Coating Machine for Demonstration

使用類金剛石碳(DLC) 納米塗層的活塞環
DLC-coated Piston Rings

先進表面技術的其中一個熱門應用是汽車零部件。發動機部件間的摩擦是導致汽車發動機燃料效益低和大量碳排放的常見原因之一。One of the hottest applications for advanced surface technology is in automotive parts and components. Friction between adjacent engine parts is one of the main causes of inefficient fuel consumption and carbon dioxide (CO₂) emission in automotive engines.

提升汽車發動機效率達
Automotive engine efficiency
enhanced

40%



有效解決方案是在發動機部件上使用類金剛石碳納米塗層，與傳統發動機相比，其優異的耐磨性和超低摩擦性能，可顯著提高汽車發動機的效率約40%，並減少相應的碳排放。

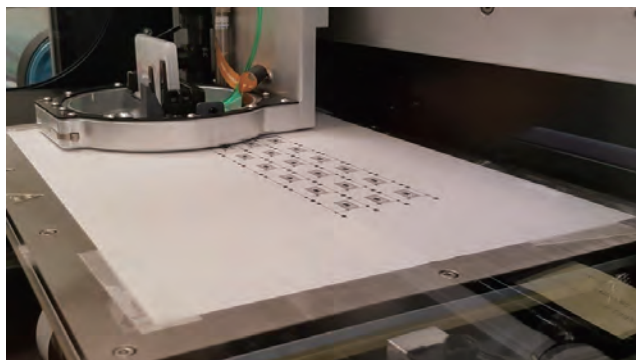
HKPC developed a highly effective solution by depositing a diamond-like carbon (DLC) coating on engine parts. The superior abrasion resistance and ultra-low friction properties of DLC can enhance the efficiency of automotive engines by up to 40% compared to conventional engines, with a corresponding reduction in carbon emissions.

在創新及科技基金的支持下，生產力局研發了一套用於類金剛石非晶碳納米塗層結構塗層的示範設備。

Supported by the ITF, HKPC developed a pilot deposition setup for a diamond-like amorphous carbon nanostructured coating.

有關設備已於設置於生產力局，展示了使用類金剛石碳納米塗層的發動機部件（例如活塞系統、曲軸、閥門系統和燃油噴射器系統）。The setup at HKPC demonstrated the deposition of this coating on engine parts such as the piston system, crankshaft, valve system, and fuel injector system.

隨著智能裝置的廣泛應用，全球微電機系統設備和傳感器市場正急速發展。消費電子、汽車和醫療應用是主要市場領域。With the widespread application of smart devices, the worldwide market for microelectromechanical systems (MEMS) devices and sensors is growing in leaps and bounds. Consumer electronics, automotive parts and medical applications are the dominant market sectors.



打印納米生物傳感器
Printing of Nanoparticle-based Biosensor

生產力局開發了多項針對不同應用的微製造工藝，包括：HKPC developed a number of micro-fabrication process for different MEMS applications, including:

- 納米酶為基礎的葡萄糖生物傳感器的絲網印刷批量製造技術；
- 微電鑄技術，用於製造低成本空心金屬微針陣列；
- 光子晶體波導，用於提升以石墨烯為基礎的紅外線傳感器的電場強度；
- 先進的防污表面處理技術，用於製造微電機系統傳感器。
- screen-printing batch fabrication technology for a nanoparticle-based enzymatic glucose biosensor;
- micro-electroforming technology for building a low-cost hollow metallic micro needle array;
- photonic crystal waveguides for boosting the electric field intensity of graphene based IR sensors;
- advanced anti-fouling surface treatment technology for manufacturing MEMS sensors.

這些新工藝能為港商提供低成本、高效益的生產方案，發展各種智能傳感器的應用，涉足高增值的產業。

These new processes will provide a cost-effective manufacturing solution for Hong Kong companies to explore this growing market and develop various applications for smart sensors in high-value-added industry sectors.

智能物料
SMART MATERIALS

智能工業革命的關鍵因素是「材料」。通過改變材料的性質，創造出各式各樣前所未有的創新產品。

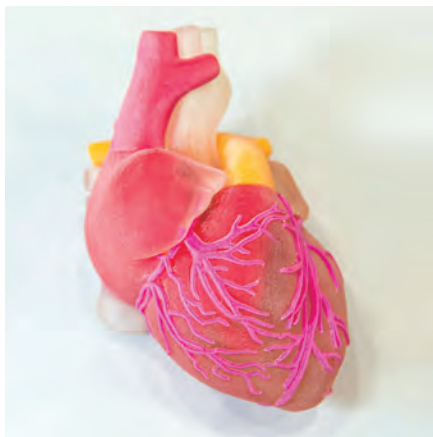
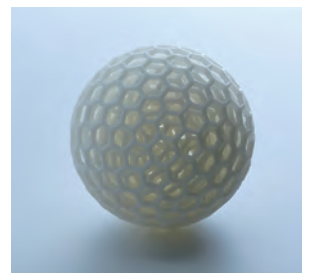
A key element of the smart industry revolution is “materials”. The development of novel and advanced materials facilitates the development of new products and services never envisioned before.





生產力局正重點研究發展本地生產3D打印先進材料的能力。例如，生產力局一直與歐洲技術合作夥伴共同開發應用於生物醫學、化學和特殊工業應用的新型陶瓷3D打印工藝。

One of the key areas HKPC is working on is the development of advanced materials for 3D printing. For example, HKPC is working with a European technology partner on developing a new ceramic 3D printing process for biomedical, chemical and special industrial applications.



生產力局亦制訂了超細金屬粉末的整體技術路線圖，以應對金屬3D打印的新行業需求。生產力局正進行一個創新及科技資助項目，研發以氣體霧化的工藝生產超細金屬粉末，並且將會開展另一個研發項目，應用於醫療植入部件的鈦金屬粉末。

HKPC also developed an overall technology roadmap for ultra-fine metal powder to cope with new industry demands for metal 3D printing. HKPC is now working on a project supported by the ITF, for developing a gas atomisation process to produce ultra-fine metal powder and another ITF R&D project for titanium powder for medical implant parts.

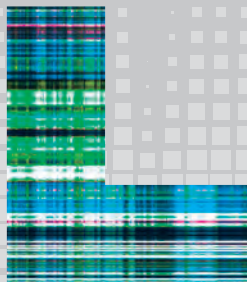
除了3D打印先進材料，生產力局亦致力開發各種碳複合材料製造技術。這些工藝能夠大規模生產輕量和高強度的碳複合材料零部件，促進本地工業開發航空、汽車工業等高端市場的產品。

In addition to the development of new materials for 3D printing, HKPC is actively working on the development of advanced carbon composite technology. The Council is developing various forms of carbon composite product manufacturing techniques for mass production of lightweight, high-strength carbon composite parts, help local industry to develop new products for aviation, the automotive industry and other high-end consumer markets.



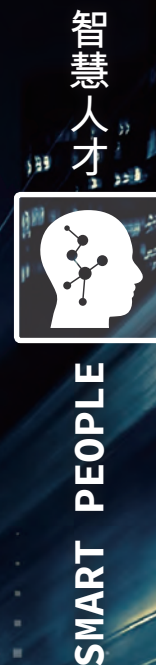
SMART CITY

智慧城市









智慧城市的重點不是科技，科技只是工具，目的是建設可持續發展及更宜居的城市。智慧城市最重要是居住其中的每一個人。除了綜合運用最佳的科技，優化城市的資源流動，智慧城市必須吸引公民參與城市發展，實現社會創新。

像世界其他大都會一樣，香港正面臨都市化挑戰，例如人口急劇老化，住房需求緊張，交通運輸擠塞，經濟缺乏新的增長動力。

政府正在研究制定香港「智慧城市發展藍圖」，其中包括直至2030年的短期、中期和長期措施，以發展香港成為智慧城市。生產力局正透過多元化的產業支援服務，包括環境管理、智能交通應用研發，資訊保安和智慧人才發展等，促進智慧城市基建的發展。

Building a smart city is not primarily about technology but rather is about building a sustainable and liveable city. Fundamentally, the smart city is about people. Besides integrating the best technologies to enhance the flow of resources in a city, the smart city is about social innovation through engaging citizens in shaping urban development.

Like other metropolises around the world, Hong Kong is facing a number of urbanisation challenges such as a rapidly ageing population, pressing demand for housing, transportation issues, and the lack of new growth engines for the economy.

The HKSAR Government is conducting a study on the formulation of a Smart City Development Blueprint for Hong Kong, which will map out short-, medium- and long-term measures up to 2030 to develop Hong Kong into a smart city. HKPC is facilitating the development of essential building blocks for a smart city through its multi-faceted industry support services — from environmental management and applied R&D on smart mobility to IT security and smart talent development.

智慧環境
SMART ENVIRONMENT

智慧環境旨在利用覆蓋全城的資訊及通訊科技基建，收集環境數據，有效控制污染、減碳和管理廢物，推動可持續發展。

From a technological perspective, a smart environment aims to promote a more sustainable city by making use of a citywide ICT infrastructure to capture environmental data for effective pollution control, carbon reduction and waste management.

全球城市正試驗使用低成本的环境感測裝置，測量空氣污染，以提高公眾對環境問題的認識和參與，推動文化變革。

Cities worldwide are experimenting with the use of low-cost environmental monitoring devices to measure air pollution so as to raise public awareness of and participation in addressing the environmental problems, which in turn will drive cultural changes.



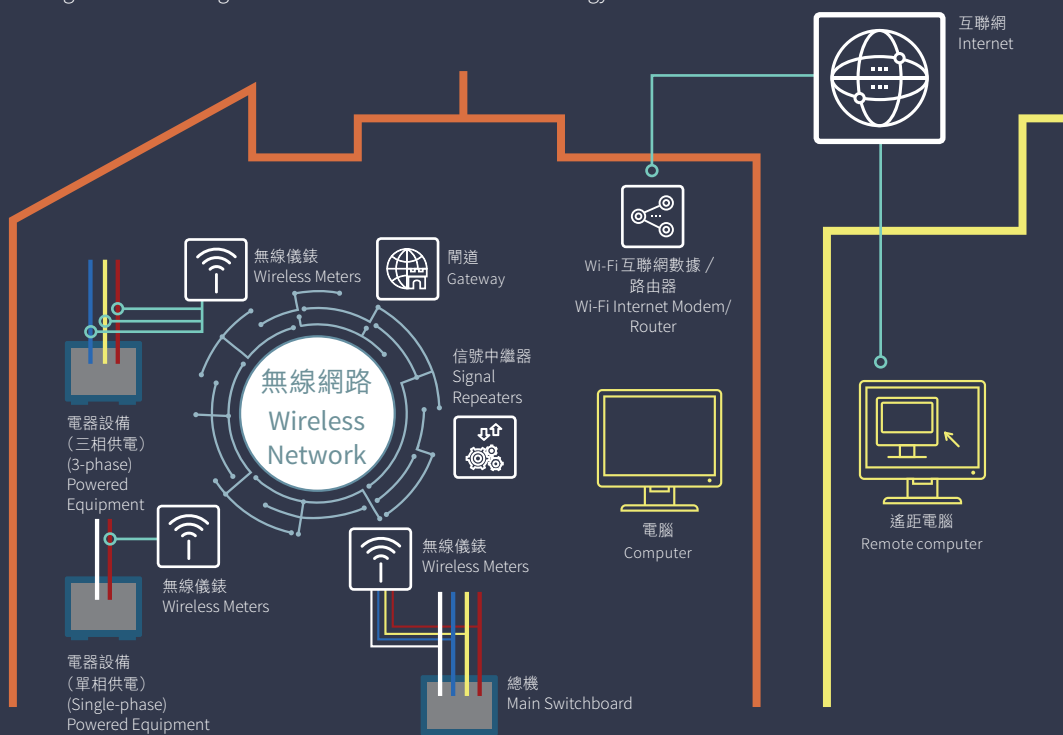
物聯網智能節能 IoT SAVES ON BILLS

工廠或建築物業主經常遇到這些問題：已試用了不少節能技術，還可以怎樣減少能源支出？如何驗證節能裝置的成效？

Your company has already adopted nearly all kinds of energy-saving technologies, so is there anything else that can be done to reduce energy bills? How can the contribution of these energy saving devices be validated? These are common questions being asked by many factory or building facility owners.

答案之一就是物聯網，它能實時監控建築物和生產設施，提供適切的資訊，有效節省能源成本。

IoT is ushering in a new era of real-time monitoring of buildings and production facilities that provide intelligence for making better decisions on how to save energy costs.



生產力局為東莞金杯印刷有限公司設計了智慧儀錶網絡，建立無線工廠實時能源管理系統。該系統持續記錄工廠主要設備的能源消耗數據，並通過 Zigbee 通信技術，將數據傳輸到伺服器進行綜合數據分析。

To achieve that, HKPC designed a network of smart meters for a printing company in Dongguan, Golden Cup Printing (Dongguan) Co., Ltd, and implemented a real-time wireless Factory Energy Management System (FEMS). FEMS continuously logs energy-consumption data from major items of equipment in the factory and transmits this through the Zigbee communication protocol to a server for comprehensive data analysis.

管理人員可以經互聯網存取系統數據，遙距監察能源使用狀況。

The FEMS data can also be accessed through the internet to enable on-line monitoring of energy data from remote sites.

系統可在數據分析過程中，建立能源消耗模式，制訂有關生產的能源指標；並可立即糾正浪費能源的不當操作，發掘更多節能範疇，評估各種生產過程、機械、產品及工場的能源消耗趨勢。

By analysing the data to establish energy consumption patterns and setting up production-related energy indicators, the system enables immediate rectification of energy wastage malpractice. It also helps with the identification of various potential energy-saving areas, and benchmarking energy consumption levels of various production processes, machinery, products or workshops against historical performance.



智能燈柱 SMART POLES

新一代的無線技術，如5G和LoRa（低功耗長距離傳輸）為智慧城市的各種運作提供基礎設施。

A multitude of next-generation wireless technologies such as 5G and LoRa (Long range Low Power Wide Area Network) are providing the telecommunications infrastructure for many of the proposed features of smart cities.

配備智能技術及連接物聯網的智慧街燈，將傳感器整合實時數據，可應用在交通管理，亦可用於監測空氣污染。

Armed with smart technologies and connected through IoT, intelligent street light poles can play an important role in solving urban problems by integrating sensors with real-time data. These will also find applications in traffic management and serve as air pollution monitors.

生產力局正積極探索智能街燈的應用，近期開發了物聯網解決方案，加強街燈系統的可靠運作。

HKPC is actively exploring the application of smart street light poles and has recently developed an IoT solution to enhance the reliability of Hong Kong's street lamp system.





