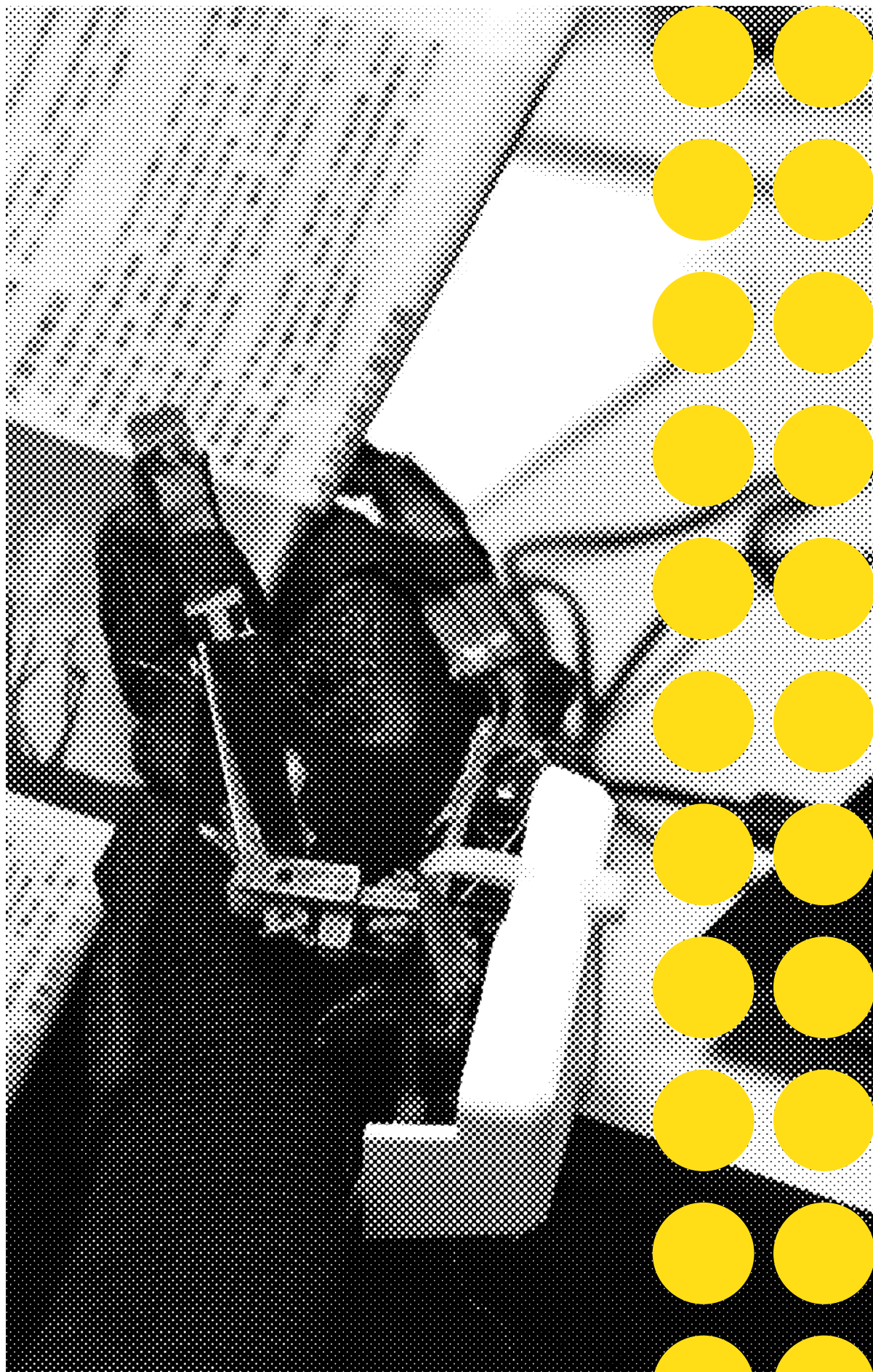


FALL 2017

FABRICA. WEAVE

THE EVOLUTION ISSUE



WITH NEW TECHNOLOGY,
SHOP LIKE YOU HAVE
NEVER SHOPPED BEFORE
借助創新科技 全新消費體驗

A SCIENTIST-
ENTREPRENEUR
科研型創業家

3D TECHNOLOGIES:
THE FUTURE OF TEXTILE
3D 技術：
紡織產品新可能

THE RAW MATERIALS
EVOLUTION
原料非常時期 嶄新開發方法

the
mills

fabrica
南豐作坊

Welcome to our newsletter! In each edition we bring you interviews, insights, and practical information about the startup world of fashion, textile, and technology.

感謝您閱讀南豐作坊的通訊！我們將送上不同的訪問與觀點，以及實用的業界資訊，助年輕創業家投入時裝、紡織與科技的世界。

FALL 2017

THE EVOLUTION ISSUE

演進號

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此乃中文譯本，如英文版本與此中文譯本有抵觸，以英文版本為準。

Cover image
Tremor-stabilizing exoskeleton glove
Photo by MedEXO Robotics
More details on page 7

封面圖片
穩定手顫的外置手套
MedEXO Robotics
詳閱第 7 頁

編者的話 —— 進化的時代

EDITOR'S NOTE — EVOLVE OR DIE

In the past, when it came to starting new businesses, most people would think of finance, shipping, and import-export industries. These industries still hold sway in Hong Kong, but opportunities are few and hard to come by for newcomers in these crowded fields.

Integrating new technologies is one way to stand out from the crowd. Similar to the taxi calling services of yesterday, today's mobile ride hailing platforms can now be worth over a hundred million dollars. Recently, a ride hailing company merged with a logistics company in mainland China and has plans to list in Hong Kong with an estimated valuation of HK\$8 billion, becoming one of Hong Kong's few unicorn startups.

The success of mobile ride hailing companies highlights the urgency of embracing and integrating innovation and technology for many industries. The September issue of Bloomberg Business Week (Chinese language edition) features a cover story on the rising number of tech researchers and professionals who are returning to China, pointing out big data and artificial intelligence as the areas with the most growth potential.

The Mills Fabrica has been supporting a new generation of techstyle entrepreneurs by bringing together entrepreneurial talent, technology, and the resources of Hong Kong's once illustrious textile industry in the hopes that greater economic benefits will emerge from the mix. "Evolution" is the theme for this issue's Fabrica.Weave, where we explore how innovative applications of new technologies can help textile manufacturing, fashion and other related industries increase production efficiency and improve product quality, as well as enhance a customer's retail experience.

Startup scene is constantly evolving and is no longer confined within industries. Collaboration across industries is key, with innovation happening at the intersections of textile manufacturing, technology and medicine, for example. MedEXO Robotic is one of The Mills Fabrica's incubatees, and its founder Denis Huen has combined a specially developed fabric with the integration of robotics to create a wearable robotic glove that reduces involuntary hand tremors for people suffering from Parkinson's disease. He shares the story of his company's development from startup phase up until now.

Fabrica's other incubatees, Origami Labs and EONIQ, also share the secrets to their early stage crowdfunding successes and continued development, allowing us to document the developments of Hong Kong's evolving entrepreneurial culture.

過去在香港談創業，往往令人聯想到金融、航運或進出口貿易生意。以上行業在區內仍然擁有一定優勢，可是多半已經飽和，未來需要面對充滿挑戰的瓶頸。

揉合創新科技是突破行業現狀的其中一個方法。就如以往靠電話口耳相傳的汽車電召服務，也可以成為一門市值過億的事業。某手機電召客貨車平台，最近與內地大型物流公司合併，並計劃在香港上市，以估值接近港幣 80 億元，晉身成香港少數的獨角獸公司。

手機電召平台的故事，令我們了解到很多行業需要融合創新科技突破困境。最新一期的中文版《彭博商業周刊》的封面故事，便提到大批從事科技行業的專業人才回流中國，更總結出大數據和人工智能是未來最具潛力的發展領域。

南豐作坊經常提到「新經緯產業」，我們希望聚集人才，並讓曾經叱吒一時的香港紡織業與科技結合，衍生出更大的經濟效益。這一期《Fabrica.Weave》的主題是「演進」，透過多個專題探討紡織、時裝及相關行業如何借助創新科技提升生產速度、產品質素；零售行業又如何藉著科技的力量，提升顧客的消費體驗。

創業的方向亦不斷演進，不再局限於單一產業閉門造車。紡織能跨範疇與科技和醫療等領域合作。像南豐作坊培育計劃的作坊公司 MedEXO Robotics，創辦人禰彥勳（Denis）藉特別研發的紡織物料及機械系統，為柏金遜症病人製造改善手顫情況的可穿戴機械手臂，他會在訪問中分享公司成立至今的發展。

同樣參與了培育計劃的 Origami Labs 和 EONIQ，會分享他們早前眾籌計劃的成功之道 —— 我們見證著初創公司的成長，也期望與本地創業文化一同進步、蛻變。

WITH NEW TECHNOLOGY, SHOP LIKE YOU HAVE NEVER SHOPPED BEFORE

Online shopping and virtual currency have been flourishing over the last decade in Mainland China, while cash is still the dominant payment method in Hong Kong. Some customers do not take part in the convenience because they are reluctant to change their shopping habits, or are worried about their sensitive information being used for other purposes. Therefore, privacy concerns overshadow the profitable opportunities of digital payment.

However, given that technology is integrated into the whole virtual shopping experience, covering marketing, payment, and shipping, if corporations can attain a balance between business ethics and commercial success. Not only are the new payment methods convenient for the customers but they are also beneficial for the whole retail industry.

借助創新科技 全新消費體驗



香港消費者習慣現金交易的傳統購物模式，而中國內地的網購、虛擬貨幣等業務的發展卻是一日千里。部分消費者對新興消費體驗卻步，一來因為不願意改變習慣，另一主因是擔心個人資料被盜用作其他用途，龐大商機背後潛藏著網絡安全的隱憂。

換個角度，科技影響著宣傳、付款以及付運等每一寸體驗，假若企業在應用科技時能平衡商業道德與社會責任，不但為消費者帶來方便，也同時推進零售行業的良性發展。



Image: Amazon

These are the figures that the customers may not notice:

這些是消費者購物時未必留意到的數據：

USD \$1,000,000,000,000



In 2016, the gross sales of global e-tailing exceeded a trillion US dollars.

全球電子零售總額在 2016 年突破 1 萬億美元。
(eMarketer.com)



88%

88% of customers see detailed product descriptions as essential while shopping online.

