台灣「第一部真空管電腦」在陽明交通大學 – 資訊先鋒牛車雕塑揭幕儀式

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台灣「第一部真空管電腦」在陽明交通大學 – 資訊先鋒牛車雕塑揭幕儀式，於今年 (2023 年) 4 月 8 日國立陽明交通大學「交大日」舉行，由陽明交大林奇宏校長、資訊學院陳志成院長引言，銅像則由藝術家江沖默雕塑，建築師陳乃中規劃景觀設計，並與捐贈系友資科系 74 級陳槐廷、資科碩 86 級尊博科技許順宗、資科系 87 級聖洋科技邱繼弘共同揭幕。

陽明交通大學是台灣資訊與電子領域研究的領導者，為彰顯於資訊領域耕耘的歷史，資訊學院院長陳志成在揭幕儀式上提及，於三年前他上任資訊學院院長時，就開始深思，要如何用最快的方式來告訴全世界，本院對於「世界第一」的期許與信心。在此我們也專訪到資訊學院院長陳志成來更加深入了解牛車的歷史與淵源。

Q：請問陳院長最原始的發想緣由為何？

A：我在約三年前上任資訊學院院長的時候，就一直在想如何做一件事，不只台灣，也讓全世界都可以知道陽明交大的資訊學院是全世界第一。講全世界第一目前有點太誇大，就當作是期許好了！各位如果去看美國各大學，校園內幾乎都有一個或數個很有名的雕像，而且那些雕像通常會伴隨著一些傳說，然後變成一個打卡景點，訪客來、任何人來都會去那邊照相，隨著社群軟體播放到全世界。所以那時候我就想如果我們可以把這段歷史還原，做成雕塑放在資訊學院的大門，就能夠讓大家記住「陽明交大電腦第一」！

Q：為什麼要強調「真空管」電腦呢？

A：1962 年 IBM 在新竹交大安裝了全台第一部磁鼓電腦 IBM 650，具磁碟儲存元件、是使用「真空管的第一代電腦」，同時也是「第一部量產的商用電腦」。但是網路上有人說 1957 年台糖公司向美國 IBM 台灣分公司買進一部 IBM 419 才是台灣第一部電腦，但是嚴格來講台糖那部 IBM 419 只是一台利用「機電元件進行會計運算」的機器。但是為了怕別人說我們混淆歷史，所以我們就強調交大擁有的是台灣「第一部真空管電腦」，這樣就沒有人可以來踢館了！

Q：請問這段歷史有原始的照片嗎？

A：有照片，但那張照片的背景也是眾說紛紜。有人說是台糖那台 IBM 419，台糖的博物館還有把這張照片放進去。但也有人說館，說是 1963 年 IBM 在台北搬遷電腦的時候照的。還有人說是搬來交大的那台電腦。簡單講，那個年代 IBM 在台灣搬遷電腦都是用牛車在搬。

透過了解，曾留學海外的陳院長在企劃時突發奇想，借鑑許多國外知名大學皆有著名雕塑來呈現學校輝煌里程碑與信念的概念，以 1962 年台灣第一台 IBM 650 電腦由基隆港運抵新竹的校史記錄作為啟發，並為了避免與 1957 年台糖公司向美國 IBM 台灣分公司買進一部 IBM 419 歷史產生歧異，以「一種利用機電元件進行會計運算的機器」和「第一部真空管電腦」做出區隔，開始規劃於光復校區工程三館一樓前設置雕塑藝術品乙尊，展開一系列的企劃過程。

選取這樣的一段歷史的原由，陳院長也娓娓道來。在 1962 年 IBM 在新竹交大安裝了全台第一部磁鼓電腦 IBM 650，他不僅具備磁碟儲存元件、是使用真空管的第一代電腦，同時也是第一部量產的商用電腦。但由於電腦儀器十分精密，當時未能找到具有良好避震效果的氣墊車等設備，所以 IBM 在當時搬遷電腦都只好使用傳統的牛車緩緩地運送電腦。

於當時的時代背景下，台灣處在科技尚未起飛的年代，全然不見現今科技島的影子。而這樣一部劃時代的產物出現在台灣的土地上，被放置在耕作用的水牛之後緩緩拖曳著向前進，科技與傳統之間的碰撞擦出了火花，看似違和卻是台灣在科技領域的更近一步。就如同陽明交大校長林奇宏在典禮上和與會貴賓分享他參與雕塑外觀企劃的故事，資訊先鋒牛車雕塑會是現在這樣走著斜坡的模樣，便是想呈現台灣在科技歷史上堅毅不拔，最終成就不凡的精神。放置在工程三館前也是期望能夠勉勵並提醒世世代代的學生，資訊學院的歷史與貢獻，不只靠前輩奠定的基礎，也需要後進的創新與努力。

飲水思源是陽明交大的立校根本，也是全校師生謹記在心的校訓。雕塑不只是訴說著一段台灣科技歷史，也是由資訊學院所畢業的系友來捐款建造，同時還用牛的腳印紀錄了資訊學院的歷史。在歷史記憶之間勾織並�ி்，每個都象徵著陽明交大的過去與現在、脈絡與未來道路，期許資訊學院所立下的代表雕塑能夠引領著學子將台灣科技走到下一個里程碑。

Taiwan's First Vacuum Tube Computer was at NYCU
The Unveiling Ceremony of the Computer Pioneer Ox Cart Statue

Taiwan's First Vacuum Tube Computer was at National Yang Ming Chiao Tung University (NYCU). The unveiling ceremony of the Computer Pioneer Ox Cart Statue took place on April 8, 2023, coinciding with NYCU's Anniversary Celebration Day. The ceremony was introduced by President Chi-Hung Lin and Dean Jyh-Cheng Chen of the College of Computer Science. Renowned artist Chung-Mo Chiang (江 沖 默) crafted the bronze statue, and Architect Nai-Chung Chen (陳乃中) was responsible for the landscape design. The unveiling of the statue was jointly carried out by alumni, including W. T. Chen, Class of 74, Shun Tsung Hsu, Executive Director at Jumbo Technology Co., Class of 86, and Nathan Chiu, President of cacaFly, Class of 87.