智能街燈系統 Smart Street Lamp System



要檢查全港路上所有街燈，一般需時多天。由生產力局開發應用 LoRa 技術的實時街燈監控系統，可即時通知保養人員修理有問題的街燈，縮短街燈故障時間。

In the past, it used to take days to inspect all street lamps on the road. Developed by HKPC, a real-time street lamp monitoring system using LoRa technology can help minimise the malfunction period of street lamps by providing the maintenance team with immediate notification of a street lamp failure.

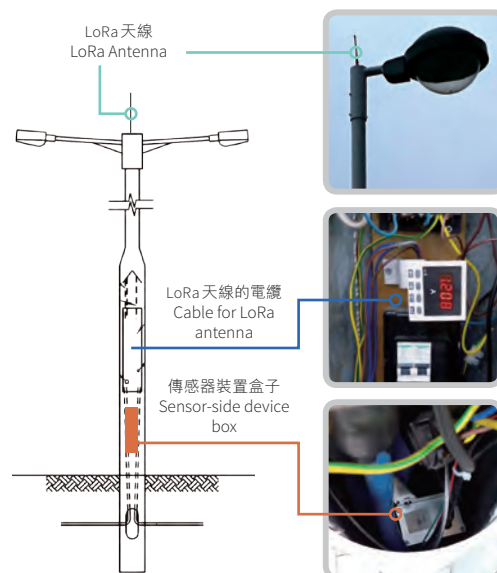
由於香港的城市密度高，生產力局特別改良 LoRa 的數據傳輸部件，令其兼任傳送器和中繼放大器，可以轉變 LoRa 信號傳送路線，覆蓋更大範圍，配合高樓雲集的城市環境。

Due to the high density urban environment in Hong Kong, HKPC specially tailored the LoRa data transmission module to work both as a transmitter and repeater that can deflect the LoRa signals to cover a wide area in a city such as Hong Kong with a lot of high-rise buildings.

該系統正裝置在 225 套街燈進行為期 12 個月的測試。除用作維修保養外，此技術亦可廣泛應用於其他物聯網領域，發展潛力龐大，例如為旅客提供智能交通網絡信息，即時監察垃圾箱廢物數量等。

The system is currently undergoing a pilot test on 225 sets of street lamps for a 12-month period. This technology has great potentials in other IoT applications beyond street lamp maintenance such as supplying traveller information for smart transportation and monitoring the level of trash in waste bins.

燈柱安裝 Installation in Lamppost



化廢為用 FROM WASTE TO RESOURCES

智能城市關乎資源的有效運用。智能城市可說是循環經濟的代表，所有資源均物盡其用，不會隨意棄置堆填區，所有資產皆可共享共用，絕不會閒置。

The concept of the smart city concerns the effective use of resources. In a way, the smart city is also a circular city in which all resources are kept at their highest possible value at all times, materials are not disposed into landfills, and assets ranging from cars to rooms can be shared effectively.

特區政府於2015年10月推出10億港元的回收基金，旨在促進資源和廢物回收及循環再造，推動回收業提升運作能力及效率，促進可持續發展。生產力局擔任回收基金的執行夥伴。

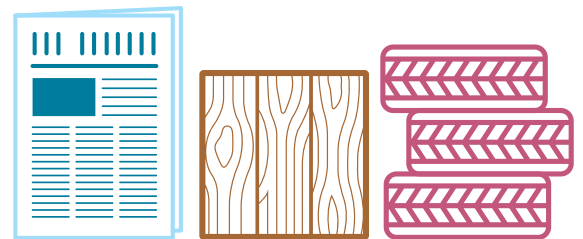
A HK\$1 billion Recycling Fund (the Fund) was launched by the Government in October 2015 to promote the recovery and recycling of resources and waste. It facilitates the recycling industry to upgrade its operational capabilities and efficiency for its sustainable development. HKPC is the secretariat of the Fund.

截至2017年3月底，回收基金諮詢委員會建議批准85宗申請，涉及總撥款約7,000萬元，其中包括23項「企業支援計劃」，55項「小型標準項目」，7項「行業支援計劃」。這些項目涉及不同類型的可回收材料，包括金屬、紙張、塑料、木材、橡膠輪胎、廚餘，以及棄置食用油等。

As of the end of March, 2017, the Advisory Committee on Recycling Fund has recommended to approve funding for 85 applications involving a total funding amount of about HK\$70 million, covering 23 Enterprise Support Programme projects, 55 Small-scale Standard Programme projects and seven Industry Support Programme projects. These applications involved different types of recyclable materials, including metals, papers, plastics, wood, rubber tyres, food waste and used cooking oil.



回收基金
Recycling Fund



委員會於2017年1月推出一系列便利新措施，受到業界的好評，使基金更有效支援回收業的發展。在新的優化措施下，「企業支援計劃」下的「小型標準項目」可透過資助採購小型設備，幫助回收者提升運營能力或效率，減少環境滋擾，並通過宣傳活動推廣行業形象。

In order to enhance its impact on the industry, a series of new facilitation measures was launched in January 2017 and has been well received by enterprises. Under the new facilitation measures, a Small-scale Standard Project under the Enterprise Support Programme will help recyclers enhance their operational capacity or efficiency and reduce environment nuisance by funding the procurement of small equipment. It will also support the promotion of recycling industry's image through promotional activities.



綠色發電 PALM POWER

一家從事污水處理廠建設及營運的香港上市公司，計劃利用生產棕櫚油產生的空果串（棕櫚果實成熟後從莖上分離留下的物料），作為其在印尼發電廠的環保燃料。

A Hong Kong listed company engaged in the construction and operation of wastewater treatment plants planned to utilise empty fruit bunch (EFB) generated from palm oil production as an environmental sustainable fuel source for its power generation plants in Indonesia.



然而，發電廠直接使用空果串發電的話，不僅影響鍋爐效能，而且影響鍋爐系統的壽命。為使空果串成為實用的生物燃料，客戶委託生產力局進行廢物轉化資源的研究，有效地回收空果串。

However, direct use of EFB for power generation plants affects not only boiler efficiency but the lifespan of the boiler systems. In order to produce usable biofuel from EFB, the client commissioned HKPC to conduct a waste-to-resource study for the recycling of EFB in Indonesia.

生產力局正進行回收空果串的研究工作，包括分析棕櫚空果串的特性，以空果串生產生物燃料和液體肥料的實驗研究，空果串大規模回收系統的初步設計，以及開展空果串回收系統的試驗。

HKPC undertook the study which included characterisation of palm EFB, laboratory investigations on biofuel and liquid fertiliser production from EFB, the preliminary design of a full-scale palm EFB recycling system, and a pilot trial once the system had been developed.



少廢多慳
WASTE LESS, SAVE MORE

都市固體廢物收費計劃將在本港實施，「按戶按袋」是住宅樓宇的主要收費模式。Municipal solid waste (MSW) charging will be launched in Hong Kong in the near future, with “Charging by designated garbage bags” being the key charging mechanism for residential buildings in the territory.



抗拉強度測試
Testing on Tensile Strength



承載測試
Loading Test

為支援都市固體廢物收費計劃的實施，政府委託生產力局檢討2014/15年度試點計劃完成後制定的指定垃圾袋設計及技術規格。

In order to support the implementation of the proposed MSW charging, HKPC was commissioned by the Government to review the preliminary designs and technical specifications of designated garbage bags formulated after the completion of a pilot scheme in 2014/15.

通過檢討本港及海外市場狀況，並於實驗室及實地測試垃圾袋原型，生產力局向特區政府提交了指定垃圾袋的設計及技術規格（例如：承載能力、抗拉強度）建議，兼顧可回收和可降解要求，並具備良好的物理性能。

Through local and overseas reviews, laboratory experiments and field trials of the prototypes, HKPC proposed a recommendation for the design and associated technical specifications (e.g. loading capacity and tensile strength) of designated garbage bags to the Government. The recommended technical specifications were developed taking into account requirements regarding the use of recycled content and degradable features without sacrificing the physical performance.

為免膠袋產品被偽造，設計中加入了防偽特徵。建議選用背心和平頭垃圾袋，容量由3至100公升等，符合不同使用者的需要。

To protect the products against forgery, anti-counterfeit features were also proposed for designated garbage bags. T-shirt and flat-top designs were proposed for the bags, which will be available in sizes ranging from three litres to 100 litres to meet the needs of different users.

生產力局亦研究及建議了指定垃圾袋的製造、庫存及分發系統方案。HKPC also studied and recommended a draft framework for the manufacturing, inventory and distribution system for designated garbage bags.



澳門推動源頭減廢 WASTE REDUCTION IN MACAU

澳門特別行政區環境保護局(以下簡稱澳門環保局)正探討實施都市固體廢物收費,推動源頭減廢及分類回收。為策劃相關計劃,澳門環保局委託生產力局進行有關澳門實施都市固體廢物收費制度的可行性研究。

The Environmental Protection Bureau (DSPA) of Macao SAR Government is exploring to implement quantity-based municipal solid waste (MSW) charging in Macao in order to promote a waste reduction at source culture as well as step up recycling efforts. To facilitate the relevant planning, the DSPA commissioned HKPC to conduct a feasibility study for the implementation of the MSW charging scheme in Macao.



這項全面研究的範圍包括:調查澳門廢物產生的現況、調查現時廢物處理流程、渠道和方法;研究其他地區推行城市固體廢物收費的經驗;評估在澳門實施都市固體廢物收費的最佳方式;以及與持份者交流會面。

HKPC is conducting a comprehensive study to assist the DSPA in exploring the implementation of MSW charging. It will cover: studying the current state of waste generation in Macao; reviewing the existing waste handling flows, channels and methods; reviewing experiences of MSW charging in other jurisdictions; formulating recommendations on the best way to implement MSW charging in Macao; and conducting a trade engagement sessions with major stakeholders.



清潔生產伙伴計劃 CLEANER PRODUCTION PARTNERSHIP PROGRAMME

清潔生產伙伴計劃於2015年3月底順利完成兩年延展期後，為延續計劃成果，進一步鼓勵港資廠商採用清潔生產措施，政府把計劃由2015年6月延長五年至2020年3月。

Upon the successful completion of a two-year extension of the Cleaner Production Partnership Programme in March 2015, and with the intention to sustain the impetus of the Programme and further encourage Hong Kong-owned factories to adopt cleaner production measures, the Government has extended the Programme from June 2015 to March 2020.

該計劃提供財務和技術支援，幫助廣東省的港資廠商採用更清潔的生產技術和作業方式，以減少能源消耗和污染物排放，有助於提高區域空氣質量。該計劃包括以下措施：

The Programme provides financial and technical support to help Hong Kong-owned factories operating in Guangdong Province to adopt cleaner production technologies and practices to reduce energy consumption and pollutant emissions, thereby helping to improve air quality in the region. The Programme comprises the following initiatives:

- 廣泛推廣清潔生產技術
- 實地評估
- 清潔生產技術的示範項目
- 機構支援項目，以鼓勵工商業協會向業界會員推廣清潔生產
- extensive technology promotion
- on-site improvement assessment
- demonstration projects for CP technologies; and
- Organisation Support Initiatives (OSI) to encourage industry and trade associations to promote cleaner production to their members.

期內批准的51個示範項目中，有23個涉及空氣污染減排技術，8個為減控污水排放，20個節能項目。

Among the 51 demonstration projects approved, 23 involved technologies to reduce air pollution, eight were on effluent control and reduction and 20 on energy-saving initiatives.

在機構支援項目活動中，期內共批准了4個項目，涉及25個針對特定行業的宣傳推廣活動。這些由行業協會主辦的活動包括工廠參觀和研討會、行業展覽，以及製作短片和實用指南，以助廣泛採用清潔生產技術和作業方式。

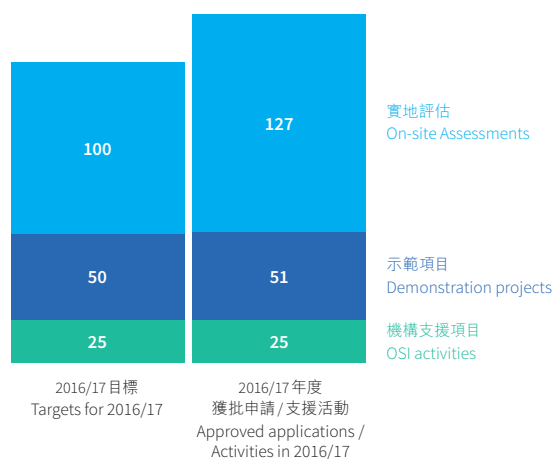
Regarding OSI activities, four projects were approved involving 25 trade-specific promotion activities in the report period. These activities, organised by trade and industry associations, included factory visits and seminars, sectoral trade exhibitions, and the production of videos and guidebooks to promote the wider adoption of CP technologies and practices.

在廣東省經濟和信息化委員會的支持下，該計劃與東莞、佛山、廣州、惠州、江門、深圳、肇慶、中山及珠海等9個珠三角城市政府有關部門建立密切的合作關係。

With the support of the Economic and Information Technology Commission of Guangdong Province (GDEIC), the Programme has established close working relationships with the relevant authorities of the municipal governments of nine PRD cities, including Dongguan, Foshan, Guangzhou, Huizhou, Jiangmen, Shenzhen, Zhaoqing, Zhongshan, and Zhuhai.

粵港雙方繼續合辦「粵港清潔生產伙伴」標誌計劃。2016年12月16日在廣州舉行「標誌計劃」頒授儀式，共有148家企業獲頒授標誌牌，以表揚他們努力落實清潔生產。

The Hong Kong-Guangdong Cleaner Production Partners Recognition Scheme continued to be jointly organised with GDEIC. An award presentation ceremony was held on 16 December 2016 in Guangzhou where a total of 148 enterprises were commended as Hong Kong-Guangdong Cleaner Production Partners to recognise their efforts in pursuing CP.





綠色一 帶一路 GREEN BELT

香港製造商正物色成本較低的地區，拓展多元化的製造業投資。作為「一帶一路倡議」的重要合作夥伴，柬埔寨是港商其中一個可考慮設立海外生產線的地點。Hong Kong manufacturers continue to look for less costly locations to help them diversify their manufacturing investment. As a pivotal partner in the Belt and Road Initiative, Cambodia offers a viable option for many Hong Kong-owned manufacturing enterprises to relocate their production.

生產力局可為製造商提供清潔生產顧問服務，以助企業符合海外製造基地的環保要求。

HKPC offers them with cleaner production consultancy services, helping them to ensure they comply with environmental requirements in their overseas manufacturing bases.

最近，一家香港公司在柬埔寨建立了新的毛皮加工廠。預計新工廠的染色生產線將產生約200立方米/日的廢水。Recently, a Hong Kong-based company built a new fur processing factory in Cambodia. It is anticipated that about 200m³/day of wastewater will be generated from the dyeing production lines in the new factory.