88% 的顧客認為網購時，產品的詳細描述非常重要。
(Forbes)

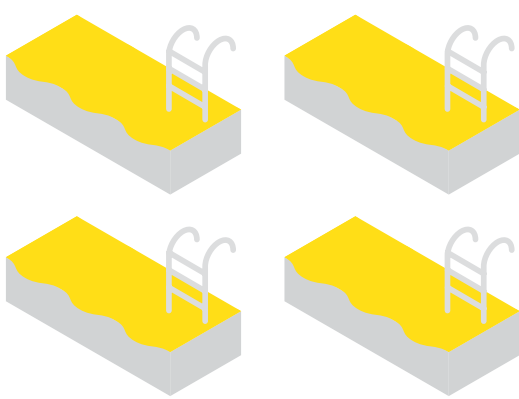
The retail industry spends 250 million gallons of ink each year on printing receipts (enough to fill 380 Olympic pools).

零售業每年用了 2.5 億加侖油墨印製收據 (可填滿 380 個奧運標準的游泳池)。

(Huffpost)



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250 MILLION GALLONS OF INK

380 OLYMPIC SIZE SWIMMING POOLS

YOUR PRIVATE STYLIST AT HOME

Fashion salespersons prefer to introduce themselves as "stylists," as their duties are not merely confined to selling, but also giving professional style advice. Nowadays, intelligent home systems can offer comparable personalized and unique experiences. Last spring, Amazon announced "Echo Look" - a new service that combines machine learning algorithms with advice from fashion specialists. With the front camera, the device records and stores users' fashion looks on the Cloud as encrypted images. Its "Style Check" function can suggest outfits according to factors such as colors or current trends. The data collected through this service will help Amazon better analyze users' shopping preferences as it is developing its own private-label fashion brands.

私人家居造型師

很多時裝店售貨員都會標註自己的身分是「Stylist」而非「Salesperson」，告訴客人他們的職責不只是達成銷售，還能夠為顧客提供專業的造型意見。現今智能家居系統，也可提供這般人性化的服務。Amazon 在春天發表的「Echo Look」結合了機器學習科技 (Machine Learning)，機器前方的鏡頭能紀錄用家的造型，上傳到雲端的圖片都經過加密。而「Style Check」功能，則根據服裝的顏色、當季潮流等指標，在兩個造型中建議出哪一個比較適合用戶。銳意進一步發展時裝市場的 Amazon，將透過機器收集所得資料，強化分析用戶購物喜好的能力。



AMAZON ECHO LOOK



Image : Amazon

FASHION MANUFACTURE BROUGHT TO LIGHT

The encryption technology blockchain was originally invented for the exchange of Bitcoins: instantly verifiable, easily traceable, and inalterable. Thanks to these advantages, blockchain is widely used in shared economy projects in developing countries, ensuring the trades are fair and open. In collaboration with Provenance, a blockchain service provider, the UK fashion brand Martine Jarlgaard, has recently launched a smartphone application that allows customers to trace back the manufacturing process of their clothes - the textile mills, their workers, and even the sheep that provided the wool. Are the products fair-trade? Were any animal harmed in the course of production? All the information is brought to light for the customers.

時裝生產透明化

區塊鏈 (Blockchain) 原本是用於比特幣 (Bitcoin) 加密交易的科技，能隨時驗證、追溯公開的資料，加上其難以被篡改的特性，不少社企在發展中國家推動共享經濟項目時，都會應用此科技，確保交易在公正、公開。英國時裝品牌 Martine Jarlgaard 與區塊鏈技術供應商 Provenance 合作，消費者能透過手機軟件追蹤產品每個生產環節，包括紡織廠、針織工人的資訊，甚至羊毛來自農場的哪一隻羊，務求消費者清楚了解商品是否在公平貿易、無傷害動物等原則下生產。



MARTINE JARLGAARD

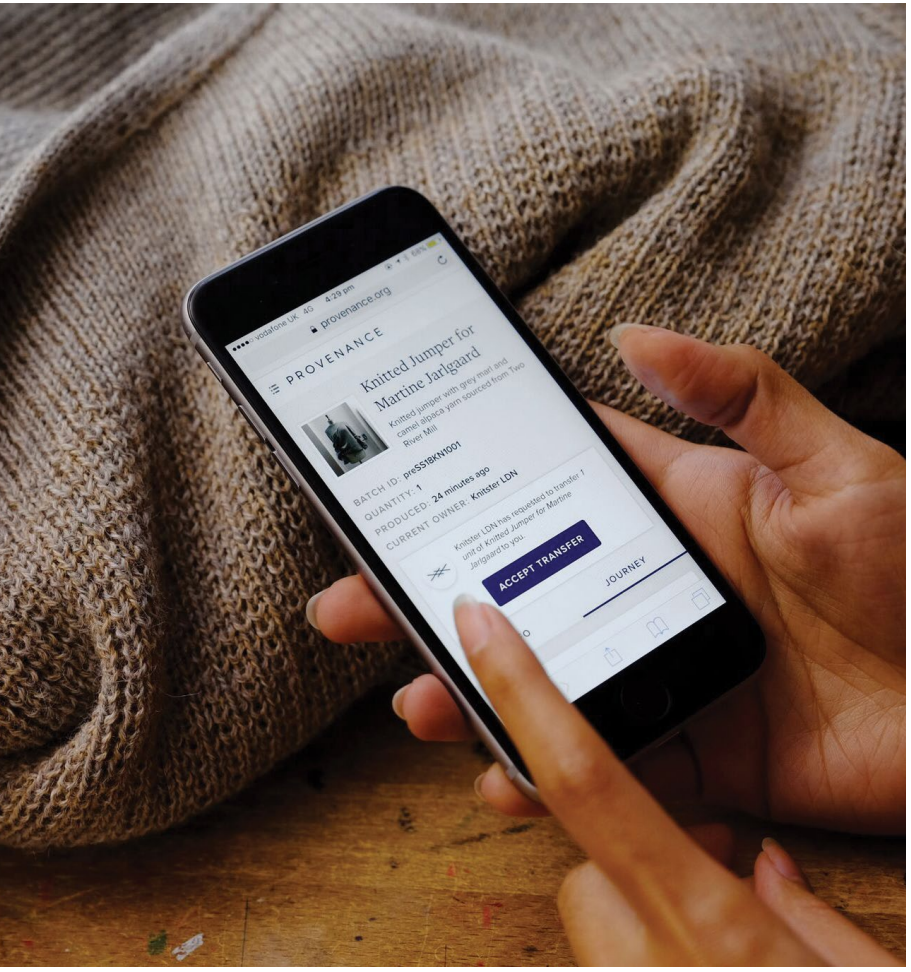


Image : Martine Jarlgaard, Provenance

STAFFLESS GROCERY

Earlier this year, Amazon managed to disrupt a centuries-old practice by creating the first staffless supermarket. "Amazon Go" uses technologies such as Sensor Fusion and Machine Learning, enabling customers to grocery shop without any human assistance. The system simply requires you to scan your identity barcode at the entrance, pick what you need, and off you go! All the purchases will be detected and directly charges to the customers' Amazon accounts.

Opened in July by Ant Financial (an affiliate company of Alibaba), Tao Café in Hangzhou is a cashierless coffee shop using facial recognition to track customers' orders. As they leave the restaurant, their bills will be automatically deducted from their Alipay accounts. A fried chicken fast-food chain has also been testing Alipay's "Smile to Pay" in selected stores since September.

無人實體店

今年初開幕的無人超市「Amazon Go」，應用了融合感測器（Sensor Fusion）和深度學習（Machine Learning）等科技，顧客先於門口掃描辨識身分的二維碼，離開店鋪時不需要真人付款，系統會在 Amazon 戶口裏自動扣款。阿里巴巴旗下的螞蟻金服在 7 月於杭州開設的「淘咖啡」也應用了類似的流程和技術，不同之處是淘咖啡增設了餐廳部分，利用人臉辨識科技取代侍應提供點餐服務，食完餐完畢離開餐廳時，系統會自動透過支付寶結帳。

某連鎖炸雞店也在 9 月份起，於部分店鋪試行支付寶的「刷臉支付」技術。



GREEN RECEIPT SYSTEM

We all have a love-hate relationship with "receipts". On the one hand, we need them as proof of our purchases in case we need to exchange or refund them. On the other hand, they become potential trash the moment we step out of the store. Even worse, the ink on the receipts fades with time and turns them into useless pieces of blank paper. Hoping to solve this dilemma, RECIPIO, a startup company from Hong Kong, launched a smartphone application of e-receipts. The app allows the retailers to deliver electronic receipts that can include terms and conditions as well as promotional messages to their customers. As for customers, the app prevents them from storing a pile of paper receipts and helps to categorize them for personal records.



綠色收據系統

收據是令人又愛又恨的產物：一方面你需要它證明你已經付款，當日後需要更換、退貨都要以此為證；但如果沒有退貨的需要，一路出店門收據便頓時成為廢紙。更無奈的情況是油墨褪色，收據被逼變為一張廢紙。有鑑於此，本港初創公司 RECIPIO 利用手機軟件取代紙張收據，除了發送電子收據，零售商還可以利用軟件羅列條款、發送促銷優惠的訊息。在顧客層面，不但避免錢包裏塞滿厚厚的收據，還可以利用軟件把收據分門別類，方便個人記帳。

MEDEXO ROBOTICS



Denis Huen, the founder of the startup company MedEXO Robotics, has been pursuing his career as a scientific researcher and as an entrepreneur simultaneously. In 2017, the researcher-entrepreneur finally decided to put his Ph.D. studies in the UK on hold to focus on the development of his product in Hong Kong - a wearable robotic glove that improves the hand tremors of Parkinson patients.

