

**我的設計不偉大：
為患認知障礙爺爺造一枝智能拐杖**

My Design is not “Great”: A Smart Walking Stick for a Grandfather with Dementia

Walkpner - Vincent Mak

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麥子澄（Vincent）從事產品及模具設計員，他為不少電子品牌設計過高價位的電動牙刷、鬚刨，甚至手提電話等。走進電器店隨便拿起一件商品，說不定就出自他之手。設計多年奢侈品的他從沒想到自己有一天會設計智能拐杖，甚至從零開始研究接電線、組裝電子零件，只為幫助有認知障礙的老人。一切都由他爺爺突然走失那天說起。

Product designer Vincent has designed various electrical appliances for big brands, ranging from electric toothbrushes, shavers to mobile phones. Many of his products are available in electronics stores and there is a fair chance that you have held one in your hands. With years of experience in designing high-end items, he would never have imagined that one day, he would be designing smart walking sticks. He had to learn the basics like wiring and assembling electronic parts, all to help seniors with dementia. It all started when his grandfather went missing one day.

爺爺走失 不足24小時不能報警只能自救

Vincent原本在澳洲擔任產品設計員近七年，多年前他回流返港，恰巧82歲的爺爺同年確診認知障礙症，他已無法認出眼前的子孫，只記得枕邊人。爺爺偶爾會從觀塘的家跑到油塘去，這樣的事在半年內發生過四、五次，每次都要靠警車把他送回家。Vincent憶述，有次爺爺甚至試過在家中跌倒，進醫院躺了兩個星期，因年紀老邁，身體機能欠佳，跌倒還引起併發症，「咳到肺出血。」

每次爺爺走失，一家人總是心急如焚。「但沒有人能幫你，失蹤不足24小時也不可以報警。」爺爺走失的事，令Vincent一家徬徨無助，但仍只能嚴陣以待，「曾試過出去找、碰碰運氣，但機會其實微乎其微。」為了防止爺爺再次走失，他們買來形形色式的智能拐杖、放在身上的智能襟章等工具，可是全都徒勞無功，「爺爺以前做製造業，現在很愛把東西拆開來研究。我們買回來的智能拐杖，他全部用螺絲批拆件，轉眼被扔進垃圾桶。」爺爺不斷逐件工具「解體」，令他們哭笑不得，「可能長者不喜歡別人標籤他是老弱傷殘。」

一天，Vincent忽發奇想，既然市面上的工具不合用，何不利用自己的專業，去設計一個合用的產品？他於是開始著手研發新產品，既要具備防走失功能之餘，同時亦要低調得來不讓長者發

覺。最後他想到智能拐杖設計成附加裝置，可隨意安裝上任何一枝普通拐杖，減低長者有被標籤的感覺。

從頭開始學組裝電子零件

一年前，Vincent夥拍朋友成立工作室「喜行Walkpner」，全力投入研發智能拐杖配件。他們最後成功以3D打印技術製作出智能拐杖裝置，塑膠配件內設置感應器及定位功能。而為了應對長者跌倒的情況，若拐杖橫放超過既定秒數，便會自動致電照顧者，對方能從電話中聽到拐杖附近環境的聲音，掌握現場情況，他們曾邀請本地老人院試用，反應普遍正面。但由於缺乏資金大量生產，目前他們只得人手組裝配件，每件起碼得花上四至五小時。雖然Vincent是產品設計師，但他坦言自己一向只管設計，對產品組裝一竅不通，研發智能拐杖對他來說並非容易之事。他決心從零學起，從燒焊電線到裝嵌電子底板等等，遇問題便上網找答案，他常自嘲製作過程完全不專業，笑道：「全部都要自己試，從產品概念到製成prototype (原型) 都靠慢慢摸索。」

辛苦研製出來的成品，Vincent趕忙拿去讓親人試用。不久後，Vincent嫻嫻在睡覺前弄跌了拐杖。「那次拐杖警報電話響起，接聽後只聽到輕微呼吸聲，當家人急速回家後發現只是睡著的呼吸聲及只是拐杖倒下了。」Vincent事後回想起，雖然不是真正的意外，但他認為有拐杖裝置在旁，起碼有多個保障，「我們有一個理念，『誤鳴』都好過『唔鳴』（沒有鳴聲），產品未必有很大幫助，但如果發生了什麼意外，至少多個機會能幫得上忙。」

When Grandpa Went Missing

Vincent had worked in product and mold design in Australia for almost 7 years when he relocated back to Hong Kong many years ago. The same year, his 82-year-old grandfather was diagnosed with dementia. He could only recognise his wife, but could no longer recognise his children or grandchildren. For around four to five times over half a year, he went from his home in Kwun Tong to Yau Tong for no reason, and had to be taken home by the police. Vincent still remembers when his grandfather fell at home and was hospitalised for 2 weeks. The fall triggered complications because of old age: “Grandpa was coughing blood,” Vincent recalled.