廢水必須先經處理，才可排放入柬埔寨的中央污水處理系統，因此客戶委託生產力局評估最佳的廢水處理方案。

As the additional wastewater has to be treated before being discharged into the centralised wastewater treatment system in Cambodia, the client commissioned HKPC to evaluate the best treatment approach for mordanting and dyeing wastewater.

根據研究，生產力局為該項目提供了一站式服務，包括詳細設計，製造和供應化學劑量和控制系統，在柬埔寨現場監督進行系統檢查和調試。

Based on the study, HKPC provided a one-stop service for the project which included detailed design; fabricating and supplying the chemical dosing and control system; site supervision in Cambodia for the system checks; and commissioning.



智能交通
SMART MOBILITY

香港各類公共交通工具，每日載客超過 1,260 萬人次。本港擁有完善的電訊基礎設施，數碼科技廣泛普及，在開拓智能運輸應用方面蘊藏巨大潛力。智能交通是智慧城市的成功關鍵，它能更有效、更環保及更安全地運送人流。Every day, about 12.6 million passenger journeys are made on the public transport system in Hong Kong. With the city's robust telecommunications infrastructure, as well as a high-adoption rate of digital technologies, there is immense potential in Hong Kong for exploring the various applications of smart mobility. This is a crucial piece in the smart city puzzle as it allows more efficient travel together with a safe and environmentally friendly flow of people in the city.

智能交通是生產力局屬下的汽車零部件研究及發展中心的重要發展藍圖。研發中心已成功開發出多種智能汽車系統，發揮防撞、輔助駕駛、切線輔助及識別行人等功能。

Smart mobility is an important development blueprint for HKPC's Automotive Parts and Accessory Systems R&D Centre (APAS). APAS has successfully developed a variety of smart vehicle systems with functions including collision avoidance, driver assistance and lane assist, and pedestrian detection, among others.



綠色運輸 GREENER TRANSPORT

電動車有助提升全球城市的智能運輸能力。多年來，汽車零部件研究及發展中心協助業界開發電動車的關鍵技術和充電基礎設施，並開發出中速、快速和流動電動車充電站。

The development of electric vehicles (EV) will contribute to enhanced smart mobility for cities around the world. Over the years, APAS has helped industries develop critical EV technologies and charging infrastructure, with collaborations on the development of medium, fast and mobile EV charging stations.



研發中心與本地汽車製造商合作開發插電式混合動力客車。與純電動客車不同，混合動力車可即時補充動力，不需要長時間停駛充電。因此，混合動力車可有效支援本地行駛繁忙路線的車隊營運商。

APAS collaborated with a local automotive manufacturer to develop a plug-in hybrid electric coach. Unlike a purely electric coach, a hybrid coach can replenish power on-the-fly and does not need to stop for lengthy periods of recharging. This hybrid vehicle can seamlessly support the busy route operations of fleet operators in Hong Kong.

與傳統柴油車相比，這輛混合動力車可節省30%或以上的燃料。它配備了鈦酸鋰電池，在安全性、電池持續時間和超快速充電方面表現優異。客車也可以切換至純電動模式，可在市中心的綠色區域行駛240公里。

The hybrid coach can achieve a 30% or better fuel saving compared to a traditional diesel coach. The coach is equipped with a lithium titanate battery which performs superbly in terms of safety, battery duration and super-quick charging. The coach can also switch to a purely electric mode and travel 240km running on electric alone in a city centre Green Zone.

這將是香港首輛本地設計和開發的12米長插電式混合動力電動車。

This will be the first 12-metre-long plug-in hybrid electric coach to be locally designed, developed and manufactured in Hong Kong.



隨時充電 CHARGING ON THE GO

目前，電動車駕駛者面對各種問題，例如充電站不足，充電車位被其它汽油車輛佔用等，駕駛者時常會擔心電池耗盡。

At present, EV drivers are faced with a lack of charging bays, or bays are often occupied by non-EVs. This will leave people feeling nervous as their EVs get closer to the end of their driving range.

生產力局開發的多制式流動充電站是理想的解決方案，以鋰電池組作為電動車電源，並配備充電連接器，支援國際上主要的電動車充電標準，並提供快速充電的解決方案。

The Multi-standard Mobilised Smart EV Charger developed by HKPC presents an ideal solution. Using a lithium battery pack as the EV power source, it is fitted with charging couplers that support major international EV charging standards, and offers a fast charging solution.

這個充電系統可為本港所有的電動車型提供服務，並為道路上電池耗盡的電動車提供緊急充電，衝破固定充電站的限制。

The charger can serve all EV models in Hong Kong. Its key feature is that it will provide emergency charging for battery-drained EVs on the road, which is a breakthrough in regard to the limitations of charging facilities at fixed locations.



香港首個多制式流動充電站獲「第44屆日內瓦國際發明展」銀獎。
Hong Kong's first Multi-standard Mobilised Smart EV Charger won a Silver medal at the "44th International Exhibition of Inventions Geneva".





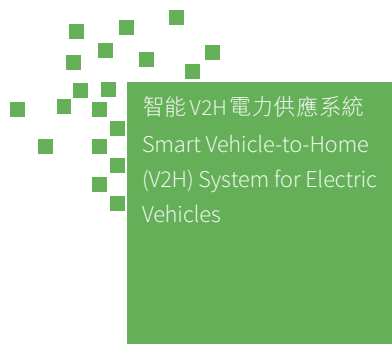
電動車結合智能電網 ELECTRIC VEHICLE TO EVERYTHING

電動汽車結合智能電網，可在智慧城市發揮重大作用。電動車可以成為流動儲能設備，為家居或電網供電。

Though initially they seem to be unrelated, EV and the so-called smart grid (SG) can together play a key role in the smart city initiative. This is because EVs can actually act as a means of mobile energy storage that supplies electricity back to the household or power grid.

舉例說，當停電或電網負載過重，電力公司能夠從電動汽車中取得電力供應。在客戶方面，人們可以在低電價的非用電高峰時段為電動車充電。到繁忙時段，人們可以將電力賣回電網，以便舒緩高峰時段用电量高的情況。

For instance, when there are power outages or when the power grid is heavily loaded, the power utility can draw a power supply from a population of EVs. On the customer side, people can get their EVs charged during non-peak hours when the tariff is low and then resell electricity back to the grid when tariff is high during peak hours. This helps maintain the power supply, particularly during peak load times.



各種「車對電網」(V2G) 和「車對住家」(V2H) 標準開始出現，汽車零部件研究及發展中心將開發符合 EVPOSSA 的 EVPS-002 V2H 和 EVPS-004 V2L(車對負載) 標準的智能 V2H 系統。這些標準已獲日本汽車廠採用。

Various Vehicle-to-Grid (V2G) and Vehicle-to-Home (V2H) standards have emerged, HKPC's APAS developed a smart V2H system in compliance with EVPOSSA's EVPS-002 V2H and EVPS-004 V2L (Vehicle-to-Load) standards. These standards are adopted by Japanese automotive OEMs and deployed in Japan.

研發成果將電動車轉變為家庭或電網的備用電源，並且帶領傳統汽車製造商和汽車零部件製造商進入V2H市場。The R&D result could transform EVs into a standby power source for the home or power grid. It will also enable traditional car and component manufacturers to step into the V2H market.



智慧生活
SMART LIVING

智慧生活是智慧城市的核心概念，務求以創新科技改善港人的日常生活，締造更幸福便利、更健康安全和更快樂的社會。

Smart living is one of the key elements of the smart city as it seeks to enhance the daily living of Hong Kong residents by improving their general wellbeing and health, creating a safer, more secure, accessible and happier society through innovative tools and technologies.





無線生活 LIVING WITHOUT WIRES

無線網絡支援重要的資訊及通訊科技基建，為智慧城市打穩基礎。現代生活及經濟各個範疇，早已離不開無線網絡。近年，市場湧現大量物聯網應用，附有無線連接功能的設備數以十億計。

Wireless networks support the vital ICT infrastructure that underpins smart cities. Many aspects of our lives and economies have already become fundamentally dependent on wireless networks. This trend is exemplified by the massive application of IoT, with billions of devices featuring wireless connectivity.

電磁環境日趨複雜，人們越來越關注長時間接觸電磁場（EMF）對健康的潛在影響。與此同時，正確設計及採用無線網絡和設備也相當重要，以確保城市內無數智能設備的電磁兼容性。

In view of the increasingly crowded electromagnetic environment, there is rising concern around the potential health risks resulting from prolonged exposure to electromagnetic fields (EMF). At the same time, the proper design and deployment of wireless networks and devices is vital to ensure the electromagnetic compatibility (EMC) of countless smart devices in the city.

生產力局的無線測試中心及電磁兼容科技中心，為各種物聯網產品提供CE/FCC測試，包括：智能城市的感應器和促動器、智能家庭電器、資訊科技設備及智能穿戴設備。中心配備先進的設備，滿足最新無線監管條例的嚴格測試要求。

HKPC's Wireless Testing Centre and Electromagnetic Compatibility (EMC) Centre offer CE/FCC testing on various IoT products including smart city sensors and actuators, smart home appliances, information technology equipment and smart wearables. Both centres are equipped with advanced equipment to fulfil the stringent requirements of wireless regulatory testing.

生產力局的專家也可根據國際標準的技術要求，進行現場電磁評估。

HKPC's experts also conduct on-site electromagnetic assessments according to the technical requirements of international standards.

一家本地企業關注到，辦公室內無線電通訊系統及Wi-Fi系統所發出的電磁輻射，可能構成安全隱患，因此委託生產力局的電磁兼容科技中心，在辦公室範圍進行現場電磁評估，以驗證是否符合國際非電離輻射防護委員會（ICNIRP）有關人類接觸電場、磁場、電磁場的安全指引。

A local enterprise raised a safety concern about electromagnetic radiation emitted by the radio communication system and Wi-Fi system installed at its office. HKPC's EMC Centre was appointed by the client to conduct an on-site electromagnetic assessment of the office area to verify that the business complied with International Commission on Non-Ionising Radiation Protection (ICNIRP) guidelines for the protection of humans exposed to electric, magnetic, and electromagnetic fields.



高壓殺菌 食安心 PRESSURE FOR SAFER FOOD

食品品質和安全備受消費者關注。如何以安全有效的方法殺菌，延長包裝食品的保質期，一直是食品製造商關心的課題。生產力局開發了一套「食品高壓處理系統」，能夠在常溫下利用超高壓殺菌，保障食品安全及保存食品營養。

Food quality and safety are key concerns among consumers today. Food safety in particular is always a top priority. Finding a safe and effective method to sterilise and extend the shelf life of packaged food is a major concern for food manufacturers. To meet the ever-increasing demands regarding food safety, HKPC developed a High Pressure Food Processing System that utilises ultra-high pressure at room temperature for sterilisation, ensuring food safety and preserving nutrition in the food.

「高壓處理」是應用於包裝食品的冷加工殺菌技術，在常溫之下利用超高壓力(300至600Mpa)把包裝食品加壓，破壞微生物的細胞膜，令食品裡面的細菌死亡或失去活性，達到殺菌或抑制生長的效果。由於過程中食品沒有經過加熱，因此可減少食品質素下降或營養流失，保持原有的營養價值和味道。

High-pressure processing is a cold sterilisation technology for packaged food. Applying ultra-high pressure (300 to 600 MPa) to packaged food at room temperature kills bacteria in the food for sterilisation or growth prevention. The absence of reheating helps to minimise any loss in both food quality and nutrition, preserving the original nutritional values and taste of the food.

這技術的另一個好處是，延長食品的貨架期，有助降低食品製造商的營運風險，以及減少使用防腐劑，既迎合消費者對健康飲食的追求，也符合歐盟食品「潔淨標籤」(Clean Label)的市場趨勢。使用新方法處理一公升的果汁，成本不超過港幣一元，比傳統加熱殺菌可節省約20。

Another benefit of the technology is that it can extend the food's shelf life, lessening operational risks for food manufacturers and reducing the need for preservatives. In addition to meeting the market trend for healthier eating, this is also in line with the European Union's Clean Label movement for food. The cost of processing one litre of fruit juice is less than HK\$1, which is about 20% cheaper than thermal sterilisation.



20%

成本比加熱殺菌低
cheaper than thermal sterilisation





絕不膚淺
MORE THAN SKIN DEEP

皮膚癌是香港十大常見癌症之一，目前醫生一般依靠目測作初步檢查，但準確度僅六成。

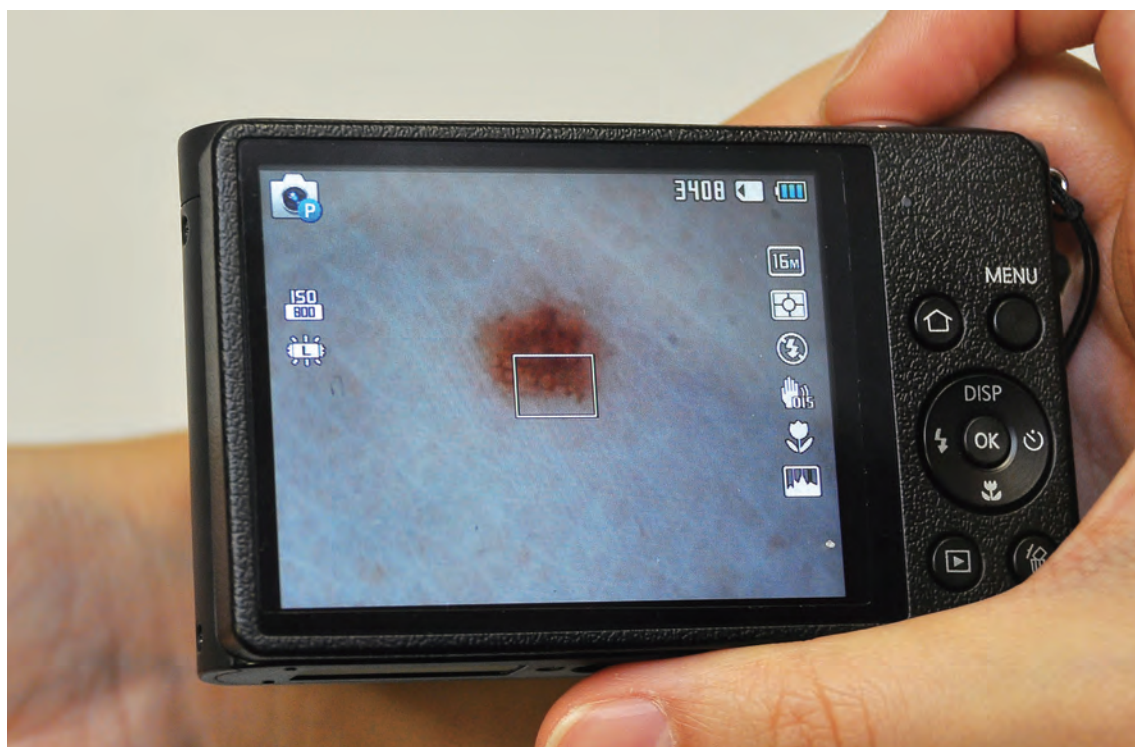
Skin cancer is one of the ten most common forms of cancer in Hong Kong. Currently, most dermatologists carry out preliminary diagnosis by visual inspection only, with a possible failure rate as high as 40%.