初創企業 **MedEXO Robotics** 創辦人禰彥勳（**Denis**）原本在英國攻讀博士，過去一直兼顧學業和事業。在魚與熊掌之間，這位「研究型」創業家最終在 **2017** 年初決定暫停學業，回港專注產品的研發工作，希望藉研發可穿戴機械手套，改善帕金森症患者手部顫抖的問題。

A SCIENTIST-ENTREPRENEUR

科研型創業家

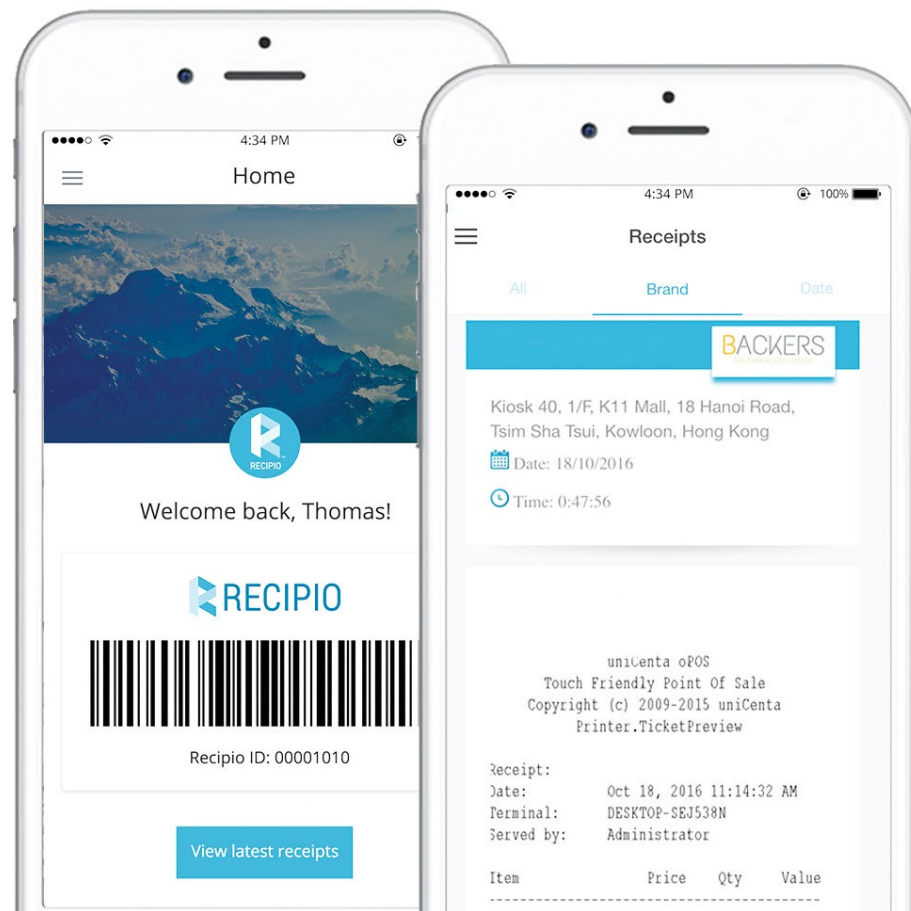
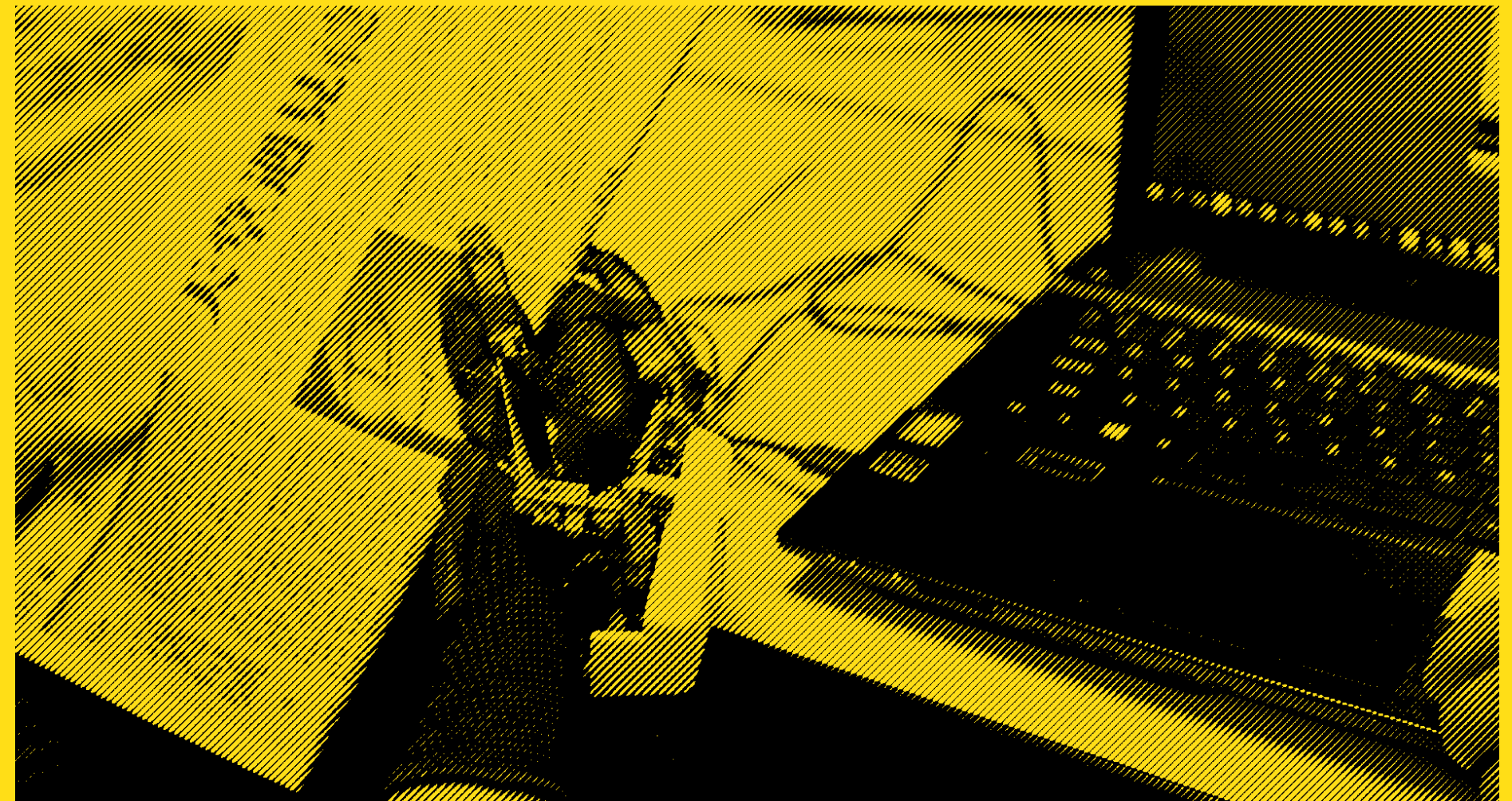
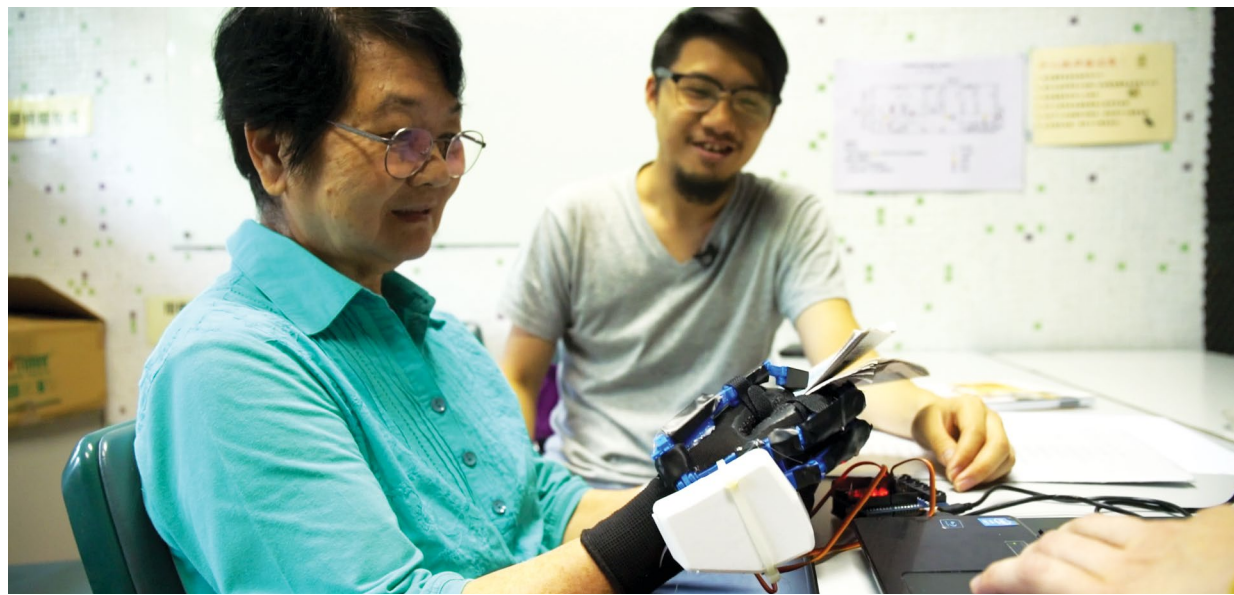


Image : RECIPIO

Image : Xin Hua News Agency



MOVING HOME TO MAKE A DIFFERENCE

The idea of the robotic glove emerged from Denis' master research. After graduating with a master's degree from Imperial College London, he came back to Hong Kong and pitched his idea at several competitions. The result was rewarding: he obtained the first seed fundings to launch his company and gather a team of like-minded friends. Soon after, they all went back to the UK to pursue their studies. Although Denis wanted to pursue both his academic and his entrepreneurial careers simultaneously, reality turned out to be more challenging than expected. Oxford University eventually agreed to let him take a one-year leave of absence to return to Hong Kong and devote himself to work on MedEXO Robotics.

Within a year, Denis hopes he can complete the development of the product and secure channels of distribution. Another reason for his return is his realization that the entrepreneurial environment in Hong Kong is better than in the UK, "At the beginning, I thought the business environment here was not ready for inventive startups, so I returned to my studies in the UK. I discovered later that there are plenty of resources in Hong Kong, so I decided to come back." For a period, Denis worked alone without any support. Now, MedEXO Robotics has joined The Mills Fabrica Incubation Program and Denis has three full-time employees to assist him in his product research and development with funding from Hong Kong Science Park.

回流香港 為事業衝刺

機械手套的想法源自 Denis 的碩士研究題目，他在 2015 於倫敦帝國學院碩士畢業後回流香港，並參加了不少投售比賽，獲得不錯的成績。取得公司的第一筆啟動資金後，開始找身邊志同道合的朋友建立研發團隊。後來，Denis 與其他成員相繼回英國繼續學業；一開始他以為可以一邊讀書、一邊進研發產品，可惜事與願違，最終決定與牛津大學達成停學一年的協議，回港專注發展 MedEXO Robotics。

一年時間說長不長，說短也不短，他說希望爭取時間完成產品研發，再為產品尋找銷售渠道。另一個回流香港的主因，是他觀察到香港創業環境比英國理想：「當時覺得本地創科風氣未夠成熟，因此決定回英國讀書。後來發現香港有不少資源，因此決定回港發展。」Denis 曾經有一段時間需要孤軍作戰，沒有穩定的團隊支援他的工作。而 MedEXO Robotics 現在參與了南豐作坊的培育計劃，並得到科學園的資助，聘請了 3 名全職員工協助他研發產品。



ADVANTAGES OF THE HEALTHCARE INDUSTRY IN HONG KONG

Denis enjoys a lower cost of living in Hong Kong than in the UK. An example is the "cheap meal" at the university canteens that he jokingly mentioned. But more importantly, it is easier and lower cost to purchase mechanical components from China, which reduces development costs. "For the same part, prices on a UK website can be ten times higher than in China. Although many manufacturers are from Europe, their products are made in China. Here, I can buy the same components in Shenzhen at much lower prices," he explains. Moreover, he can visit factories in Mainland China to create the product prototype anytime he wants. Given that all of these were impossible in the UK, product development process is undoubtedly faster here in Hong Kong.