Every time his grandfather went missing, it was an agony for the family. “But no one could help. We had to wait 24 hours before calling the police.” Helpless, all Vincent’s family could do was to stay alert. “We would just comb the streets hoping to bump into him, but the chances were slim.” To mitigate further incidents, they bought all kinds of smart walking sticks and smart badges with tracking functions, but none of them worked.

“Grandpa used to work in manufacturing, so he loves disassembling things. He would take the smart walking sticks apart with a screwdriver, and the parts would soon end up in the bin.” Facing the situation, the family didn’t know whether to laugh or cry. “Perhaps he didn’t want to be labelled someone old and disabled who needed to be taken care of.”

One day, the idea of creating something with his own expertise that is fit for purpose dawned on Vincent. The new product must have a tracking function while being subtle enough to not be discovered by senior users. The answer was a smart accessory that can be installed onto any walking sticks, reducing the labelling effect.

Learning Electronic Assembling from Scratch

One year ago, Vincent partnered with friends to set up the “Walkpner” Design Lab and dedicated himself to developing a smart accessory for walking sticks. The final product was a device with a 3D printed casing and an internal sensor that can detect the user’s falls. When the stick is laid horizontal for a set amount of time, it will call the



社會創新不一定要偉大理念

「誤鳴」總比「唔鳴」好，是因為他們相信，智能柺杖配件能讓認知障礙的長者自行外出，而不需要任何人陪伴輔助，讓長者出行時多一份尊嚴；而照顧者亦能安心讓長者快樂地出行，也是工作室「喜行」名字起源。

目前Vincent還缺資金大量生產，同時他繼續不斷改良智能柺杖，最新一代已經可以藏在柺杖內，完全不被長者察覺。Vincent笑言十分成

功，因為作為第一位用家，敏銳的爺爺一點也沒有察覺柺杖內有乾坤，「至少他還未把柺杖拆件！」

Vincent近年再回到澳洲生活，是次訪問全程以電話進行，遠洋那邊的Vincent多次透過電話強調，他做創作沒有很偉大的理念，只希望可以透過自己的技能，去幫助有需要的人，「我做了多年設計，終於設計到一些奢侈品以外，真正幫到人的產品。」



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caretaker automatically, who can then hear the surroundings and get an idea of the situation. The prototypes were sent to local care homes for trial and the team received positive feedback. Without funding for mass production, they could only assemble the devices manually, with each unit taking 4-5 hours. As a product designer, Vincent admitted that he had always focused on the design, and did not know anything about production or assembly. Developing a smart walking stick proved to be a challenge for him. With strong determination, he taught himself basics like welding and assembling circuit boards. He turned to the Internet if he had questions. He joked that none of it was professional: "It was all trial and error, from the design idea to the prototype."

He tested the product with his family. Soon, his grandmother accidentally knocked over the walking sticks before going to bed. "The alarm on the walking stick was triggered. After answering the call, only a slight breathing sound was heard. When the family hurried home, they found only the breathing sound of sleeping and the walking stick was knocked over." In retrospect, although it is not a real accident, but he believes that it was an extra layer of security. "We believe that false alarms are better than no alarms. The product may not be a silver bullet, but when accidents happen, it would at least increase the likelihood of a better outcome."

No Grand Visions Needed in Social Innovation

The reason for wanting false alarms over no alarms is that they believe the smart walking stick gives the elderly the dignity to go out independently without others' assistance. It is also the idea behind the studio's Chinese name, literally "happy outings", which also sounds like "initiating outings".

At this stage, Vincent is still looking for funding for mass production, but he is also continuously improving the design. The latest version can be completely hidden inside walking sticks, hiding it from both outsiders and the users themselves. Having tested it on his grandfather, Vincent is happy to report that it was a total success; observant as his grandfather is, the device was not discovered. "He still hasn't taken the walking stick apart!"

This interview was conducted over the phone, as Vincent had relocated back to Australia. He emphasised multiple times that he does not have a grand vision—he only hopes to help those in need with his skills. "All these years in the design business, and at last, I have designed a product that is not for luxury, but helps with people's real needs."