「醫療皮膚分析系統」榮獲
「第44屆日內瓦國際發明展」
銅獎。

The Medical Skin Analyzer won
a Bronze medal at the “44th
International Exhibition of
Inventions Geneva”.

「醫療皮膚分析系統」配備特別光學設計的電子設備，加上電腦輔助分析軟件，協助醫生診斷早期皮膚癌的症狀，令患者可以及早診治。系統已透過臨床測試，獲取超過300個皮膚患處數據，驗證了這設備切合臨床診症需要。

Comprising optical imaging hardware and analytical software and management system, the “Medical Skin Analyzer” can assist medical doctors to perform initial assessments on suspected skin lesions and diagnose skin lesion symptoms more effectively and accurately. The system has been used to conduct over 300 clinical cases for technology validation.



企業公民
CORPORATE CITIZENSHIP

為提高本地企業的企業公民意識，生產力局與公民教育委員會合作，舉辦「香港企業公民計劃」，自2010年起，一直為不同組織提供交流平台，分享他們實踐企業社會責任的經驗，促進企業界履行公民責任。

To raise the awareness of corporate citizenship among local enterprises, HKPC has collaborated with the Committee on the Promotion of Civic Education to organise the “Hong Kong Corporate Citizenship Programme” since 2010. This provides a platform for different organisations to share their best practices in corporate social responsibility (CSR) and promote a wider adoption among the business community.

53家企業、義工隊及社企在2016年12月舉行的「第七屆香港傑出企業公民獎」頒獎典禮上獲得嘉許。

Fifty-three companies, corporate volunteer teams and social enterprises with outstanding achievements in implementing and promoting CSR were recognised at “The 7th Hong Kong Outstanding Corporate Citizenship Awards Presentation Ceremony” in December 2016.

在典禮上，183家在履行社會責任或在組織及推行義工活動方面成效顯著的企業，獲頒發「嘉許標誌」；當中13間連續參與計劃五年或以上的企業，更同時獲頒今年新增的「企業公民5+」標誌。此外，本年度計劃並增設「企業公民未來先鋒運動」，旨在透過企業參觀及不同活動，向學生從小灌輸企業公民責任的訊息，日後於職場上履行公民責任，有關獎項亦於典禮上頒發。

At the ceremony, 183 companies received the “Corporate Citizenship Logo” for their notable CSR performance and volunteering work, with 13 companies that have participated in the programme for at least five consecutive years being granted the “Corporate Citizenship 5+ Logo”. Prizes were also presented to winners of the newly added “CSR Pioneer Scheme” award. Through company visits and various activities, the scheme aims to nurture students into responsible corporate citizens who can implement corporate citizenship into their workplace in the future.

為鼓勵企業和機構締造愉快的工作環境，提升員工工作的快樂水平，香港提升快樂指數基金及生產力局合作推出「開心工作間」計劃。

To encourage businesses and organisations to create a happy working environment, and to raise the happiness-at-work level of the local workforce, the Promoting Happiness Index Foundation and HKPC collaborated to launch the “Happiness-at-work Promotional Scheme”.



獲頒「開心企業」及「開心機構」標誌的企業及機構，需於過去一年就「企業關愛」、「企業智慧」、「企業韌力」和「企業動力」四大範疇當中，推行最少兩個範疇的政策和活動。

By pledging their support to building a happier workplace, participants will be awarded the Happy Company or Happy Organisation logo. Successful applicants must have implemented measures or activities in at least two out of four areas that enhance happiness at work in the past year. These include “Corporate Love”, “Corporate Insight”, “Corporate Fortitude” and “Corporate Engagement”.

透過此計劃，生產力局旨在鼓勵本地企業將「愉快工作間」概念融入企業管理，並促進工作與生活的平衡。逾280家企業及機構已獲嘉許。Through this scheme, HKPC aims to inspire local businesses to integrate the “happy workplace” concept into management practices, and promote a better work-life balance. To date, more than 280 companies and organisations have been recognised as a Happy Company/Organisation.



關愛員工 ENGAGING OUR PEOPLE

作為「開心工作間」計劃其中一個「開心機構」，生產力局積極建立愉快的工作環境，並特別關注員工的意見和內部溝通，鼓勵所有部門和職級的同事透過不同的溝通平台，表達心聲和發表意見。

HKPC is proud to be one of the “Happy Organisations”, striving to create a happy workplace and pay special attention to staff opinions by urging colleagues from all departments and ranks to express their views through various communications platforms set up to boost internal engagement.



為促進工作與生活的平衡，生產力局職員康樂會舉辦各式各樣的社交、體育及康樂活動，以提升團隊精神。

To promote a better work-life balance, the HKPC Staff Recreation Club organised a wide variety of social, sport and recreational activities aimed at enhancing the team spirit.

生產力局積極推廣企業社會責任，鼓勵員工以專業知識服務社群。生產力局義工隊於2008年成立，鼓勵員工積極參與社區服務，提升業界的企業社會責任意識。

As a strong advocate of CSR, HKPC encourages its staff to apply their professional knowledge for good causes. HKPC Volunteers was established in 2008 to encourage HKPC staff to actively participate in community services and enhance industry's overall awareness of corporate social responsibility.

借助生產力局的資源和網絡，義工隊與香港家庭福利會合作舉辦2016年「工業科技青少年體驗計劃」。為期四天的活動中，約有三十名中學生訪問本地及內地的廠商，了解不同行業的工作環境。此外，生產力局的管理層亦分享了他們的見解和職場經驗，激勵學生奮發上進。

Leveraging HKPC's resources and network, the voluntary group cooperated with the Hong Kong Family Welfare Society to organise the 2016 HKPC Teenager Experience Programme. Over four days, about 30 secondary students visited local and Mainland manufacturing companies to learn about the working environment in different industries. In addition, senior management of HKPC shared their insights and career experience to give inspiration to the students as they equip themselves for their career path ahead.

為建立管理層和員工之間的伙伴關係，生產力局鼓勵各職級員工和各部門透過定期的業務檢討會議、總裁簡報會和勞資協商會等各種溝通平台，商討業務和機構事宜。勞資協商會的成員由不同職級的同事選出，作為管理層和員工間的諮詢橋樑，提供定期和正規的溝通和協商機會。

To build a closer partnership between senior management and staff members, HKPC employees of all ranks and divisions are encouraged to discuss business and organisational issues regularly through different communication platforms such as the business review meeting, director's briefing and Joint Consultative Committee (JCC). With representatives from different ranks elected by staff members, the JCC serves as an advisory and consultative body to provide regular and formal opportunities for communication and consultation between management and employees.

智慧人才
SMART PEOPLE

城市以人為本，智慧城市的成功有賴高技術和接受良好教育的人才。生產力局促進人才的重新裝備，激發新一代對科技工程數學(STEM) 的興趣，為創意產業發掘人才，促進公私營部門合作，為香港的社會創新和可持續發展，作出重要的貢獻。

At their heart, cities are all about people — and the most fundamental step in becoming a smart city is to have a highly skilled and well-educated workforce. By facilitating the retooling of talents, inspiring an interest in STEM (Science, Technology, Engineering and Mathematics) among the new generation and grooming talents for the creative industry, HKPC has been making a solid contribution to promote collaboration across the private and public sectors to spur social innovation and sustainable development.





「種籽聯盟」推動社會創新 SEED FOR SOCIAL INNOVATION

生產力局於2016年推出「種籽聯盟」實戰式人才發展計劃，該計劃由民政事務局贊助，目的是促進社會企業與商業界的協同合作。

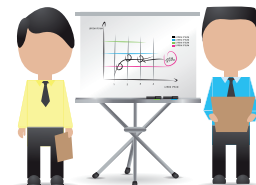
HKPC launched the “Social Enterprise Executive Development (SEED) Experiential Programme” in 2016 with sponsorship from the Home Affairs Bureau, aiming to foster a stronger synergy between social enterprises and the commercial sector.



社企、商界攜手合作
Synergy between social and commercial enterprises



由香港生產力促進局
專業團隊促導
Facilitated by HKPC consultants



共創社企、商界
協作平台
Collaboration platform for business innovation



在「種籽聯盟」計劃下，來自商界的高級管理人員會協助社企改善營運，商界亦可透過分享擴闊視野，構思創新營商意念。

Under the SEED programme, senior management from businesses assist social enterprises to improve their operations, at the same time broadening their own horizons and getting insights into new business areas.

這個為期8個月的體驗計劃，由生產力局的專業顧問促導，共創社企、商界協作平台，攜手合作完成實際的業務項目，取得具體成果。

This eight-month experiential programme was facilitated by professional consultants from HKPC to establish a co-owned platform for matching social enterprises and business corporations. The aim was to complete hands-on business collaboration projects that showed tangible results.

透過這項目，社企可以增進營商智慧、技能和管理能力，解決業務上的難題。同時，各行各業的前線和中層管理人員，亦有機會通過與社會企業的合作，提升管理能力，開拓業務創新的機會。

Through this project, social enterprises can acquire the necessary knowledge, skillsets and management capacity to tackle any business issues and problems they face. At the same time, front-line and middle level executives from various business sectors get the chance to develop their own management capacity and open up new business innovation opportunities through collaboration with social enterprises.

該計劃成功配對了六家社企及六位商界行政人員，完成了六個協作項目。

The programme successfully paired six social enterprises with executives from six different businesses, with six collaboration projects completed.





從訓練到重新裝備 FROM TRAINING TO RETOOLING

第四次工業革命的轉型技術正打破傳統的商業模式，對就業產生重大影響，並且擴大技能差距。在這種不斷變化的商業環境下，企業需要重新裝備自己，迎接挑戰，培養智慧人才，從而發展智慧城市和智慧型產業。

The transformative technologies of the Fourth Industrial Revolution are disrupting traditional business models, having a significant impact on jobs and widening skill gaps. In this constantly changing business environment, enterprises need to retool themselves to meet the challenges and cultivate smart people who can foster the development of the smart city and smart industry.



香港資歷架構是香港特別行政區政府提供支援終身學習的平台，以提升香港人口的技能及競爭力。

The Hong Kong Qualifications Framework (QF) is a HKSAR Government initiative to provide a platform to support lifelong learning, with a view to enhancing the capability and competitiveness of the workforce in Hong Kong.

生產力局已參與各種資歷架構的計劃，包括資歷架構評審，以及發展質素保證體系及第五級別學習課程。

HKPC has been involved in various QF initiatives, including QF accreditation as well as the development of a quality assurance system and learning programmes at Level 5.



資歷架構下的「過往資歷認可」機制用於確認從業員在職場上所積累的工作經驗和能力。對於學歷不高但已獲得豐富工作經驗的從業員，「過往資歷認可」機制尤其有用，使從業員減少接受重複的技能訓練。

The Recognition of Prior Learning (RPL) mechanism of the QF recognises the work experience and competencies acquired by practitioners in the workplace. This is particularly useful to those who do not have extensive academic qualifications but have acquired substantial practical experience in industry, reducing the need for them to undergo skills training again.

生產力局設立過往資歷認可評估辦公室，負責評估製造業（模具、金屬及塑膠）的從業員。評審員由生產力局和在製造技術行業擁有豐富經驗的專家組成。通過過往資歷認可的評估後，從業人員將獲得資歷證明書。

HKPC has set up the RPL Assessment Office to oversee the assessment for practitioners in the manufacturing technology (tooling, metals and plastics) industry. The assessors are made up of HKPC and industry experts possessing abundant experience in different job types in this particular sector. After passing assessment by the RPL, practitioners will receive a certificate of qualification.

根據資歷架構建立的企業學院可以更有系統地發展人力資本。資歷架構是一個七級的資歷級別制度，每個資歷被分配一個級別，以指示其在層級中的位置。同時，資歷架構為僱主和管理層提供了實用的指導，以便根據員工的能力和水平制定培訓計劃，符合企業的需求。

Corporate academies built on QF are able to support consistent and structured human capital development. QF is a seven-level hierarchy, with each qualification being assigned a level to indicate its position in the hierarchy relative to others. At the same time, QF provides a useful guide for employers and management to draw up training plans to meet the needs of organisations based on the competence attained by their employees.

生產力局與行業協會及專業團體廣泛聯繫，提供諮詢服務，協助機構規劃、建立及發展企業學院，以及獲取資歷架構認可。

With its extensive connection with trade associations and professional bodies, HKPC offers consultancy services to assist organisations to plan, establish and develop corporate academies as well as to pursue QF accreditation.

生產力局企業學院服務 HKPC's Corporate Academy Services

- 人力培訓系統能力評估
- 品質保證顧問
- 資歷架構顧問
- Readiness Assessment
- Quality Assurance Consultancy
- QF Consultancy



發展創意人才 DEVELOPING CREATIVE TALENT

憑藉與創意產業及製造業的聯繫，生產力局在創意香港的資助下，與不同的行業協會合作，發展創意產業人才，支援行內初創企業的發展。

Leveraging on HKPC's connection with the creative and manufacturing industries, and with funding support from CreateHK, HKPC has collaborated with trade associations to develop creative talents and support the business development of start-ups in the creative industry sectors.

為了向一帶一路國家推動香港的專業特技服務，生產力局與香港動作特技演員公會及香港電影後期專業人員協會合辦推廣計劃。

To help promote Hong Kong's professional stunt service to Belt and Road countries, HKPC collaborated with the Hong Kong Stuntman Association (HKSA) and the Association of Motion Picture Post Production Professionals to implement a promotional programme.

在計劃下，香港動作指導及後期製作指導包括梁小熊（香港動作特技演員公會副會長，葉問／動作指導）及《美人魚》數碼視覺效果指導羅浩銘，獲邀請出席工作坊和研討會，分享香港的動作特技與本地視覺效果及虛擬現實結合的技巧。

Under the programme, renowned Hong Kong action choreographers and post-production directors, including Mr Tony Leung (Vice President of the HKSA and action choreographer of *Ip Man*) and Mr Ken Law (digital effects supervisor of *The Mermaid*) were invited to deliver workshops and seminars that integrated Hong Kong's stunt expertise with local visual effects and VR techniques.





海外參加者可以親身體驗在中區街道上拍攝電影的實況，即場示範著名的吊鋼絲（「吊威也」）和高空特技指導，並配合綠幕拍攝，海外參加者更可與導師互動溝通。製作的短片將用於向全球推廣香港的特技和視覺效果行業。

Overseas participants at the workshop were able to experience real film shooting on streets of Central District, while the famous wire work and high-flying stunt choreography, together with green screen shooting, were demonstrated in the workshop. Participants were able to interact and communicate with the instructors. A short film produced during the workshops will be used to promote Hong Kong's stunt and visual effects industry worldwide.