According to projections by the Census and Statistics Department of Hong Kong, the elderly population will rapidly increase so that by 2056, people aged over 65 or above are expected to make up 36% of the city's total population. The United Nations 2015 report estimates that in China, the population aged 60 or above will total 200 million by 2050. The aging society creates a growing demand for healthcare services. As Business Insider predicted in May 2016, the gross value of IoT Medical Tech market will go up to USD 400 million in 2022. Riding the tide of blooming innovative health business, Denis believes that Hong Kong-based companies, including MedEXO Robotics, have the upper-hand in searching for business partners and expanding into the Chinese market.

本地優勢 探索醫療市場

香港生活成本比英國低，Denis 笑言現在不但可以回大學吃「二十元類飯」，加上鄰近中國內地，採購機械零件比過往方便和便宜，節省不少研發成本：「購買一樣的零件，英國和內地網站的價格能相差 10 倍。即使生產零件的公司總部在歐洲，其實都是在中國製造，那我不如直接去深圳採購類似零件，肯定便宜得多。」此外，Denis 在英國時，由於當地沒有工廠生產類似產品，間接影響了研發的進度；反而現在留在香港，能隨時到內地的工廠商討手套原型的製作事宜。

根據香港統計處今年公布的人口推算，本地的人口將會急速老化，預計 2056 年 65 歲以上的人口佔總體 36%；而聯合國經濟和社會事務部於 2015 年發表的報告，則預測中國在 2050 年，60 歲以上的人口將高達 2 億人，是全球老齡人口最多的國家。隨著人口老化，全球對醫療服務的需求將會越來越高。美國網站《Business Insider》曾經在去年 5 月的報導中預測，全球物聯網醫療科技市場在 2022 年，將總值 4 億美元。面對前景樂觀的創新醫療事業，Denis 坦言香港公司尋找合作夥伴或開拓中國市場時，將擁有地理上的優勢。

**"I DISCOVERED
LATER THAT THERE
ARE PLENTY OF
RESOURCES IN
HONG KONG, SO I
DECIDED TO COME
BACK."**

**「後來發現香港有不少資源，
因此決定回港發展。」**

MEDEXO ROBOTICS



Denis describes the Wearable Robotic Glove as a "total package". Its mechanical system creates resistance that diminishes problems caused by hand tremors. Moreover, its well-thought out design fulfills daily needs of Parkinson's patients:

Denis 形容這是一件「由內至外」的產品，除了透過機械系統產生阻力舒緩手顫問題，也在產品的設計上也花了不少心思，鼓勵病人積極生活：

WATER-RESISTANT
USERS CAN EASILY HANDLE HOUSEHOLD TASKS INVOLVING WATER.

BREATHABILITY
SINCE NON-POROUS TEXTURES CAUSE DISCOMFORT, CHOOSING BREATHABLE MATERIALS IS ESSENTIAL.

SOFTNESS
MADE OF FABRICS AS SOFT AS CLOTHES, THE GLOVE IS COMFORTABLE ENOUGH FOR DAILY USE.

防水
家居生活難免會沾到水，防水設計能切合他們的實際需要。

透氣
不透氣是造成患者不適的主因，因此排汗性能非常重要。

柔軟
會選用接近衣服材質的布料，避免帶來突兀的感覺。



INDEPENDENCE
DESIGNED TO BE PUT ON SINGLE-HANDEDLY, THE GLOVE HELPS USERS TO REGAIN THE ABILITY TO CARE FOR THEMSELVES.

LIGHTNESS
IN ORDER TO BE PRACTICAL, THE WEIGHT OF THE GLOVE IS CAREFULLY CONTROLLED.

APPEARANCE
THE MODEST LOOK OF THE GLOVE AVOIDS UNWANTED ATTENTION.

自主
以方便患者為自己帶上手套為原則，提升他們自理能力。

重量
為了不增加手顫患者的負擔，需要控制物料重量。

外觀
設計盡量低調，讓患者戴上手套也能如常人生活。

“EXISTING HEALTHCARE EQUIPMENT FOR DISABLED PEOPLE IS COMPLICATED TO USE. IT REQUIRES THE ASSISTANCE OF A CARETAKER. BUT I HOPE PATIENTS CAN REGAIN THEIR INDEPENDENCE AND TAKE CARE OF THEMSELVES WITHOUT A THIRD PERSON'S HELP.”

IMPROVE HAND TREMORS WITH COMFY GLOVES

Denis hopes to create a new image for medical instruments - no longer mechanical and hard, but comfortable and soft. To do so, he hired a fashion designer who is responsible for the appearance of the glove. "It is different from the normal procedure of product design. Since the robotic mechanism of the glove is very complicated, a slight change of the interior will cause a big change on the exterior, such as affecting the thickness of the glove." This is when the fashion designer intervenes. While the glove has to be thin, light and unemphatic, we have specific selection criteria for the fabrics: they need to be breathable, waterproof, quick-drying, and soft. The aim is to create a robotic glove comfortable enough to wear every day.

Robotic glove technology can be applied to broader uses including helping paralyzed or stroke patients, and even assisting workers to lift or move heavyweight items, says Denis. In collaboration with the social work department of a local university, he has invited a group of patients with spinal cord injuries and self-care deficiencies to test the product, in the hope of helping them regain increased independence. "Existing healthcare equipment for disabled people is complicated to use. It requires the assistance of a caretaker. But I hope patients can regain their independence and take care of themselves without a third person's help."

手套舒適 改善手顫病況

Denis 希望淡化「醫療器材」在大眾心中冷冰冰的形象，為了讓病人使用手套時感覺自在，團隊裏有一名時裝設計師，專門負責手套外觀：「這跟一般產品設計不同，手套的機械系統複雜，只要結構稍有改動，都會影響到手套的厚度。」因此他們需要設計師的幫助，保持手套外型纖薄、輕巧、不突兀；採用的物料也有一定要求，會循環透氣、防水、排汗、柔軟度等方向選擇合適的布料，務求病人戴上手套後像穿衣服般舒適。

產品面世有期，Denis 說手套的技術不但減輕帕金森症患者的手顫情況，還能應用在癱瘓和中風病人身上，甚至能協助工人搬運、起重貨物。他現在正跟香港一家大學的社工學系合作，找來一班脊椎受傷、自理能力受影響的病人測試產品，幫助他們重拾生活：「現在市面上的設備都很複雜，需要家人和護理人員幫忙配戴。但我希望病人有自主性，不用依靠第三者幫忙，都能夠獨立地生活。」

DENIS HUEN
楊彥勳

Founder of MedEXO Robotics

MedEXO Robotics 創辦人

WWW.MEDEXOROBOTICS.COM

ROBOTIC GLOVE FOR EVERY DAY

3D TECHNOLOGIES: THE FUTURE OF TEXTILE

3D printing has been a hot topic lately. A video titled "3D Printed House" has gone viral on Facebook since March. However, one user's comment "Say goodbye to your jobs, construction workers" stirred hundreds of responses and made us wonder: Will 3D technologies steal jobs from humans or improve our lives by taking care of routine duties?

Without a doubt, 3D printing and automated production helps reduce costs and waste in the textile and fashion industries. Examples below show us how these technologies can be used to make fine, durable, resistant and unexpected products.

3D 技術： 紡織產品新可能

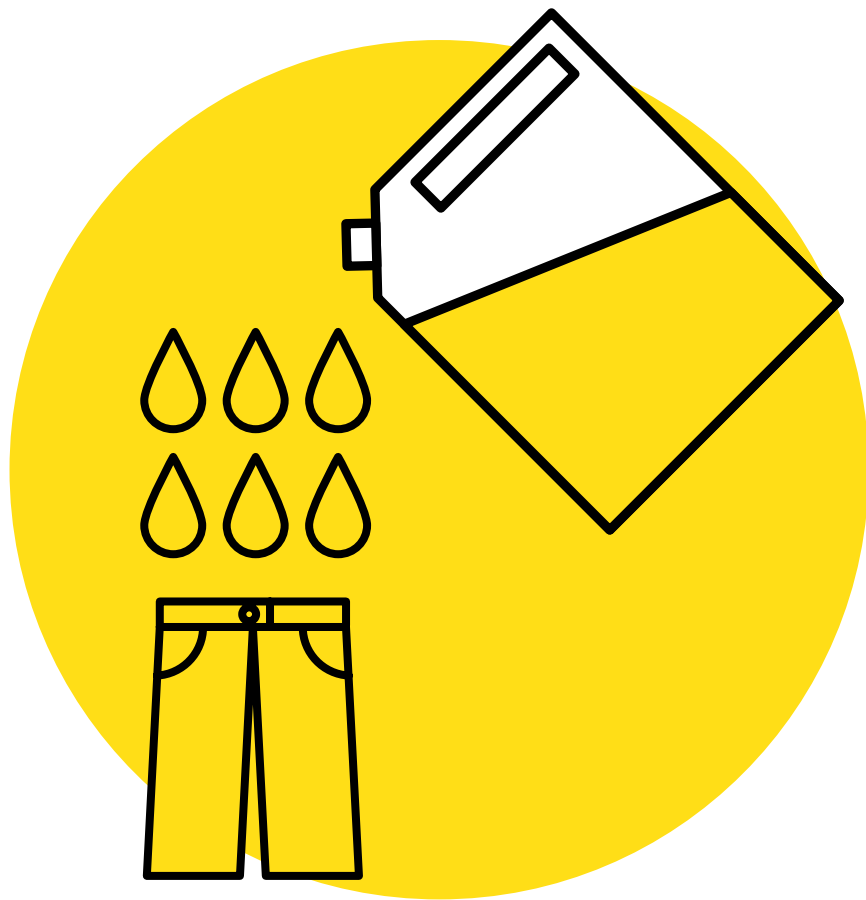


3D 打印向來是 Facebook 上的熱門話題，一段「3D 打印平房」的視頻，更加由 3 月份一直被廣為轉發到現在。視頻底下的一則留言「Say goodbye to your jobs, construction workers」，引起過百則回應，引人反思：到底種種 3D 技術是「掠奪」了人類的工作，還是改善了人類的生活、把人類預留作其他更有意義的崗位？

我們不得否認，3D 打印和自動化生產，減少了紡織和時裝行業的成本與浪費，以下這幾個例子便藉相關技術生產出更精準、穩定，甚至是令人意想不到的產品。

18,930 LITRES

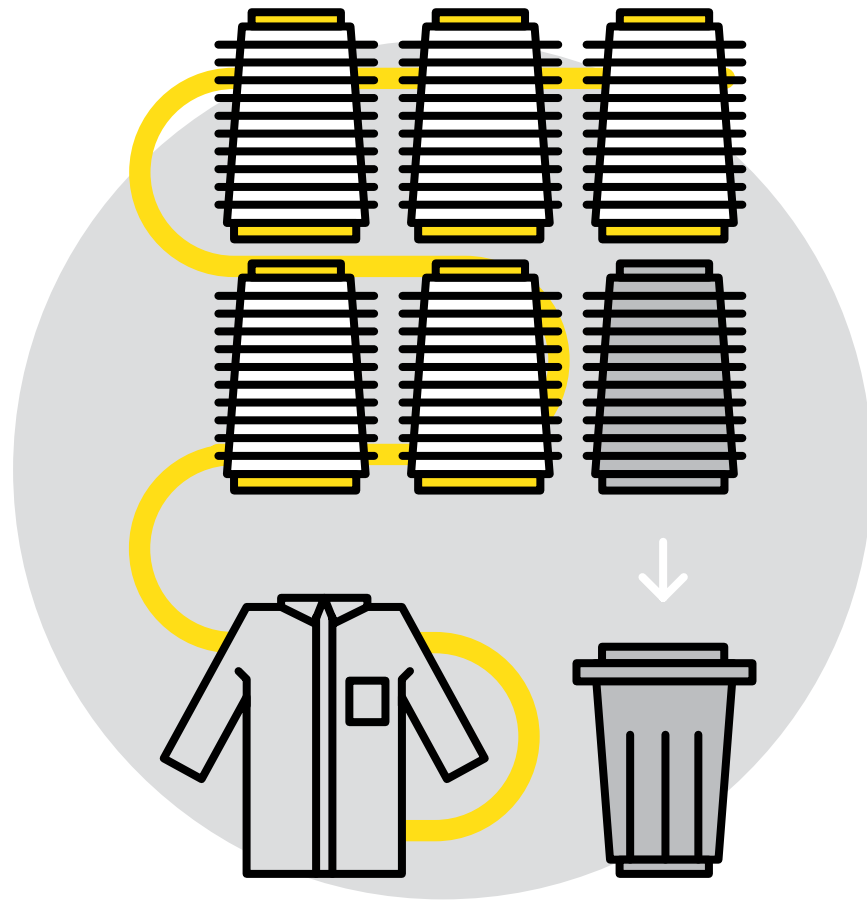
15% WASTE



For every pair of jeans made, over 18,930 litres of water is wasted.

製造一條牛仔褲，浪費超過 18,930 公升的水。

(Forbes/Sculpteo, 2016)



At least 15% of fabrics are cut and threw away in a textile mill.

在製衣廠裏，至少有 15% 布料在裁剪過程淪為廢物。

(Timo Rissanen, 2005)

TAILOR-MADE WITH NO SEAMSTRESS

無裁縫訂製服

UNSPUN

UNSPUNTECH.COM

Image: UNSPUN



Founded in San Francisco, the startup UNSPUN is ready to amaze the Hong Kong fashion and textile industry with its advanced 3D printing technology. Finalists at the "Sensors and Advanced Materials" Jumpstarter 2017 startup competition, UNSPUN introduced the innovative "Fit Learning" - a body scanning technology that only takes 15 seconds to obtain accurate measurements necessary to enable 3D Printing. In combination with a specific 3D textile printer developed in-house, they can produce well-fitting and durable garments according to one's specific measurements. The company expects this production method to cut 40% of the greenhouse gas emissions from the manufacturing process, as well as reduce fabric waste by 15%. UNSPUN plans to bring their 3D customized garments to the public by the end of 2017 at US\$250 a piece.

來自美國三藩市、準備來香港發展的初創公司 UNSPUN，是創業比賽 JUMPSTARTER 2017「傳感器及先進物料」系列的決賽隊伍。他們研發的「Fit Learning」技術，只消 15 秒便可以完成 3D 掃描。得到精準的身體尺寸後，再利用他們開發的 3D 紡織打印機，製造出更合身、更耐穿的服裝。他們預計這種模式能減少紡織過程中 40% 的碳排放量，也會減少 15% 製造成衣時所產生的裁剪廢料。UNSPUN 預計在 2017 年年底開始投入生產，每件訂製衣服的價格約美金 250 元。

VIRTUAL FASHION SAMPLES

虛擬衣服樣板

BROWZWEAR

BROWZWEAR.COM

Image: BROWZWEAR



Even though it is not an application of 3D printing or automated production, virtual fashion samples apply the concept of 3D technology and reduce cost for corporates. To ensure the sizes are correct, fashion manufacturers need to produce clothing samples, which involves professionals such as fashion sample makers. However, the Singapore-based technology company, BROWZWEAR, has developed "LOTTA", "VSTITCHER", and "STYLEZONE" - three products that serve the functions of design, product development and showcasing respectively. With the help of technology, corporates can create 3D graphics that closely resemble the actual products. This way, manufacturers do not have to produce samples unless necessary. Production cost and wastes are also reduced.

雖然這並不是 3D 打印或者自動化生產的例子，但同樣應用了 3D 概念，為企業減省不少成本：為了確認產品的尺寸無異，生產服裝都會需要製作樣板，從而衍生出樣板師傅等專門職業。新加坡為基地的科技公司 BROWZWEAR，研發了「LOTTA」、「VSTITCHER」和「STYLEZONE」三款產品，分別提供服裝設計、產品研發和服裝展示室的功能。企業借助他們的產品，能導出像真度極高的 3D 圖像，客戶可以必要時才製作樣板，也減低製作實體樣板的成本與各種浪費。



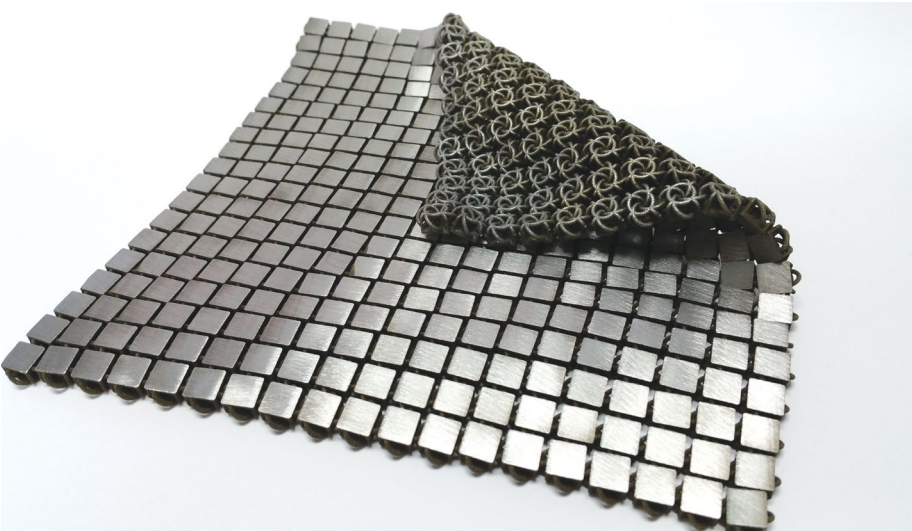
PRINTING IN SPACE

太空紡織任務

NASA

WWW.NASA.GOV/FEATURE/JPL/SPACE-FABRIC-LINKS-FASHION-AND-ENGINEERING

Image: NASA



Raul Polit Casillas, systems engineer at NASA's Jet Propulsion Laboratory in Pasadena, California, invented a 4D printing technology that can be used in space. Besides producing spacesuits, it can also fabricate the ultra-strong shell of spaceships to withstand meteorite impacts. In the 20th century, mass production dominated the manufacturing industry. But in the future, we will not merely manufacture items but also its functions. The term "4D" indicates this new aspect of production: according to the needs and situations, the printer can "encode" the required functions in the fabrication stage into foldable and transformable materials. NASA hopes its astronauts will be able to print necessities such as spare parts from recycled materials, thus helping to solve critical issues in space.

美國太空總署（NASA）噴射推進實驗室（JPL）的系統工程師 Raul Polit Casillas，研發了一種能夠在太空裏使用的「4D 打印」技術，能用於製造太空衣外，還可以用作太空船抵擋隕石的堅硬物料。他們說大量生產（Mass Production）主導了20世紀的製造業，隨著科技的進步，未來製造業不但要製造產品，還要生產「功能」。這種技術能稱之為「4D」，不只因為能打印可摺疊、變形的物料，還能按照情況把所需性能一應「編寫」進物料之中。NASA 期望未來太空人能在執行任務時，可以自行循環利用舊物料打印所需用品，有助他們被困太空艙時能隨時自救。

ROBOTICALLY WOVEN SOCIAL SPACE

機器交織社交空間

LUMEN

WWW.JENNYASBIN.COM/LUMEN

Image: Jenny Sabin



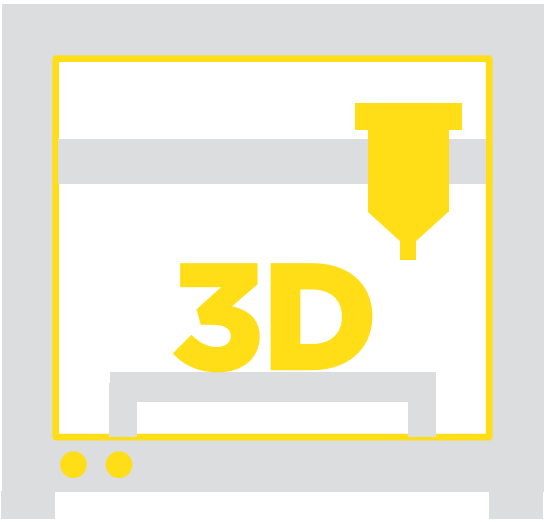
We love exploring the relationship between textile and architecture. Recently, the winner of MoMA PS1's annual Young Architects Program (YAP), Jenny Sabin, has introduced "Lumen" - a large-scale canopy structure made of textiles. With the Digital Knitting technology, she fabricated numerous cellular canopies out of recycled textiles and photo-luminescent yarn and turned them into an enormous sunshade structure. Over the course of the day, the responsive textiles absorb sunlight and emit blue, violet, and pink glowing light after sundown. Under the canopies, a proximity responsive misting cooling system and hundreds of robotically woven spool chairs make Lumen an ideal social space for the public to spend the hot summer.