此外，2017年香港國際影視展亦設立「Action Power」展館，推廣行業形象，為業界帶來不少業務查詢和合作機會。

The industry was further promoted through the Action Power Pavilion set up at FILMART 2017, generating a lot of enquiries and establishing useful business contacts for creative industry practitioners.

香港數碼娛樂協會再次與生產力局合作，推行第四屆動畫支援計劃，協助15間初創企業及小型動漫公司培育人才，透過津貼、指導及培訓，創作原創動畫內容。作品在各個本地和地區展覽例如香港國際影視展2017，以及獎項活動推廣，為初創企業和中小企業創造更多商機。

Collaborating once again with the Hong Kong Digital Entertainment Association, HKPC implemented the 4th Animation Support Programme to help 15 start-ups and small animation companies nurture talents and create original animation content through the provision of subsidies, mentoring and training. The works created are being promoted at various local and regional exhibitions and award activities, including FILMART 2017, to develop more business opportunities for the start-ups and SMEs.

年內，生產力局協助香港互動市務商會推行第四屆「微電影支援計劃」（音樂），該計劃協助18家廣告製作公司和18名青年歌手，配合培訓、推廣和製作資源的協助，創造原創微電影作品。

During the year, HKPC also assisted the Hong Kong Association of Interactive Marketing to implement the 4th Microfilm Support Scheme (Music). This assisted 18 advertising production start-up companies and 18 young singers with support in training, promotion and production resources to create original microfilm works.



計劃協助
the Scheme assisted



18

家廣告創業公司
advertising production start-up companies

18

名青年歌手配合培訓
young singers with support in training



推動STEM教育 PROMOTING STEM

推行科技工程數學(STEM)教育對香港發展智慧城市相當重要。STEM的目標不在於傳授學生的技術知識，而是鼓勵他們為科學探索創造新穎的解決方案。

Promoting STEM education is an essential part of Hong Kong's development into a smart city. The objective of STEM education is not about giving students technological knowledge but encouraging them to create innovative solutions that can enhance scientific exploration.

17位「香港中學生太空搭載實驗方案設計比賽」得獎隊伍的代表經歷歷史時刻，於2016年10月17日隨生產力局率領的「神舟十一號」載人飛船升空考察團親臨甘肅省酒泉衛星發射中心，見證本港中學生構想的太空實驗裝置首度隨國家的航天船升空。

It was a historic moment for 17 representatives from the winning school teams of the "Space Science Experiment Design Competition for Hong Kong Secondary School Students" who got to witness at first hand the launch of the Shenzhou-11 manned spacecraft on 17 October 2016, as part of a delegation led by the HKPC. Experiments designed by Hong Kong secondary students were carried onboard the spacecraft.





各優勝作品從47間中學的70支參賽隊伍中脫穎而出。生產力局的工程專家在國家航天工程專家的指導下，將冠、亞、季軍得獎設計組裝成符合航天要求的實驗裝置。這三個科普實驗活動包括：「微重力狀態下製作多用途聚合物有孔薄膜」、「研究蠶蟲在太空的變態過程」和「微重力狀態下雙擺運動的混沌性質」。

The winning experiment designs were selected out of 70 entries from 47 secondary schools. With guidance from aerospace engineers in China, HKPC turned the three winning designs into models that could fulfil aerospace requirements. These experiments studied the production of porous membranes, the transformation of silkworms, and the oscillation of a double pendulum under zero gravity.



是次設計比賽於2014年10月展開，由香港特區政府民政事務局與中國載人航天局合辦，鼓勵全港中學生設計適合於太空環境進行的科學實驗。

Jointly organised by the Home Affairs Bureau of the HKSAR Government and the China Manned Space Agency, the competition was launched in October 2014 with an aim to encourage Hong Kong secondary students to design scientific experiments that could feasibly be conducted in space.

這更是首次由國家航天員於太空任務中操作香港學生設計的實驗裝置，既實踐了同學的航天夢，同時對推廣香港的創新科技文化意義重大。

This was the first time that Chinese astronauts conducted experiments designed by Hong Kong students in their space mission. In addition to realising students' dreams to have their own experiments conducted in space, the competition also helped to nurture a culture of innovation and technology in Hong Kong.



3D HONG KONG
3D香港

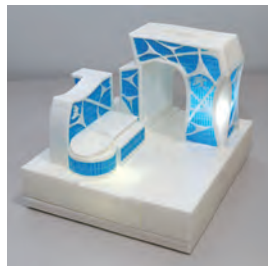
為慶祝香港特別行政區成立 20 週年，及鼓勵年輕一代運用 3D 打印技術發揮創意，生產力局在創新及科技基金資助下，舉辦「魅力維港耀全城」全港中學生 3D 打印設計比賽。

To commemorate the 20th Anniversary of the Hong Kong Special Administrative Region, and to promote creativity and the innovative use of 3D printing among the younger generation in Hong Kong, HKPC launched the “Hong Kong Secondary Schools 3D Printing Design Competition” under the theme of “Our Glamorous Victoria Harbour”. The competition was supported by funding from the ITF.

生產力局一直向普羅大眾推廣 3D 打印技術。除了於 2015 年成立「3D 打印體驗廊」，提供一站式 3D 打印顧問服務外，比賽更進一步面向香港中學生和教師，提高學生對 STEM 教育的興趣，培育創新人才，支持香港的再工業化。

HKPC has been diligently promoting 3D printing technology to the wider community. In addition to opening the 3D Printing One facility in 2015 to provide one-stop 3D printing consultancy services, this competition helped to go a step further in reaching secondary students and teachers in Hong Kong, hoping to raise students' interests in STEM education and nurture a pool of creative talents to support the re-industrialisation of Hong Kong.





勝出的 20 個地標模型設計，連同逾一千一百件利用 3D 打印技術製成的物件，合組成巨型維港模型，將創造「單一場地展示最多 3D 打印展品」的健力士世界紀錄。

The 20 winning building designs, together with more than 1,100 3D-printed objects, will form a mega Victoria Harbour model with an area exceeding 35 square metres, which is set to create the first Guinness World Record for the largest number of 3D-printed sculptures in a single display.

為提升參與學校對 3D 打印的認識，生產力局自籌備是次比賽開始，舉辦一系列的活動，其中包括 3D 打印技術趨勢，為教師及學生安排電腦輔助設計系統的培訓課程，以及由生產力局及行業專家進行實用 3D 打印培訓課程。

To enhance the 3D printing knowledge of participating school teams, HKPC has organised a series of activities since launching the competition. These included seminars on technology trends in 3D printing, CAD training for teachers and students, as well as hands-on 3D printing training conducted by HKPC and industry experts.

智慧管治
SMART GOVERNANCE

在工業和操作系統互相聯繫的工業4.0新時代，智能技術與先進製造系統日趨整合，將大大提高生產效率和靈活性，同時也製造更多網絡界面，令大量數據在不安全的網絡上流動，衍生全新的網絡安全風險。

In the new era of Industry 4.0, as industrial and operating systems become more closely interconnected, there will be a growing use of smart technologies and integration with advanced manufacturing technologies and systems. While these changes will significantly enhance efficiency and flexibility in production, there will be more network interfaces and a larger flow of data over untrusted networks, creating a whole new range of cyber security risks.

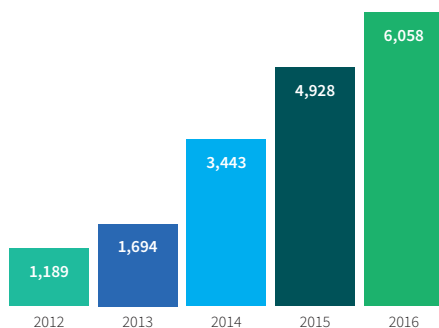
網絡攻擊將會針對這些互連的工業和操作系統，並會導致服務中斷，知識產權等敏感數據洩漏，甚至令企業負上財務或法律責任。

Cyber attacks targeting connected industrial and operating systems may result in service disruptions, loss of sensitive data such as intellectual property, or even financial or legal liabilities.

香港電腦保安事故協調中心 HKCERT

生產力局屬下的香港電腦保安事故協調中心，一直擔當資訊保安事故的通訊和協調中心，提供事故的即時反應、安全監控和預警、安全意識的教育，以及和本地及海外組織合作等四項主要服務。

HKCERT, which operates under the auspices of HKPC, has been acting as a communication hub for responding to information security incidents. It provides four main services, including incident response, security monitoring and early warning, security awareness education, and collaboration with local and overseas organisations.



Security incident reports handled by HKCERT
香港電腦保安事故協調中心處理的保安事故

協調中心在2016年處理了6,058宗保安事故，比2015年上升了23%。中心正密切監測網絡嵌入式系統，或「物聯網」的新型威脅，並積極發展解決方案，透過網絡嵌入式安全系統的培訓和諮詢服務，提升各界對「物聯網」風險評估的意識。

In 2016, HKCERT handled 6,058 security incidents, an increase of 23% on 2015. HKCERT is closely monitoring the emerging threats of networked embedded systems or IoT and is developing solutions to address them through awareness promotion, training on embedded system security, and consultancy on IoT risk assessment.

協調中心與政府資訊科技總監辦公室和香港警務處聯合舉辦了「共建安全網絡2016」資訊保安推廣活動，包括公眾研討會及吉祥物設計大賽，並於2016年5月和11月舉辦了兩場公開研討會。

HKCERT jointly organised the “Build a Secure Cyberspace 2016” campaign with the Government and Hong Kong Police Force. The campaign involved public seminars and a mascot design contest. Two public seminars were organised in May and November 2016.

2016年4月，協調中心在本地行業協會的協助下，推出了「中小企業網站免費保安檢查先導計劃」的新服務，透過「檢查-行動-驗證」的三個步驟，協助資源不足的中小企提升其網站安全。

In April 2016, HKCERT launched a new service called the “SME Free Web Health Check Pilot Scheme”. With the help of local trade associations, the scheme aims to promote web security among SMEs — easy victims of cyber attacks due to insufficient resources to protect their websites — through a three-step “Check-Act-Verify” approach.

協調中心專家指導被選參與計劃的中小企業，檢查他們的網站的健康狀況，並建議免費改進措施。當中小企推行有關措施後，生產力局專家將驗證改進措施的成效，透過此計劃，中小企可顯著加強網絡攻擊的防禦能力。

HKCERT starts by guiding participating SMEs to check the health status of their websites and provided free improvement suggestions. HKPC's experts will then verify the effectiveness of the improvement measures once they are adopted by participating SMEs. With this support scheme, there will be a substantial improvement in the fight against cyber attacks on smaller local businesses.



CORPORATE GOVERNANCE

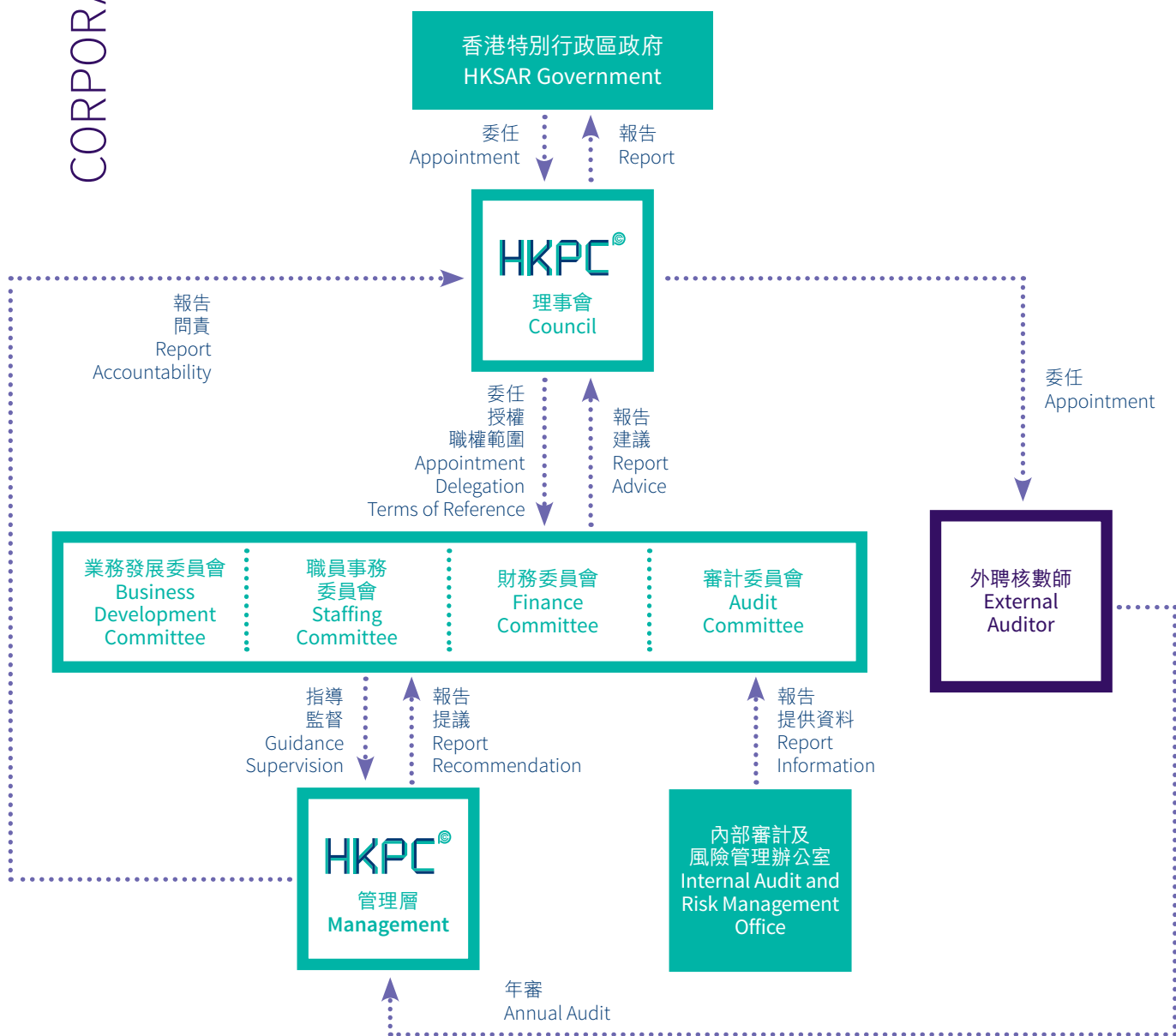
企業管治

生產力局是受《香港生產力促進局條例》（香港法律第1116章）管轄的法定組織。生產力局致力維持良好企業管治，以履行公眾使命及滿足社會期望。本局高度重視問責性、透明度、公平及道德操守，以此作為企業管治架構的基石。

HKPC is a statutory organisation governed by the Hong Kong Productivity Council Ordinance (Chapter 1116 of Laws of Hong Kong). HKPC is fully committed to maintaining good corporate governance as we strongly believe that good corporate governance is essential to accomplishing our public mission and meeting the expectations of our stakeholders. We attach paramount importance to adopting accountability, transparency, fairness and ethics as the cornerstones of our corporate governance framework.