我們一直分享紡織與建築之間的可能性，最近美國 PS1 當代藝術中心年輕建築師計劃（MoMA PS1 YAP）的勝出者 Jenny Sabin，便於博物館外搭建了一座用紡織物為建材的大型帳篷「Lumen」。她把回收得來的吸光物料，利用自動數碼編織（Digital Knitting）技術生產了過千組部件，再縫合成一座能夠阻擋日光的網狀帳篷；加上帳篷內置的噴霧裝置，為參觀者在炎炎夏日提供一個消暑的空間。至於白天吸收了陽光的光線，晚上會發放藍、紫和粉紅色的光線，成為鼓勵公眾聚集互動的公共空間。至於場內的椅子，都是由機器人利用廢棄物料「一手一腳」編織而成。



TRENDS IN 3D PRINTING

3D 打印趨勢



North America is the most significant market of 3D printing materials.

北美洲是全球最大的 3D 打印物料的市場。

(The Guardian/Markets and Markets, 2016)



A growth of 266% is expected for the 3D printing business in 5 years.

3D 打印業務在未來五年會有 266% 的增長。

(The Guardian/Markets and Markets, 2016)

In 2021, the gross value of the global 3D printing business will reach USD 1.5 billion.

直到 2021 年，全球 3D 打印業務將總值近 15 億美元。

(The Guardian/Markets and Markets, 2016)



Around 60% of key industry leaders develop their products using 3D printing.

接近 6 成具影響力的業內人士，採用 3D 打印研發產品。

(Forbes/Sculpteo, 2016)

60%



93% industry specialists believe that the application of 3D printing is the most competitive strategy today.

93% 的業內人士，認為 3D 打印技術是具競爭力的策略。

(Forbes/Sculpteo, 2016)

93%

TOP 5 TIPS FOR RUNNING A SUCCESSFUL CROWDFUNDING CAMPAIGN

Students from Shau Kei Wan East Government Secondary School won the Grand Prize in The Mills Summer Program with their "MFB 5.0" backpack designed for family outings. Whether by students or entrepreneurs, all innovative ideas deserve support and need to be tested and refined.

As crowdfunding platforms are a great place to gauge the market potential of a new product, The Mills plans to help the winners of The Mills Summer Program run their first crowdfunding project, so we asked CEO and Co-Founder of Origami Labs Kevin Wong and EONIQ founder Quinn Lai to share the secrets of their successful crowdfunding campaigns.

過來人經驗談
眾籌 5 件事你要知



筲箕灣東官立中學的同學按照親子需要所設計的戶外背包「MPB 5.0」，得到「南豐紗廠新經緯暑期作業」比賽大獎 — 不論是中學生還是初創企業的產品，任何形式的創新都值得受到支持，也當然需要經過市場的洗禮才能了解箇中不足，而眾籌平台便是其中一個測試市場反應的方法。

南豐紗廠將會協助同學計劃人生中首個眾籌項目。到底這被受初創圈子關注的募資方法，有甚麼需要注意的地方？又是否一定成功？Origami Labs 行政總裁黃家恒 (Kevin) 和 EONIQ 的創辦人黎鈞國 (Quinn)，為讀者分享他們早前在眾籌網站上成功募資的經驗。

* EONIQ and Origami Labs are The Mills Fabrica incubatees
* EONIQ 及 Origami Labs 為南豐作坊培育計畫的作坊公司



LEARN FROM OTHER CAMPAIGNS
參考其他眾籌項目

1

EONIQ and Origami Labs met their crowdfunding goals within 90 minutes and 7 hours of launch respectively. EONIQ raised a total of HK\$3 million, while the ORii ring raised almost HK\$2.7 million. These success stories let people think that crowdfunding platforms are a quick and easy way to raise funds. What they don't see is the amount of time and effort that went into creating these successful campaigns. Before launching his campaign, Quinn spent months watching and studying two to three pitch videos a day, noting down their respective strengths and weaknesses so that he could create the most effective pitch video for his product.

EONIQ 和 Origami Labs 分別在 90 分鐘和 7 小時內達到眾籌目標，前者最後籌得超過港幣 300 萬元，Origami Labs 也得到近港幣 270 萬元的支持。很多人看到成功個案後，都會把眾籌當成是快速募資工具，其實成功背後付出了不少時間和心血。Quinn 在推出眾籌計劃前，每天都會抽空研究 2 至 3 段的投售視頻 (Pitch Video)，詳細記下每段視頻裏可取和無趣的內容。這當然不是鼓勵大家東施效顰，而是消化別人的優勝之處後，再因應自己的產品加以參考。

INVEST IN MARKETING
宣傳效力

2

Startups are often great at product development, but at a loss when it comes to sales and marketing. While startups may have a person in charge of business development and promotion, they often underestimate the amount of human and other resources required to carry out an effective campaign. Kevin suggests budgeting for videography and public relations professionals before launching a crowdfunding campaign. Most campaigns cite media coverage, which not only increases the trustworthiness and credibility of the campaign, but also creates momentum. Quinn pointed out that there was a significant boost in pledging on the day local online media covered the campaign. In the end, Hong Kong contributed to 30% of EONIQ sales.

初創企業往往很熟悉自己的產品，對公關和市場行銷卻一頭霧水。即使有人負責相關事宜，不過宣傳需要極大人力和物力，新公司未必有足夠人手應付相關工作。Kevin 建議啟動眾籌前，預留開支聘請公司負責拍攝視頻和宣傳的工作。此外，多數眾籌項目都會列明曾經被甚麼媒體報導過，這不但增加項目的真確性和說服力，也會帶動實際收益。Quinn 便提到本地網媒的報導刊出當天，銷售額注增加，最終 EONIQ 香港的銷售額佔整體 30%。

5 TIPS FOR SUCCESSFUL CROWDFUNDING CAMPAIGN

ATTRACT CUSTOMERS
動員能力

3

Facebook and Instagram are effective platforms to attract customers, and Kevin emphasizes the importance of creating buzz on social media and making sure people can click on a "Buy" button that leads them directly to the crowdfunding campaign. Most customers are not friends, so how does one create a community of supporters? Quinn suggests starting with one's own network. Quinn's team didn't just share the campaign on their own Facebook page, they also encouraged their friends to do the same. Your friends may not be interested in buying your product, but by sharing your crowdfunding campaign with your network, you immediately gain free publicity to a much wider audience.

Facebook 和 Instagram 是動員消費者的最佳平台，Kevin 強調在社交媒體製造話題的重要性，要想盡辦法吸引讀者按下「BUY」按鈕，將他們直接導向眾籌網站。可是顧客都是陌生人，該如何建立支持群眾？Quinn 提議由身邊朋友開始。當時 Quinn 的團隊不但在個人 Facebook 上分享眾籌項目，更邀請身邊每位朋友參與其中。他們未必願意買你的產品，只需在 Facebook 上分享你的眾籌項目，便頓時有幾百人幫你免費宣傳。

IDENTIFY YOUR TARGET CUSTOMERS
認清目標顧客

4

Even though crowdfunding platforms are international in reach, consumers in different countries have their own distinctive cultures and habits. Quinn points out that Hong Kong people are willing to spend 10 to 15 seconds watching a video, whereas the attention span of Americans may only last a couple of seconds. Thai people on the other hand, value strong storytelling and are willing to watch a 5-minute ad. So startups need first to decide which markets to target before coming up with a marketing plan. Using the products designed by the participants of The Mills Summer Program as an example, Kevin recommends to focus on Hong Kong, Macau, and Taiwan by tailoring the marketing message for these markets.

雖然眾籌網站是跨國平台，但每個國家的消費者都有迥異的文化和習慣。Quinn 以投售視頻為例，香港人願意花 10 至 15 秒時間觀看，美國人可能只有耐性看頭兩秒；相反地，泰國人極度著重廣告故事性，超過 5 分鐘的視頻也會把它看完。因此初創企業宜先決定產品的主攻市場，才決定宣傳策略。Kevin 以新經緯暑期作業的得獎作品為例，這類小試牛刀的項目不妨專注港、澳、台三地市場，再配合適當的宣傳，可能有令人意外的成績。

MAKE YOUR PITCH VIDEO LAST
最後才拍投售視頻

5

Everyone knows how important the pitch video is to a crowdfunding campaign's success which is why this is what people usually start with. Kevin, however, recommends leaving the most important task for last, because a lot can change during the product development process. He suggests waiting until the product's key attributes are confirmed before creating the pitch video. It's much easier to win customers with a clear and accurate depiction of the product, and because some customers only have a two-second attention span, Quinn suggests starting with the product's key selling points.

大家都知道投售視頻是眾籌最重要的一環，因此很多人一開始就埋頭準備拍攝工作。可是越重要的事情，不妨最後才做：Kevin 提醒大家，產品研發的過程不能避免不穩定因素，適宜多花時間了解自己的產品，當產品的特性塵埃落定後，才決定視頻的脈絡，拍出來的成果自然更清晰準確，更容易抓住潛在顧客的心。此外，上文提到有些消費者可能只有「兩秒耐性」，所以 Quinn 提醒讀者，必須在視頻的第一幕帶出產品最大賣點。



KEVIN WONG
黃家恒

Founder of Origami Labs

Origami Labs 創辦人



QUINN LAI
黎均國

Founder of EONIQ

EONIQ 創辦人

THE MILLS WEAVING THE COMMUNITY

Fabrica and MILL6 Foundation, two of The Mills' pillars, organize different activities in collaboration with various partners to connect the dots in the community and explore the possibilities of the techstyle industry.

南豐紗廠 交織社群

南豐紗廠的兩大支柱南豐作坊和六廠基金會，透過不同活動與多方夥伴合作，旨在連結社區不同群體、探索新經緯產業的可能性。



THE MILLS SUMMER PROGRAM FINAL PRESENTATION

南豐紗廠新經緯 暑期作業畢業報告

Over the summer, 25 students from six secondary schools participated in The Mills Summer Program, co-organized with Big Education Platform Edu 2.1, Our Hong Kong Foundation and Wofoo Social Enterprises. Through the product development process of buying materials, designing and prototyping a product, students honed their communication and problem-solving skills, gained a sense of accomplishment, developed team spirit, grew more independent, and received some career inspirations.

Participants presented their product prototypes on 18 August to a panel of judges that included SK Choi from Big Education Platform, Origami Labs founder and CEO Kevin Wong, EONIQ founder Quinn Lai and Cherry Chan from The Mills. The team from Society of Boys' Centre Hui Chung Sing Memorial School won the Creative Prize with their "Ultra Rain Set" that combines a backpack with a raincoat. The team from Shau Kei Wan East Government Secondary School won the Grand Prize with "MFB 5.0", a multi-purpose backpack for outdoor use that includes a picnic mat and bags of different sizes.