企業管治架構

Corporate Governance Structure



理事會

理事會是生產力局的管治組織，為生產力局履行職能提供策略領導。

理事會成員最多23人，由香港特區政府委任，包括5位政府官員，並於其餘的非官守成員中（包括資方、勞方及專業／學術界代表）委任1位主席及1位副主席。

理事會主席及其他委員均屬非執行性質。在本年度內，理事會召開了四次會議。個別委員的出席紀錄詳列於第117頁。

理事會每年審批生產力局的三年預測、詳盡的年度計劃及預算，及三年策略計劃。

理事會委員對帳目的責任

各理事會委員均得悉本身有責任確保本局週年會計帳目的編製，已遵照法例要求及適用會計準則。

生產力局核數師就本身對生產力局帳目審核報告的責任，刊載於獨立核數師報告的第3頁。

The Council

The Council is the HKPC's governing body, providing strategic leadership in the fulfilment of the organisation's functions.

The Council comprises not more than 23 Members appointed by the HKSAR Government, of whom five shall be public officers. Among the non-official members (who represent management, labour and professional or academic interests), a Chairman and a Deputy Chairman shall be appointed.

The Chairman, and other Members, of the Council are non-executive in nature. In the year under review, the Council has convened four meetings. The attendance records of individual members are available on page 117.

The Council on an annual basis approves HKPC's Three-Year Forecast, the detailed Programme and Estimates of HKPC, and the Three-year Strategic Plan.

Council Members' responsibility for the Accounts

Council Members acknowledge their responsibility for ensuring that the preparation of the annual accounts of HKPC is in accordance with statutory requirements and applicable accounting standards.

The statement of the Auditor of HKPC about their reporting responsibilities on the accounts of the HKPC is set out in the Independent Auditor's Report on page 3 of the full audited accounts.



理事會委員會

理事會轄下成立了四個委員會，以處理不同範疇的事務。這四個委員會分別為：審計委員會、財務委員會、職員事務委員會，以及業務發展委員會。各委員會均對理事會負責。

理事會/委員會的會議記錄均以不具名方式刊載於生產力局網站(若討論事項涉及敏感或機密商業資料，以及審計委員會會議記錄則除外)。

審計委員會

審計委員會負責在財務報告、風險管理、內部監控，核數師的委任及表現，以及遵從相關法規等方面進行監察並提出建議，提升本局的企業管治水平。審計委員會並獲理事會授權，就責任範圍內的任何相關事項進行調查及協調。職員亦可向審計委員會主席舉報任何違規或不當行為。

本局設有內部審計及風險管理辦公室支援審計委員會的工作，並向委員會匯報工作進度，及行政上向總裁匯報。辦公室致力協助委員會保障及促進生產力局的企業管治水平。

審計委員會由一位理事會委員擔任主席，現時共有七位成員。在本年度內，委員會召開了五次會議。

主席

黃志光

委員會成員

張益麟
郭敏宜
梁廣泉
吳宏斌, BBS, MH
楊嘉燕
蔡淑嫻, JP
麥鄧碧儀, MH, JP

截至 2017 年 3 月 31 日

Council's Committees

Under the auspices of the Council, four committees have been set up to look after different aspects of Council business. These four committees are the Audit Committee, the Finance Committee, the Staffing Committee and the Business Development Committee. All the Committees are accountable to the Council.

The minutes of the Council and Committees (except discussion items containing commercially sensitive or confidential information and the minutes of the Audit Committee) are made available on a non-attributable basis on the HKPC website.

Audit Committee

The Audit Committee is established to monitor and make recommendations to enhance HKPC's healthy corporate governance in the areas of financial reporting, risk management, internal control, the appointment and performance of an external auditor, and compliance with relevant laws and regulations. The Committee is authorised by the Council to investigate any activity and resolve any disagreement within its scope of duties.

Staff members can directly report to the Chairman of the Audit Committee on cases of malpractice or irregularities. The Committee is underpinned by an Internal Audit and Risk Management Office which reports functionally to the Audit Committee and administratively to the Executive Director. The Office is committed to assist the Audit Committee to safeguard and promote the healthy corporate governance of HKPC.

The Audit Committee is chaired by a Council member and currently has seven members. It met five times during the year in review.

Chairman

Mr Patrick Wong Chi-kwong

Members

Mr Alan Cheung
Ms Mandy Kwok Man-yee
Mr Leung Kwong-chuen
Dr Dennis Ng Wang-pun, BBS, MH
Ms Karmen Yeung Ka-yin
Ms Annie Choi Suk-han, JP
Mrs Agnes Mak Tang Pik-yee, MH, JP

As at 31 March 2017

財務委員會

財務委員會負責監督本局的財務表現，確保資金的運用恰當。委員會審批本局有關採購、大樓管理、固定資產管理、服務收費率及投資策略和指引等政策及守則的修改。

委員會提交給理事會審議本局的三年策略計劃、三年財政預算、年度計劃及預算，以及主要開支項目的編配調動。委員會並就本局的財務政策及對本局有重大財務影響的事宜向理事會提出意見。

財務委員會由一位理事會委員擔任主席，現有七位成員。在本年度內，委員會召開了四次會議。

主席

馮英偉

委員會成員

查逸超, JP
周博軒
吳宏斌, BBS, MH
楊嘉燕
陳李藹倫, JP
夏國鋒
麥鄧碧儀, MH, JP

截至 2017 年 3 月 31 日

Finance Committee

The Finance Committee monitors the financial performance of HKPC and ensures that funds made available are properly accounted for. The Committee approves changes to HKPC's policies and practices relating to procurement, building management, fixed asset management, charging levels for HKPC services, and investment strategy and guidelines.

The Committee recommends HKPC's three-year strategic plan, three-year forecast, an annual programme and estimates, and the transfer of funds between major heads of expenditure, for consideration by the Council. The Committee also advises the Council on matters relating to HKPC's financial policies and matters that have a significant financial impact on HKPC.

The Finance Committee is chaired by a Council member and currently has seven members. It met four times during the year in review.

Chairman

Mr Wilson Fung Ying-wai

Members

Prof John Chai Yat-chiu, JP
Mr Felix Chow Bok-hin
Dr Dennis Ng Wang-pun, BBS, MH
Ms Karmen Yeung Ka-yin
Mrs Helen Chan, JP
Mr Bryan Ha Kwok-fung
Mrs Agnes Mak Tang Pik-yee, MH, JP

As at 31 March 2017



職員事務委員會

職員事務委員會負責審批總經理級的委任。委員會監督職員人手情況，並於有需要時向理事會提出意見。委員會主要就人力資源發展政策向理事會提供意見。委員會還負責監察員工的服務條件，確保足以聘請及挽留能幹的職員，並於必要時向理事會提出修改建議。委員會可作為理事會與員工之間有關薪俸條件的溝通渠道，尤其是當雙方經磋商後仍無法解決問題。

職員事務委員會由一位理事會委員擔任主席，現時共有十位成員。在本年度內，委員會召開了四次會議。

主席

陳祖恒

委員會成員

郭敏宜
林錦儀
李秀琼
梁廣泉
李凱
黃志光
尤曾家麗, GBS, JP
李寶儀, JP
夏國鋒
麥鄧碧儀, MH, JP

截至 2017 年 3 月 31 日

Staffing Committee

The Staffing Committee approves the appointment of General Managers. The Committee monitors the staffing situation and recommends changes to the Council where appropriate. It advises the Council on human resources development policies. The Committee also monitors HKPC's general terms and conditions of service, to ensure that these are adequate to recruit and retain competent staff, and recommends changes to the Council where necessary. The Committee provides a channel between the Council and staff for the communication of grievances about general terms and conditions of service, in situations where they cannot be resolved by consultation.

The Staffing Committee is chaired by a Council member and currently has 10 members. It met four times during the year in review.

Chairman

Mr Sunny Tan

Members

Ms Mandy Kwok Man-yee
Miss Lam Kam-yi
Ms Amy Lee Sau-king
Mr Leung Kwong-chuen
Mr Li Hoi
Mr Patrick Wong Chi-kwong
Mrs Carrie Yau Tsang Ka-lai, GBS, JP
Miss Mabel Li Po-yi, JP
Mr Bryan Ha Kwok-fung
Mrs Agnes Mak Tang Pik-yee, MH, JP

As at 31 March 2017

業務發展委員會

業務發展委員會負責檢討生產力局的業務情況、審批對生產力局服務範疇作出的重大改動、探討新的業務發展機會，以及就生產力局在工業轉型下應擔當的角色及業務發展向理事會提出建議。此外，委員會亦負責監督生產力局附屬公司的表現。

業務發展委員會由一位理事會委員擔任主席，現時共有六位成員。在本年度內，委員會召開了四次會議。

主席

李國本

委員會成員

張益麟

周博軒

譚嘉因, MH

于健安, JP

夏國鋒

麥鄧碧儀, MH, JP

截至 2017 年 3 月 31 日

內部監控及風險管理

理事會非常重視維持高水準的企業管治、提高本身的透明度，以及對公眾問責，而外部和內部審計系統正可落實這宗旨。

外部審計

理事會委任安永會計師事務所為外聘核數師，為本局財務報告進行審計。

除了審查財務報告之外，外聘核數師在加強生產力局的內部監控，也發揮重要作用。如有需要，外聘核數師會在審計程序開始前，在管理層避席下與審計委員會討論審計的性質和範疇，以及查詢任何事項。外聘核數師致管理層的所有管理建議書，以及生產力局管理層的所有回應，均交由審計委員會審閱。

內部審計及風險管理

內部審計及風險管理辦公室由生產力局理事會審計委員會督導，協助處理生產力局的風險管理工作。

辦公室致力找出及評估潛在的營運風險，並提出相應的內部監控措施，以符合企業管治的要求。辦公室並制定和執行生產力局的審計政策和策略，以保障其資產，符合有關法律、法規，提高營運效率及效益，確保文件記錄的準確性和可靠性。

Business Development Committee

The Business Development Committee reviews the business activities of HKPC, considers substantial changes to the HKPC's Services Audit Statement, explores new business opportunities, and advises the Council on the business development of HKPC in relation to HKPC's role in the changing industrial environment. The Committee also monitors the performance of HKPC's subsidiary companies.

The Business Development Committee is chaired by a Council member and currently has six members. It met four times during the year in review.

Chairman

Dr Delman Lee

Members

Mr Alan Cheung

Mr Felix Chow Bok-hin

Prof Tam Kar-yan, MH

Mr Emil Yu Chen-on, JP

Mr Bryan Ha Kwok-fung

Mrs Agnes Mak Tang Pik-ye, MH, JP

As at 31 March 2017

Internal Control and Risk Management

The Council attaches significant importance to maintaining a high standard of corporate governance and enhancing the organisation's transparency and accountability to the public. The external and internal audit systems are instrumental in this regard.

External Audit

The Council has appointed Ernst & Young as the external auditor to conduct an audit of its financial statements.

The external audit plays an important role in reviewing the financial statements as well as strengthening the internal controls of HKPC. Before the audit commences, the external auditor discusses the nature and scope of the audit with the Audit Committee, if necessary, together with any matters the external auditor may wish to discuss in the absence of management. Any management letter from the external auditor and HKPC management's response will be reviewed by the Audit Committee.

Internal Audit

The Council's Internal Audit and Risk Management Office ("ARO") is directed by the Audit Committee of HKPC to assist the management team with the risk management function of the Council.

ARO proactively identifies and examines any area of risk in HKPC operations and proposes appropriate internal control measure in line with the mandates for corporate governance. ARO also formulates and executes an overall audit policy and strategy for the Council to safeguard its assets, ensure compliance with relevant laws and regulations, promote operational efficiency and effectiveness, and secure the accuracy and reliability of its records.



該辦公室直接向審計委員會匯報，並須在每次審計委員會會議上，就生產力局不同運作的監管和合規情況，向委員會報告其審計結果。

在本年度，內部審計及風險管理辦公室審核了生產力局的九項運作，涉及生產力局的不同範疇。各項審計工作推行前，均經過審計委員會審批。

內部監控

為確保內部監控制度持之有效，管理層在本年報期內還執行了以下工作：

- 檢討內部監控制度的成效，並透過檢視內部審計報告的內容，向理事會報告審查結果和建議；
- 制定年度計劃和預算時，審視各部門的資源；
- 經常審視業務、外部環境和重大風險，作為制定年度計劃和預算的重要部份；及
- 連同審計委員會主席會見外聘核數師，並報告於審計委員會會議上所討論的各個監控弱點，以及財務報告的效益和符合規章的情況。

The Office reports directly to the Chairman of the Audit Committee. At every Audit Committee meeting, the Office reports to the Committee its findings on the auditing of control sufficiency and the compliance situation for different HKPC operations.

In the year under review, the ARO had reported the audit results of nine operations covering different aspects of HKPC. The audit job plans are reviewed and agreed by the Audit Committee in advance.

Internal Control

To ensure an effective system of internal control is in place, HKPC management has also performed the following tasks during the reporting period:

- review the effectiveness of the system of internal control and report to the Council through a review of the findings and recommendations as set out in the reports of the internal audit;
- review the resources for all divisions during the annual Programme and Estimates exercise;
- conduct frequent reviews of the business, external environment and significant risks as part and parcel of the annual Programme and Estimates exercise; and
- meet with external auditors together with the Audit Committee Chairman to report on any control weaknesses and the effectiveness of financial reporting and compliance as discussed during the meeting of the Audit Committee.

透明度

根據《香港生產力促進局條例》的規定，生產力局每年的年報連同財務報告及核數師報告，均須呈交立法會。為提高透明度，生產力局最高兩級行政人員的薪酬，詳列於獨立核數師報告的第44頁。

各理事會及委員會成員的出席紀錄詳列於第117頁。

自2009年11月起，理事會及委員會的會議記錄均以不具名方式刊載於生產力局網站（若討論事項涉及敏感或機密商業資料，以及審計委員會會議記錄則除外）。

此外，理事會通過了一套「兩層式」利益申報制度，各成員必須在上任時及其後每年，申報所擁有的獨資或合資的公司，或出任董事的公司；除此之外，各成員還要披露有報酬的聘任、職位、行業、專業工作或職業，以及在各家上市和私人公司的持股量（如持有量佔公司已發行股本的1%或以上）。

公眾可要求查閱各項利益申報登記。此外，成員如意識到未來的議題中，有任何事項可能涉及其利益關係，必須在該議題正式商議前，盡快向主席（或理事會）披露。

為進一步加強企業管治，已參照廉政公署《公共機構成員行為守則範本》制定理事會成員的行為守則，目的是確保成員明白及遵守生產力局的價值及行為準則，履行職務時保障持份者的利益。

行為守則為成員提供一套基本準則，以供判斷行為是否恰當，並在遇到常見情況時，作出適當決策，例如接受利益和款待及可預見的利益衝突等。守則涵蓋五個主要範疇：防止賄賂、利益衝突、濫用職權、保密資料及欠債。

Transparency

In accordance with the requirements of the HKPC Ordinance, the HKPC's Annual Report, with the statement of accounts and the auditor's report, is tabled at the Legislative Council each year. To enhance transparency, the annual emoluments of every senior executive in the top two tiers of HKPC management are disclosed under Note 16 on page 44 of the full audited accounts.