The Mills will help the prize-winning team refine their designs and bring their product to market on a crowdfunding platform. Details about the program can be found on The Mills Fabrica's Facebook page.

來自 6 家學校的 25 名中學生，在暑假期間參與了南豐紗廠與大教育平台、團結香港基金以及和富社會企業合辦的「新經緯暑期作業」。活動鼓勵同學在採購物料、設計產品及製造樣本的過程，建立溝通技巧、解難能力、成就感、團隊精神及自力更生的態度，並期望能幫助他們規劃職業生涯。

參與同學在 8 月 18 日匯報成果，由南豐紗廠的代表陳卓卓、大教育平台代表蔡崇機、初創企業 ORii 行政總裁黃家恆及 EONIQ 創辦人黎鈞國擔任評判。香港扶幼會許仲繩紀念學校為創意獎得主，其作品是將背包和雨衣合而為一的「Ultra rain set」；而筲箕灣東官立中學的隊伍，憑能分拆出多個背包和野餐墊的多用途戶外背包「MPB 5.0」奪得大獎。

為了讓同學的創意變成真實商品，南豐紗廠會協助大獎隊伍改良及生產作品，並透過眾籌平台發售商品。有關眾籌項目的詳情，請留意南豐作坊 Facebook 專頁。

FASHION SUMMIT 2017

時尚高峰

Image: CITA



VANESSA CHEUNG
張添琳

Group Managing Director
of Nan Fung Developments
Limited

Founder of The Mills

南豐發展有限公司集團
董事總經理

南豐紗廠創辦人

MILL6 FOUNDATION TECHSTYLE SERIES 2.0

六廠基金會新經緯系列 2.0

Images: MILL6 Foundation



AURA LUZ MELIS

Partner of
Inside Outside

Inside Outside 合夥人



ALVARO CATALÁN
DE OCÓN

Founder of PET Lamp

PET Lamp 創辦人

Held in September, the two-day Fashion Summit 2017 brought together leading materials researchers, academics, designers, manufacturers and retailers to discuss topics on the theme of "Zero Impact". Organized by the Clothing Industry Training Authority, Office of Legislative Councillor the Hon Felix Chung Kwok-pan, Hong Kong Research Institute of Textiles and Apparel (HKRITA), REDRESS and three other organizations, speakers and participants exchanged ideas about the challenges and opportunities of sustainable fashion.

The Mills was one of the strategic partners of the conference and Vanessa Cheung, Group Managing Director of Nan Fung Development Limited and Founder of The Mills, was a keynote speaker and shared about how The Mills Summer Program, Connecting Heung Che and other programs organized by The Mills and MILL6 Foundation engage students and the community in sustainability.

Fashion Summit also announced the Fashion Future Challenge Award, which invites local university students to think about the challenges facing the fashion industry in the next 5 to 10 years and propose a solution.

MILL6 Foundation and the Institute of Textiles and Clothing at Hong Kong Polytechnic University are co-organizing the "TECHSTYLE Series 2.0". The two-day Discussion Forum in December, "TECHSTYLE Series 2.1: Fabpublic! - Talking about Textile, Community and Public Space", brings together artists, designers, textiles specialists, and other culture professionals and academics to discuss the challenges and opportunities of working across the disciplines of arts and textiles. Alvaro Catalán de Ocón, founder of PET Lamp, and Aura Luz Melis, partner of landscape and interior architecture firm Inside Outside will be the Keynote speakers of the event.

DATE: 9 AND 10 DECEMBER 2017
VENUE: TU107, LU GUAN QIU LECTURE THEATER, THE HONG KONG POLYTECHNIC UNIVERSITY
ENQUIRIES: ENQUIRY@MILL6.ORG.HK

Japanese artist Junichi Arai (1932–2017) is renowned for deploying traditional textile-making techniques into experimental production processes, and creating pieces that combine contemporary Western technologies with Eastern methodologies. The exhibition, "TECHSTYLE Series 2.2: Self-Organization: Junichi Arai's Textile Anthology" is the first retrospective exhibition of the master in Hong Kong. Dubbed a "dream weaver," the show will present the diverse challenges and beauty of fabrics created by Arai, offering an immersive experience into the sensorial, textural, and visual inner world of the artist.

DATE: 11 DECEMBER 2017 TO 28 FEBRUARY 2018
VENUE: THE FASHION GALLERY, MN109, THE HONG KONG POLYTECHNIC UNIVERSITY

DATE: 15 DECEMBER 2017 TO 26 JANUARY 2018
VENUE: INNOVATION GALLERY, JOCKEY CLUB INNOVATION TOWER, THE HONG KONG POLYTECHNIC UNIVERSITY

ENQUIRIES: FGALLERY@POLYU.EDU.HK

由製衣業訓練局主辦，立法會鍾國斌議員辦事處、香港紡織及成衣研發中心、REDRESS 等 7 個機構協辦的《時尚高峰》在 9 月初舉行。為期兩天的峰會以「零影響」為主題，嘉賓在物料研發、設計、生產、消費及教育等多個層面，探討時裝及紡織業社會責任及未來的機會與挑戰。

南豐紗廠是峰會的策略夥伴，南豐發展有限公司集團董事總經理兼南豐紗廠創辦人張添琳擔任主講嘉賓，介紹南豐紗廠及六廠基金會透過「南豐紗廠新經緯暑期作業」及「香車製造」等計劃，將可持續發展的理念帶進校園及社區。

《時尚高峰》將在稍後舉辦「時尚未來挑戰大獎」，鼓勵大專院校學生為時裝及紡織業未來 5 至 10 年的所面對難題，提交解決方案及建議書。

Details on the competition can be found at:
有關比賽詳情，請瀏覽：

**FASHIONSUMMIT.HK/
INDEX.PHP/EN/FASHION-
FUTURE-CHALLENGE-
AWARD/AWARD-
INTRODUCTION**



7-8 SEP

六廠基金會與香港理工大學紡織及製衣學系合辦的「新經緯系列 2.0」，將會在 12 月舉辦為期兩天的研討會「新經緯系列 2.1: Fabpublic! —— 關於紡織、社區和公共空間」，邀請藝術家、設計師、紡織專家、文化界人士及學者，討論建立藝術及紡織社群的挑戰，並邀請了 PET Lamp 創辦人 Alvaro Catalán de Ocón，以及著名景觀設計事務所 Inside Outside 的合夥人 Aura Luz Melis 擔任主講嘉賓。

日期: 2017 年 12 月 9 及 10 日
地點: TU107 香港理工大學魯冠球演講廳
查詢: ENQUIRY@MILL6.ORG.HK

另外，日本設計師新井淳一（1932–2017）把傳統紡織技術與實驗生產過程融合，作品集當代西方科技與東方理念於一身。而「新經緯系列 2.2：自組織化：新井淳一經緯世界藝術展」是他在香港的首個回顧展，帶領觀眾體驗藝術家充滿感官、紋理和視覺衝擊的世界，向這位「夢想編織者」的努力和成就致敬。

日期: 2017 年 12 月 11 日至 2018 年 2 月 28 日
地點: 香港理工大學服裝館 MN109

日期: 2017 年 12 月 15 日至 2018 年 1 月 26 日
地點: 香港理工大學賽馬會創新樓創新展廊

查詢: FGALLERY@POLYU.EDU.HK

18 AUG

THE RAW MATERIALS EVOLUTION

In recent years, textile manufacturers have tried to meet rising textile demand by using farming methods that not only lower quality but also harm the environment. While some social enterprises turned to producing organic cotton, other innovators are developing environmentally sustainable materials.

原料非常時期 嶄新開發方法

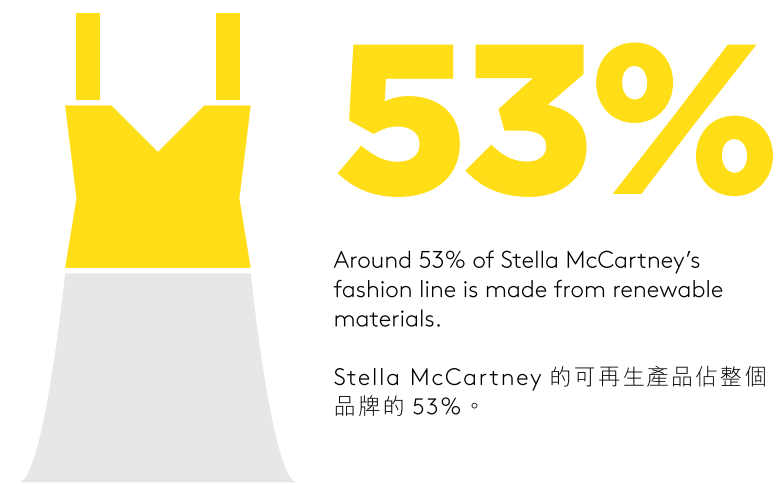
近年紡織業面對原料供不應求的困境，驅使供應商用有毒農藥穩定產量。這不但降低原料質素，不當耕作方法更為地球帶來不可挽回的負面影響。即使有不少社會企業推動有機方法耕種棉花，但比起使用單一原料，開發更多對有利環境的創新物料，才是維持行業可持續性的方向。



STELLA MCCARTNEY × BOLT THREADS



Image: Bolt Threads, WWD



Around 53% of Stella McCartney's fashion line is made from renewable materials.

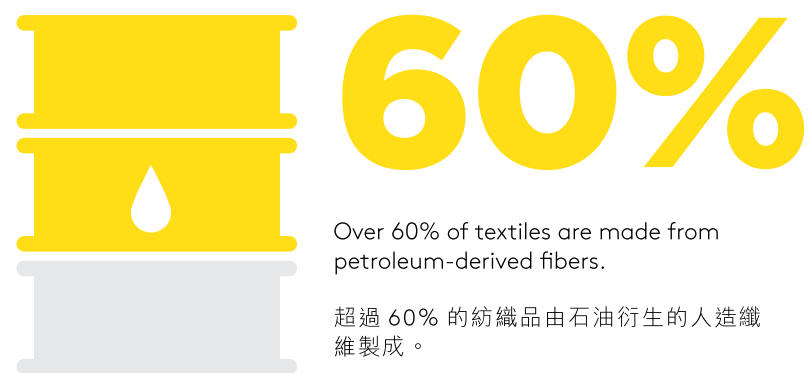
Stella McCartney 的可再生產品佔整個品牌的 53%。

The advertising campaign for British fashion designer Stella McCartney's Fall/Winter 2017 was shot in a Scottish landfill, showing McCartney's determination to address the problem of fashion waste. As reported in WWD (Women's Wear Daily), over 50% of her women's line utilizes renewable materials. McCartney recently partnered with Bolt Threads, an American biotech company that engineers next generation, vegan-friendly textiles based on proteins found in nature. Their first piece will be shown in MoMA's (Museum of Modern Art) "Items: Is Fashion Modern?" exhibition which opens in October.