The attendance of Members in Council and Committees is detailed on page 117.

Since November 2009, the minutes of the Council and Committees (except discussion items containing commercially sensitive or confidential information and the minutes of the Audit Committee) have been made available on a non-attributable basis on the HKPC website.

Separately, the Council adopted a two-tier reporting system for declarations of interest by Council Members, who are required to disclose upon first appointment and annually thereafter, any proprietorships, partnerships or directorships of companies. They are also required to disclose remunerated employments, offices, trades, professions or vocations as well as shareholdings in companies, public or private (amounting to 1% or more of the company's issued share capital).

The register of declarations is made available for public inspection upon request. Furthermore, Members are required, as soon as practicable after they have become aware of it, to disclose to the Chairman (or the Council) their interest in any matter under consideration by the Council prior to the discussion.

To further enhance governance, a Code of Conduct based on the ICAC's "Sample of Code of Conduct for Members of Public Bodies" is applicable to all Council Members. The objective of the Code is to communicate HKPC's values and standards of behaviour to which Members should adhere in the discharge of their duties.

It also provides a framework for determining appropriate actions and making appropriate decisions for situations which Members have commonly encountered such as advantages and entertainment offered, conflict of interest foreseen, and so on. Specifically, the Code of Conduct includes five major categories: Prevention of Bribery, Conflict of Interest, Misuse of Official Position, Confidentiality of Information, and Indebtedness.

舉報

理事會推行了舉報政策，為公眾提供舉報渠道和指引。任何人士如有合理懷疑，生產力局或任何員工出現違規、行為失當或舞弊情況，可通過信件或專用電郵地址(whistleblowing@hkpc.org)直接向審計委員會主席舉報事件，只有獲得審計委員會主席授權的指定人士，才可查閱有關電子郵件或信件。

審計委員會主席會檢視有關的投訴，並決定該如何處理，例如：提名一位合適的專員或成立特別委員會，獨立調查事件。

工作安全及保安管理

生產力局高度重視職業安全及機構保安，本局致力為員工及持份者提供安全及健康的工作環境。

本局正推行國際標準職業健康及安全管理體系OHSAS 18001，更有系統地識別和管理安全及健康風險。2017年2月，生產力局通過了OHSAS 18001的持續監督審核，展示對職業健康及安全管理體系的有效性、高效率和可靠性。

生產力局邀請專家就消防安全、工作及健康生活方式，以及預防肌肉骨骼疾病等問題舉行工作坊，共有124人參與。

Whistleblowing

The Council has a whistleblowing policy to provide the wider public with reporting channels and guidance on whistleblowing. Persons who have legitimate concerns regarding any irregularity, misconduct or malpractice by the Council or any staff member may raise the matter directly through mail or a dedicated email address (whistleblowing@hkpc.org) to the Audit Committee (AC) Chairman of the Council. Only persons who are designated by the AC Chairman will have access to such emails or correspondence.

The AC Chairman will review each complaint and decide how it should be addressed. This may involve nominating an appropriate investigating officer or the setting up of a special committee to conduct an independent investigation into the matter.

Safety and Security Governance

Safety and security remains a priority of the Council. HKPC is committed to providing and preserving an inherently safe and healthy work environment for all staff and stakeholders.

HKPC has been developing, implementing and maintaining an occupational health and safety management system in full compliance with the OHSAS 18001 international standard to identify and manage safety and health risks systematically. In February 2017, HKPC passed the OHSAS 18001 surveillance audit, demonstrating the effectiveness, efficiency and reliability of the HKPC's Occupational Health and Safety (OH&S) management system.

During the reporting year, HKPC invited specialists to deliver talks on the topics of fire safety, healthy working lifestyles and the prevention of musculoskeletal disorders. A total of 124 participants attended these sessions.

理事會及常務委員會會議出席紀錄 Council and Standing Committee Meeting Attendance Record

4/2016 - 3/2017		理事會 Council	職員事務 SC	業務發展 BDC	財務 FC	審計 AC
林宣武先生，SBS，JP (由 6/8/2016)	Mr Willy Lin Sun-mo, SBS, JP (from 6/8/2016)	2/2		1/1		
伍志強先生，MH (至 31/12/2016)	Mr Victor Ng Chi-keung, MH (till 31/12/2016)	3/3			3/3	
黃志光先生	Mr Patrick Wong Chi-kwong	4/4	4/4			5/5
查逸超教授，JP	Prof John Chai Yat-chiu, JP	4/4		1/3	1/1	
張益麟先生	Mr Alan Cheung	4/4		1/1		4/5
周博軒先生	Mr Felix Chow Bok-hin	2/4		1/1	2/4	
馮英偉先生	Mr Wilson Fung Ying-wai	4/4			4/4	3/4
郭敏宜女士 (由 1/1/2017)	Ms Mandy Kwok Man-yee (from 1/1/2017)	1/1	1/1			1/1
李國本博士	Dr Delman Lee	3/4		3/4		2/4
梁廣泉先生	Mr Leung Kwong-chuen	4/4	1/1	2/3		4/5
梁任城先生 (至 31/12/2016)	Mr Leung Yam-shing (till 31/12/2016)	2/3	3/3			3/4
蒙美玲教授 (至 31/12/2016)	Prof Helen Meng Mei-ling (till 31/12/2016)	0/3	2/3	0/3		
吳宏斌博士，BBS，MH	Dr Dennis Ng Wang-pun, BBS, MH	3/4			4/4	5/5
顏吳餘英女士，MH，JP (至 31/12/2016)	Mrs Katherine Ngan Ng Yu-ying, MH, JP (till 31/12/2016)	1/3	1/3	3/3		
譚嘉因教授，MH (由 1/1/2017)	Prof Tam Kar-yan, MH (from 1/1/2017)	1/1		1/1		
陳祖恒先生	Mr Sunny Tan	4/4	1/1	2/3		
尤曾家麗女士，GBS，JP (由 1/1/2017)	Mrs Carrie Yau Tsang Ka-lai, GBS, JP (from 1/1/2017)	1/1	1/1			
楊嘉燕女士 (由 1/1/2017)	Ms Karmen Yeung Ka-yin (from 1/1/2017)	1/1			1/1	1/1
楊傑傑博士 (至 31/12/2016)	Dr Jack Yeung Chung-kit (till 31/12/2016)	3/3	3/3			
于健安先生，JP (由 1/1/2017)	Mr Emil Yu Chen-on, JP (from 1/1/2017)	1/1		1/1		
林錦儀女士	Miss Lam Kam-yi	4/4	3/4			
李秀琼女士	Ms Amy Lee Sau-king	4/4	3/4			
李凱先生	Mr Li Hoi	4/4	3/4			
創新及科技局常任秘書長或其候補委員	Permanent Secretary for Innovation and Technology or his alternative members	4/4				
創新科技署署長或其候補委員	Commissioner for Innovation and Technology or her alternative members	4/4	4/4	4/4	4/4	5/5
工業貿易署署長或其候補委員	Director-General of Trade and Industry or her alternative members	4/4				
政府經濟顧問或其候補委員	Government Economist or her alternative members	4/4			4/4	
勞工處副處長或其候補委員	Deputy Commissioner for Labour or her alternative members	4/4	4/4			
香港生產力促進局總裁	Executive Director of HKPC		4/4	4/4	4/4	5/5

職員事務 – 職員事務委員會，業務發展 – 業務發展委員會，財務 – 財務委員會，審計 – 審計委員會

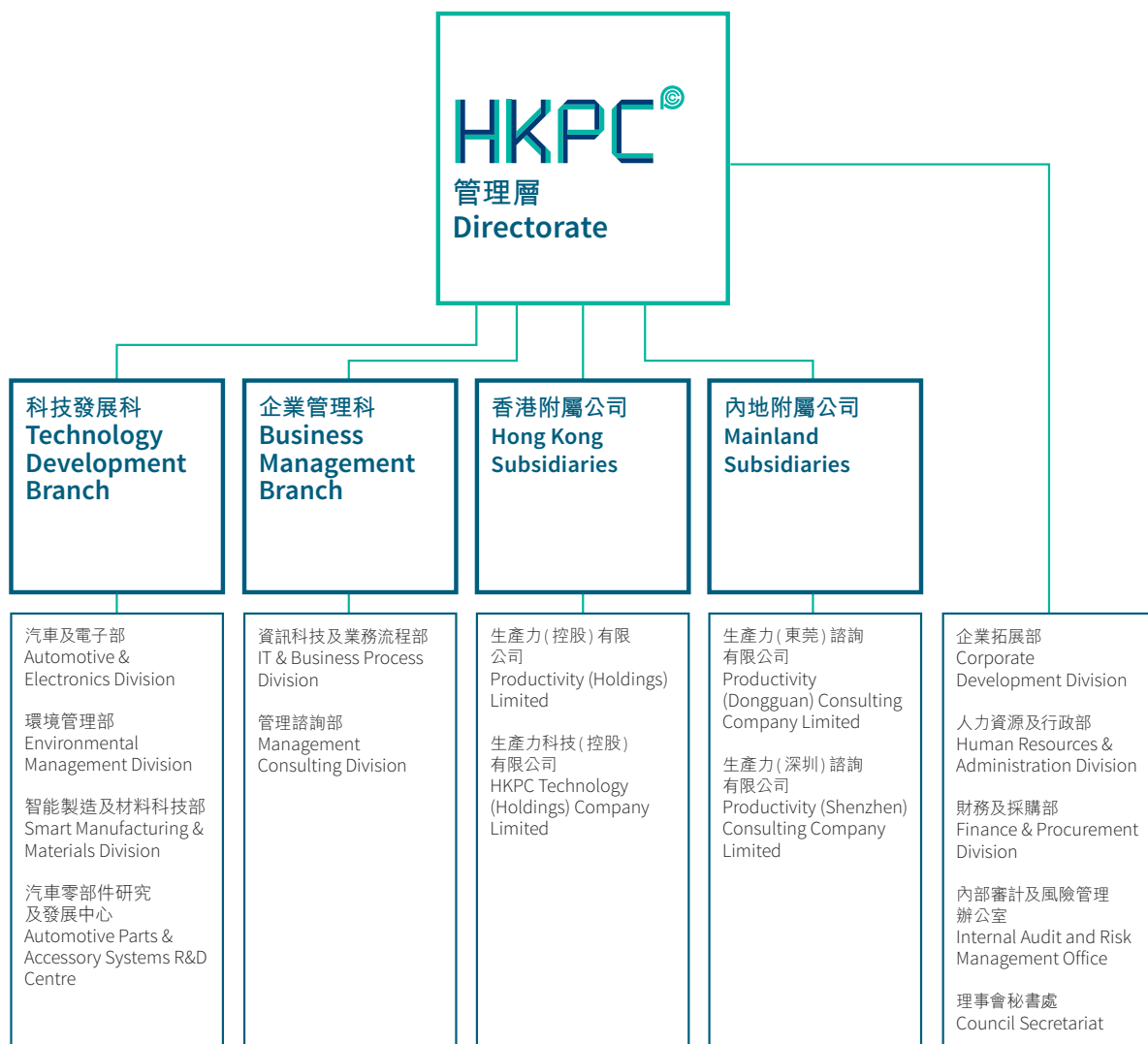
SC – Staffing Committee, BDC – Business Development Committee, FC – Finance Committee, AC – Audit Committee

主要表現指標

KEY PERFORMANCE MEASURES

		2012/13	2013/14	2014/15	2015/16	2016/17
服務提供 Service Delivery						
顧問項目數目 Number of consultancy projects		1,030	964	970	917	948
培訓課程學員人數 Number of training course participants		5,434	4,564	3,041	4,248	4,198
展覽/考察團/會議參加人數 Number of people attended the exhibitions/ study missions/conferences		2,048	6,474	3,969	2,221	4,293
財務(百萬元) Financial Result (HK\$M)						
顧問項目收入 Income from consultancy projects		260.6	260.3	265.4	307.7	342.4
培訓課程收入 Income from training courses		18.5	17.4	12.9	8.9	9.4
展覽/考察團/會議收入 Income from exhibitions/study missions/ conferences		10.3	7.2	9.4	4.8	9.4
製造支援項目收入 Income from manufacturing support projects		22.3	26.3	26.0	23.6	25.2
效益 Effectiveness						
市場推廣 Marketing effort	生產力局為行業協會舉辦的活動/ 聯繫活動/免費研討會 參加者人數 Number of people attended events/ networking activities for industry associations/ free seminars	22,629	24,341	23,531	20,620	22,093
客戶滿意 Customer satisfaction	客戶滿意度指數 Customer satisfaction index	9.1	9.01	8.9	8.92	8.99

組織架構
ORGANISATION STRUCTURE



A decorative graphic consisting of multiple horizontal bars of various colors (yellow, orange, pink, blue, green, brown) stacked on top of each other, creating a textured, layered effect.

管理層 SENIOR MANAGEMENT

麥鄧碧儀, MH, JP

Mrs Agnes Mak Tang Pik-yee, MH, JP

總裁

Executive Director

麥鄧碧儀女士歷任公營機構及跨國企業高層管理職位，擁有超過三十年雄厚的工作經驗。她曾為多個行業的企業制訂策略計劃和企業發展藍圖，負責策劃及推行機構管治制度，以及重整業務流程，從而建立和促進企業團隊，加強與業務夥伴的合作關係。

Mrs Mak has an illustrious career with more than 30 years of experience in senior executive positions in public organisations and multinational companies. She has specialised in developing strategic plans and corporate roadmaps, designing and enforcing corporate governance as well as re-engineering business processes with a wide range of companies and industry sectors, with a focus on driving and building effective development of team members and working relationships with business partners.



麥女士致力個人專業發展之餘，亦積極參與公共事務，歷任多個政府及公營機構的董事局及委員會成員，曾擔任香港電腦學會會長(1995-1998)，致力領導本地資訊科技業界。她曾任香港浸會大學理學院顧問委員會主席、職業訓練局資訊科技培訓及發展委員會主席、創新科技基金一般支援計劃評審委員會副主席、僱員再培訓局副主席、香港科技园董事局成員、香港學術及職業資歷評審局成員，以及社會福利諮詢委員會委員。

Besides her lifelong pursuit of professional excellence, Mrs Mak has also served on the executive boards and committees of numerous governmental, public and professional bodies including President of the Hong Kong Computer Society from 1995 to 1998. She was Chairman of the Advisory Committee of the Science Faculty of Hong Kong Baptist University, Chairman of Committee in Information Technology Training and Development at the Vocational Training Council, Vice Chairman of the General Support Programme Vetting Committee of the Innovation and Technology Fund, Vice Chairman of the Employee Retraining Board, Board member of the Hong Kong Science and Technology Parks Corporation, Member of Hong Kong Councils for Accreditation of Academic and Vocational Qualifications, and Member of the Social Welfare Advisory Committee.

麥女士積極推動資訊科技專業資歷認可，獲委任為教育局轄下的資訊科技及通訊行業「行業培訓諮詢委員會」主席，與業界代表成功制定行業的能力標準說明。麥女士更曾參與香港資訊科技專業認證局，與業界共同開發及推廣香港首個資訊科技專業認證計劃，以確立資訊科技從業員的專業地位。

Mrs Mak is also an advocate in advancing professional recognition for IT professionals in Hong Kong. She is the Chairperson of the Information & Communications Technology/Industry Training Advisory Committee under the Education Bureau of the HKSAR Government. Under her leadership, the Specification of Competency Standards for the IT industry was successfully developed. She was also Director In-charge of the Hong Kong Institute for IT Professional Certification, which pioneered the first IT Professional credentialing scheme in Hong Kong.

麥女士於1995年獲選為香港十大傑出青年，1999年被授予香港電腦學會院士；2002年獲香港特區政府委任為「太平紳士」；2007年榮獲香港特區政府頒發「榮譽勳章」；2008年獲職業訓練局頒發榮譽院士。

In recognition of her exemplary contribution to the IT profession in Hong Kong, Mrs Mak was presented the “Ten Most Outstanding Young Persons” award in 1995. In 1999, she was conferred as a Distinguished Fellow of the Hong Kong Computer Society. In 2002, she was appointed as a Justice of the Peace. In July 2007, she was awarded the “Medal of Honour” by the HKSAR Government. And in November 2008, she was conferred as Honorary Fellow of the Vocational Training Council.



張梓昌博士

Dr Lawrence Cheung Chi-chong

副總裁(科技發展)

Director, Technology Development

張梓昌博士具有超過25年研究及發展、管理及顧問經驗，其職責範圍涵蓋廣闊領域，包括科技研究及發展，以及汽車工業、智能電子、機械人和自動化、醫療器材、環境管理、智能物料、製造技術和測試服務等。

Dr Lawrence Cheung has more than 25 years of experience in research and development, consultancy and business. He manages a broad business portfolio on technological research and development as well as consultancy services in automotive, smart electronics, robotics and automation, medical devices, environmental management, smart materials and manufacturing technology, and testing services.

張博士現任香港無線科技商會副主席、香港電子科技商會名譽顧問、香港電子業商會執行委員、創匯商會執行委員、特區政府通訊事務管理局辦公室無線電頻譜及技術標準諮詢委員會委員、職業訓練局電子業及電訊業訓練委員會和技師訓練委員會委員。

He is currently Vice Chairman of the Hong Kong Wireless Technology Industry Association; Honorary Advisor of the Hong Kong Electronics and Technologies Association; an executive committee member of the Hong Kong Electronic Industries Association; an executive committee member of the Hong Kong Modern Enterprise Integration and Innovation Association; Member of the Radio Spectrum and Technical Standards Advisory Committee (SSAC) of the HKSAR Government Office of Communications Authority; Member of the Electronics and Telecommunications Training Board and Committee of Technologies Training at the Vocational Training Council.

張博士在加入生產力局前居於澳洲，在澳洲科學與工業研究組織(CSIRO)擔任高層研究職位。張博士畢業於澳洲蒙納殊大學，獲工程學學士(榮譽)學位和理學士學位，其後獲蒙納殊大學博士學位。張博士於1996年加入生產力局。

Prior to joining HKPC, Dr Cheung was living in Australia holding a senior research post at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia. He obtained Bachelor of Engineering (with honours) and Bachelor of Science degrees from Monash University in Australia. His doctorate degree was also from Monash University. Dr Cheung joined HKPC in 1996.

老少聰先生

Mr Gordon Lo Siu-chung

副總裁(企業管理)

Director, Business Management

老少聰先生具三十年管理及資訊科技顧問經驗，範圍涵蓋業務策略研究、方案評估、可行性分析、流程改造、系統整合、服務創新、供應鏈管理等。多年來主要的客戶有上市公司、製造商、零售商、銀行、電訊公司、公營機構及不同的政府部門等。

Mr Gordon Lo has more than 30 years of experience in business management and IT consulting. His portfolio spans strategic planning, solution evaluation, feasibility studies, process improvement, system integration, service innovation and supply chain management. Major clients include listed companies, manufacturers, retailers, banks, telecom companies, NGOs and various Government departments.

老先生在加入生產力局之前，曾在國際著名資訊科技顧問公司任職十多年。他現為商務及經濟發展局「零售業人力需求管理科技應用支援計劃」評審委員會主席、社會福利署「資訊科技聯合委員會」委員、香港工業總會「科技發展委員會」顧問、香港總商會「數碼資訊及電訊委員會」委員、香港電腦學會理事會理事、社會福利署獎券基金諮詢委員會成員、香港資訊科技專業認證局董事及香港品牌發展局理事會派任理事、香港跨境電子商貿總會顧問。

Prior to joining HKPC, Mr Lo worked in international IT companies for more than 10 years. He is currently Vetting Committee Chairman of Retail Technology Adoption Assistance Scheme of the Commerce and Economic Development Bureau; member of the Joint Committee on Information Technology for the Social Welfare Sector of the Social Welfare Department; advisor for the Technology Development Committee of the Federation of HK Industries; member of the Digital, Information and Telecommunications Committee of the Hong Kong General Chamber of Commerce; council member of the Hong Kong Computer Society; member of the Lotteries Fund Advisory Committee, Social Welfare Department; member of the Board of Directors, The Hong Kong Institute for IT Professional Certification; nominated member of the General Committee, Hong Kong Brand Development Council; advisor of Advisory Panel, Hong Kong General Chamber of Cross-border E-commerce.

老先生具備資訊科技專業人員認證(項目總監)。他獲取英國倫敦大學理學碩士學位及帝國學院文憑，於1997年加入香港生產力促進局。

Mr Lo is a Certified Professional IT Project Director (CPIT[PD]). He obtained a Diploma from Imperial College, London, and a Master of Science degree from the University of London. Mr Lo joined HKPC in 1997.





方湛樑
Mr Raymond Fong
環境管理部總經理
General Manager
Environmental Management Division



黃家偉
Mr Wilson Wong
資訊科技及業務流程部總經理
General Manager
IT and Business Process Division



李國強
Mr Thomas Lee
智能製造及材料科技部總經理
General Manager
Smart Manufacturing and
Materials Division

雷致行
Mr Derek Louie
汽車及電子部總經理
General Manager
Automotive and Electronics Division



李寶雄
Mr Clement Li
管理諮詢部總經理
General Manager
Management
Consulting Division

朱國平

Mr Stanley Chu

內部審計及風險管理總監
Head
Internal Audit and
Risk Management



李淑卿

Ms Flora Li

人力資源及行政部總經理
General Manager
Human Resources and
Administration Division



林芷君

Ms Vivian Lin

財務及採購部總經理
General Manager
Finance and
Procurement Division

生產力(控股)有限公司及珠三角的獨資企業

生產力(控股)有限公司成立於2003年7月28日，為珠三角區內港資企業提供橫跨價值鏈的綜合支援，協助企業提升卓越生產力。

為了達成上述目標，生產力(控股)有限公司於2004年在珠三角成立了生產力(東莞)諮詢有限公司及生產力(深圳)諮詢有限公司等兩家獨資企業。

生產力(控股)有限公司

董事局成員

林宣武(董事局主席)、蔡淑嫻、李國本、麥鄧碧儀、陳祖恒、黃志光

生產力(東莞)諮詢有限公司
生產力(深圳)諮詢有限公司

董事局

老少聰(董事局主席)、林芷君、任永權、麥鄧碧儀、張梓昌、譚錫榮

Productivity (Holdings) Limited and Wholly Foreign Owned Enterprises in the PRD

Productivity (Holdings) Limited was established on 28 July 2003 with the objective to promote productivity excellence through the provision of integrated support across the value chain of Hong Kong firms operating in the Pearl River Delta (PRD).

This objective is achieved through two Wholly Foreign Owned Enterprises (WFOEs) in the PRD, namely Productivity (Dongguan) Consulting Co. Ltd., and Productivity (Shenzhen) Consulting Co. Ltd., which were both incorporated in 2004.

Productivity (Holdings) Limited

Board of Directors

Mr Willy Lin (Chairman of the Board), Ms Annie Choi, Dr Delman Lee, Mrs Agnes Mak, Mr Sunny Tan and Mr Patrick Wong.

Productivity (Dongguan) Consulting Co. Ltd.
Productivity (Shenzhen) Consulting Co. Ltd.

Board of Directors

Mr Gordon Lo (Chairman of the Board), Ms Vivian Lin, Mr Patrick Yen, Mrs Agnes Mak, Dr Lawrence Cheung and Mr Alfonso Tam.

生產力科技(控股)有限公司

生產力科技(控股)有限公司在2004年9月1日成立，以協助生產力局將具有市場潛力的專利、技術及項目成果轉化為商品。該公司為研發成果提供直接有效的商品化平台，致力促進香港發展科技密集的經濟活動。

本年度，共舉辦了5次推廣活動，向業界介紹生產力局11項可供商品化的研發成果。這些活動吸引了68家公司參與，並與有意合作的業界跟進，將技術方案轉移到業界，使更多業界可以從生產力局的研發項目獲益。

董事局

林宣武(董事局主席)、蔡淑嫻、李國本、麥鄧碧儀、黃志光

HKPC Technology (Holdings) Co. Ltd.

HKPC Technology (Holdings) Co. Ltd. (HKPCT) was established on 1 September 2004 as a vehicle for the commercialisation of HKPC's patents, technologies and project deliverables with market potential. The Company aims to develop a new technology-based generation through providing a more direct and effective avenue to turn R&D deliverables into products.

During the reporting year, five marketing events were held to promote 11 technologies developed by HKPC which are now ready to be commercialised by industry. The events drew participants from 68 companies. Indications of interest are being followed up to transfer these technology solutions to industry so that more sectors can benefit from HKPC's development efforts.

Board of Directors

Mr Willy Lin (Chairman of the Board), Ms Annie Choi, Dr Delman Lee, Mrs Agnes Mak, and Mr Patrick Wong.

財務報告 FINANCIAL REVIEW

香港生產力促進局及其附屬公司全年截至二零一七年三月三十一日止的綜合賬目經由外部核數師「安永會計師事務所」審計，並獲發無保留審計意見書。綜合財務狀況表、綜合收支賬目及綜合全面收益表載於後頁。

The consolidated accounts for the year ended 31 March 2017 of Hong Kong Productivity Council and its subsidiaries have been audited by the external auditor (Ernst & Young) with a clean audit opinion. Extracts of the Consolidated Statement of Financial Position, Consolidated Income and Expenditure Account and Consolidated Statement of Comprehensive Income are set out in the following pages.

綜合財務狀況表

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

2017年3月31日 31 March 2017

		2017 港幣千元 HK\$'000	2016 港幣千元 HK\$'000
非流動資產	NON-CURRENT ASSETS		
物業、廠房和設備	Property, plant and equipment	197,328	199,213
無形資產	Intangible assets	7,146	10,033
聯營公司權益	Interest in an associate	1,545	1,512
非流動資產合計	Total non-current assets	206,019	210,758
流動資產	CURRENT ASSETS		
應收賬款、預付款項及按金	Accounts receivable, prepayments and deposits	61,049	60,152
銀行存款及現金	Cash at bank and on hand	310,444	290,961
流動資產合計	Total current assets	371,493	351,113
流動負債	CURRENT LIABILITIES		
應付賬款及應計費用	Accounts payable and accruals	229,717	236,702
應付聯營公司款項	Amount due to an associate	733	780
應付稅項	Tax payable	179	142
流動負債合計	Total current liabilities	230,629	237,624
流動資產淨值	NET CURRENT ASSETS	140,864	113,489
淨資產	Net assets	346,883	324,247
總資金	TOTAL FUNDS		
生產力局應佔資本資助金及儲備	Capital subvention fund and reserves attributable to the Council	345,515	323,057
非控股股東權益	Non-controlling interests	1,368	1,190
總資金	Total funds	346,883	324,247

綜合收支賬目

CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT

截至2017年3月31日止年度 Year ended 31 March 2017

		2017 港幣千元 HK\$'000	2016 港幣千元 HK\$'000
收入	INCOME		
經常性活動的政府資助	Government subvention for recurrent activities	218,908	214,513
服務收入	Service income	455,819	437,111
其他收入	Other income	11,172	7,925
應佔聯營公司利潤	Share of profit of an associate	33	60
		685,932	659,609
支出	EXPENDITURE		
職員薪俸	Staff emoluments	(360,426)	(357,226)
其他支出	Other expenses	(301,555)	(299,153)
除稅前盈餘	SURPLUS BEFORE TAX	23,951	3,230
所得稅	Income tax expense	(467)	(437)
		23,484	2,793
從資本資助金轉入	Transfer from capital subvention fund	19,324	24,902
年內盈餘	SURPLUS FOR THE YEAR	42,808	27,695
歸屬於：	Attributable to:		
生產力局	The Council	42,552	27,548
非控股股東權益	Non-controlling interests	256	147
		42,808	27,695

綜合全面收益表

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

截至2017年3月31日止年度 Year ended 31 March 2017

		2017 港幣千元 HK\$'000	2016 港幣千元 HK\$'000
年內盈餘	SURPLUS FOR THE YEAR	42,808	27,695
其他全面收益	OTHER COMPREHENSIVE INCOME		
可能於其後重新歸類至收支賬目的其他全面虧損：	Other comprehensive loss that may be reclassified to income and expenditure account in subsequent periods:		
換算中華人民共和國（「中國」）業務賬目的匯兌差異	Exchange differences on translation of financial statements of operations in the People's Republic of China ("PRC")	(848)	(8)
年內其他全面收益（稅後）	OTHER COMPREHENSIVE INCOME FOR THE YEAR, NET OF TAX	(848)	(8)
年內全面收益額	TOTAL COMPREHENSIVE INCOME FOR THE YEAR	41,960	27,687
歸屬於：	Attributable to:		
生產力局	The Council	41,782	27,587
非控股股東權益	Non-controlling interests	178	100
		41,960	27,687





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