According to information found on Bolt Threads' website, more than 60% of traditionally manufactured textiles are made from polyester or other petroleum-derived fibers. These non-biodegradable materials find their way to landfills and the ocean, damaging our ecosystem. The primary ingredient for Bolt Threads' vegan-friendly silk, however, is biodegradable sugar and comes from plants that are replanted, completing the sustainability loop. The resulting silk is as soft as traditional silk.

英國時裝設計師 Stella McCartney 的 2017 年秋冬系列廣告在蘇格蘭的一處堆填區拍攝，直接的視覺語言展示她對減少時裝廢料的決心。根據《WWD》的報導，品牌女裝主線有 50% 以上的產品，都是由可再生的物料製造。最近她跟美國生物科技公司 Bolt Threads 合作，利用天然蛋白質研發的全素絲線，為現代藝術博物館（MoMA）於 10 月開幕的展覽《Items: Is Fashion Modern?》設計特別系列。

根據 Bolt Threads 的網站描述，傳統紡織業有超過 60% 的紡織品，由聚酯或其他石油衍生的人造纖維製成，無論流入堆填區還是大海都難以被分解，帶來嚴重環境及生態問題。相反，他們利用可分解的糖份為開發全素絲線的主要原料，不但柔軟度不比傳統絲綢遜色，加上糖份來自可補種（Replant）的植物，確保農地耕作週期的可持續性。



Over 60% of textiles are made from petroleum-derived fibers.

超過 60% 的紡織品由石油衍生的人造纖維製成。

Southern Europe is a key citrus fruit growing region. Italy alone harvests a shocking 70 million tons of citrus fruit that is deemed unsuitable for consumption. Because disposing this waste is costly, much of it is illegally dumped which creates environmental problems, and many juice companies that can't bear this cost have had to close down.

Spotting an opportunity, a group of ingenious and environmentally-conscious Italian students founded Orange Fibers in

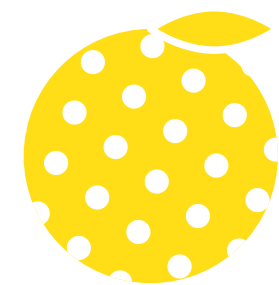
2014. They worked with Sicilian farmers to collect citrus fruit waste and byproducts and developed a vegan-friendly silk thread. Orange Fibers is the world's first company to use citrus juice byproducts to create fabrics. Like Bolt Threads, they also produce soft, lightweight vegan-friendly silk which can be available in different colours. Fashion house Salvatore Ferragamo was the first to use Orange Fibers' fabric, and the first fruits of their collaboration were launched in April on the 47th Earth Day.

南歐是出產柑橘類水果的重鎮，單單在意大利，每年不符合食用要求的廢棄柑橘達到 7,000 萬噸的驚人數字。由於處理農業廢物的費用高昂，不但導致非法傾倒的環境問題，更造成大批負擔不起處理成本的果汁公司倒閉。

有見及此，一班有志於創新科技和環境保護意大利女生於 2014 年成立 Orange Fibers。她們與西西里島一帶的農民合作，在當地收集柑橘及相關副產品，研發出質感輕柔的全素絲線。Orange Fibers 是全球首個利用柑橘汁副產品生產面料

的公司，他們跟 Bolt Threads 同樣生產手感輕柔的全素絲線，還可以根據需要生產不同顏色的成品。而 Salvatore Ferragamo 是第一家採用 Orange Fibers 面料的時裝企業，雙方合作的限定系列在 4 月的第 47 屆是世界地球日中展出。

SALVATORE FERRAGAMO × ORANGE FIBERS



70 MILLION TONS

In Italy alone, 70 million tons of citrus fruit goes to waste.

意大利每年不符食用要求的廢棄柑橘高達 7,000 萬噸。



X3

Synthetic fiber production emits three times more carbon dioxide than organic cotton fiber production.

生產合成纖維的過程，比種植有機棉花排放多 3 倍的二氧化碳。



Image: Salvatore Ferragamo, Orange Fibers

Swimsuits are made from petrochemical-derived fibers that are not biodegradable. However, outdoor gear, swim and sports wear often require the use of durable, high-performance Nylon fabrics, posing a dilemma for the industry. Italy-based materials developer ECONYL® collects Nylon waste and transforms it into regenerated and regenerable Nylon. The company supplies sporting brands like Adidas, Speedo, and Arena.

ECONYL® collects nylon waste from various environmental organizations as well as their own waste collection network which spans across Europe, the

US and Asia. The waste comes from the garment manufacturing process, post-consumer as well as fishing nets left in the ocean. Reclaimed waste is cleaned, depolymerized, purified, polymerized and transformed into regenerated Nylon yarn to produce homeware and garments. According to the company, every 10,000 tons of regenerated Nylon avoids the consumption of 70,000 barrels of crude oil, 57,000 tons of carbon dioxide emissions, and 1 million GJ of energy demand.

上文提到石油衍生的人造纖維難以分解，可是戶外服裝和泳衣等具功能性運動服，需要高性能和耐用的尼龍去製作，是時裝業推行可持續發展的一大難題。位於意大利的面料研發公司 ECONYL®，便致力收集各地的廢棄尼龍，並轉化成再生物料，供應給 Adidas、Speedo 和 Arena 等多個運動服裝品牌。

ECONYL® 的尼龍來自多個環保機構，回收網絡遍佈歐洲、美洲和亞洲多個城市。這些尼龍來自製衣過程中的廢料，也有從消費者處收集回來二手衣物，甚至是漁民遺留在大海的漁網。回收得來的尼龍經過清洗、解聚（depolymerization）、淨化（purification）等過程後，會重新聚

合（polymerization）成家用和成衣用的纖維。根據他們的統計，每再生 1 萬噸尼龍，會節省 7 萬桶石油、減少排超過 5 萬噸的二氧化碳，以及少產生 100 萬兆焦耳電力。

SIGNIFICANCE OF LEGAL COMPLIANCE TO START-UPS

Legal compliance is essential to the operation of all businesses. 不論你經營甚麼事業，都必須守法合規。



守法合規對
初創企業的重要性

E: Entrepreneur
JTC: JTC Solicitors

E：創業家
JTC：莊鄭律師事務所

E: Why is legal compliance important?

JTC: Effective legal compliance can be helpful to:

- avoid paying out significant costs to compensate third parties and remedy situation;
- avoid significant civil (fines) and criminal (imprisonment) liabilities;
- comprehensively protect valuable assets and interests;
- create trustworthy reputation and public relations; and
- build confidence amongst employees and potential investors.

E: Consequences of non-compliance?

JTC: Many innovative startups and great business models fail due to underestimating the importance of legal compliance. One recent example is Homejoy (a very successful US startup which raised over US\$40 million).

Homejoy was a home cleaning services online platform startup. It engages contract workers to provide cleaning services to its clients. In 2015, Homejoy was faced with lawsuits due to its misunderstanding of the nature of its legal relationship with the cleaners. Homejoy considered its cleaners as “independent contractors”, and thus may have overlooked its legal obligations as the “employer” of the cleaners. It was reported that potential investments may have since then fell through due to uncertainty in the outcome of lawsuits. Eventually, it was reported that the founders decided to shut down Homejoy because of lack of sufficient funding for expansion.

E：為甚麼守法合規如此重要？

JTC：有效的守法合規能夠幫助你：

- 避免為賠償第三方損失和作出補救而支付龐大費用；
- 避免重大的民事（罰款）和刑事（監禁）責任；
- 全面地保護寶貴的資產和利益；
- 創建信譽和公共關係；及
- 建立員工和潛在投資者對企業的信心。

E：不守法合規有甚麼後果？

JTC：不少創新的初創企業和卓越的營商模式，都因低估了守法合規的重要性而失敗。以曾經成功籌集 4,000 萬美元的美國初創公司 Homejoy 為例，它是一個提供家居清潔服務的網上平台，透過聘請一班合約制員工為其客戶提供清潔服務。於 2015 年，Homejoy 因對公司與清潔工人之間的法律關係有所誤解而面對法律訴訟。當時 Homejoy 視清潔工人為「獨立承包商」，因而忽略了作為清潔工人的「僱主」之法律責任。據報道指出，當時有潛在投資者考慮注資 Homejoy，但因為法律訴訟結果存在不確定性而令注資告吹。Homejoy 的創辦人據報最終因缺乏資金擴充而決定關閉平台。

E: Practical tips for legal compliance?

- JTC: (1) **Select appropriate corporate vehicle:** Typically, conducting business as a limited company (despite the higher set-up costs) would offer more protection to the entrepreneur instead of conducting business in personal capacity.
- (2) **Identify risks of criminal liabilities:** Study relevant guidelines issued by the HKSAR Government to identify the legal requirements applicable to your business. Pay special attention to identify areas of your business which may give rise to criminal liabilities and ensure compliance of the relevant laws.
- (3) **Adopt effective template for material agreements:** Identify significant aspect of your business and adopt effective template agreements to safeguard those business interests. Material contracts should be carefully prepared to provide sufficient protection against the counterparty.
- (4) **Seek legal advice:** Seek legal advice when uncertain. Legal compliance plays a key role in every successful business.

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ECONYL®

+157%

The garment industry used 157% more Nylon in 2015

截止 2015 年，製衣業的尼龍使用量比 2000 年增加 157%。

-57,000 TONS

For every 10,000 tons of regenerated Nylon, 57,000 tons of CO2 emissions are avoided.

每再生 1 萬噸尼龍，會減少排超過 5 萬噸的二氧化碳。



Image: ECONYL®



ABOUT THE MILLS

The Mills is a landmark revitalization project from Nan Fung Group scheduled for completion in 2018, a celebration of shared industrial legacy with Hong Kong, and a step towards a future of applied creativity and innovation.

The Mills is composed of 3 main pillars: Fabrica, Shopfloor and MILL6 Foundation. Building on a foundation of legacy and heritage, visitors can explore the continuity of an authentic Hong Kong story, where themes of textile and industry are woven into experiences of innovation, culture, and learning.

關於南豐紗廠

南豐紗廠預計於 2018 年落成，是南豐集團策劃的地標式保育項目，見證香港紡織工業的承傳，並帶領本地應用創意及創新產業邁進新里程。

南豐紗廠由南豐作坊、南豐店堂及六廠基金會三大支柱組成。建基於集團的承傳與歷史，並以紡織和工業為根基，交織出創新、文化及學習體驗，讓訪客從中探索不斷延續而真實的香港故事。



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