National Yang Ming Chiao Tung University is a pioneering institution in the field of computer and electronics research in Taiwan. To emphasize the institution's longstanding commitment to this field, Dr. Jyh-Cheng Chen, the Dean of the College of Computer Science (CCS), shared during the unveiling ceremony that when he assumed the role of Dean three years ago, he initiated a reflection on how to swiftly convey the College's aspirations and confidence in achieving global excellence. In this context, we also conducted an exclusive interview with Dean Chen to gain deeper insights into the history and origins of this endeavor.

Q: What initially inspired Dean Chen's idea?

A: When I assumed the position of Dean at the College of Computer Science three years ago, I contemplated how to undertake an initiative that would not only raise awareness in Taiwan but also on a global scale, emphasizing National Yang Ming Chiao Tung University's College of Computer Science as a world-class institution. While asserting global superiority might sound overly ambitious, let's regard it as an aspiration. If you visit universities in the United States, nearly all of them feature one or more renowned statues on their campuses, often accompanied by legends, making them popular photography spots. Visitors and others who come to these universities flock to these sites for pictures, and these images are widely shared worldwide through social media. Therefore, at that time, I envisioned that by commemorating this history and transforming it into a sculpture positioned at the entrance of the College of Computer Science, it would serve as a lasting reminder that "National Yang Ming Chiao Tung University leads the way in the field of computer science!"

Q: Why emphasize that it is a 'vacuum tube' computer?

A: In 1962, IBM introduced the IBM 650, a drum memory computer, at National Chiao Tung University in Hsinchu. This computer featured magnetic disk storage components and is known as Taiwan's "first-generation vacuum tube computer," marking the first commercially produced computer. Some argue that in 1957, the Taiwan Sugar Corporation purchased an IBM 419 from IBM's Taiwan branch, considering it as Taiwan's first computer. Nevertheless, the IBM 419 at Taiwan Sugar was primarily used for "accounting calculations via electromechanical components." To avoid any historical misunderstanding, we underscore that National Chiao Tung University possesses Taiwan's "first vacuum tube computer," ensuring that there is no room for dispute on this matter!

Q: Are there any photographs from that historical period?

A: There is a photo, but the context of one particular photo is a matter of dispute. Some argue that it depicts the IBM 419 at the Taiwan Sugar Corporation, and the Taiwan Sugar Museum features this image in its exhibit. On the other hand, there are those who assert that it was taken in 1963 during IBM's computer relocation in Taipei. Some even suggest that it's a picture of the computer moved to National Chiao Tung University. To put it simply, during that era, IBM used ox carts to transport their computers in Taiwan.

Dean Chen, who had studied abroad, experienced a sudden burst of inspiration during the planning phase. He took cues from several prestigious international universities known for using sculptures to symbolize their institutional achievements and principles. He chose the 1962 historical event of Taiwan's first IBM 650 computer's arrival in Hsinchu from Keelung Harbor as his starting point. To prevent any confusion with Taiwan Sugar Corporation's 1957 purchase of an IBM 419 from the IBM Taiwan branch, he carefully differentiated between "a machine utilizing electromechanical components for accounting computations" and "the first vacuum tube computer." Subsequently, he embarked on a project to place a sculptural artwork in front of the Engineering Building 3 at Guangfu Campus, commencing a series of planning endeavors.

In addition, Dean Chen vividly explains the rationale behind selecting this particular historical episode. In 1962, IBM introduced Taiwan's first magnetic drum computer, the IBM 650, at National Chiao Tung University in Hsinchu. The IBM 650 featured magnetic disk storage components and was the first-generation computer using vacuum tubes. Furthermore, it marked the advent of commercially produced computers. Nonetheless, owing to the computer equipment's exceptionally precise nature, appropriate shock-absorption technology, such as air-cushioned vehicles, was unavailable at the time. Consequently, IBM had no choice but to transport the computer using traditional ox carts, moving it slowly.

During that historical period, Taiwan had not yet transformed into the tech hub we now recognize; it existed in an era where technology had not advanced as it has today. In this unique setting, an epoch-making product slowly took shape, placed on an ox cart and dragged forward by a water buffalo traditionally used for plowing. This combination of technology and tradition, seemingly incongruous, symbolized Taiwan's technological progress. During the ceremony, President Lin shared his role in crafting the sculpture's exterior design. The pioneering ox cart statue depicts an ox cart ascending a slope, serving as a symbol of Taiwan's unwavering determination in its technological history, which has led to remarkable achievements. Positioned in front of Engineering Building 3, it serves to both inspire and remind future generations of students that the legacy and contributions of the College of Computer Science rely on the foundations laid by their predecessors and the innovation and efforts of those who will follow.

The core principle of NYCU is "the remembrance of one's roots and heritage," a motto deeply ingrained in the hearts of both students and faculty. This statue not only recounts a chapter in Taiwan's technological history but also came into existence through the generous contributions of CCS alumni. Additionally, it bears the imprints of cattle hooves, symbolizing the CCS's history. Woven into the tapestry of historical memory, each element represents NYCU's past and present, as well as the path to the future. We hope that this statue from the College of Computer Science will guide students toward the next significant milestone in Taiwan's technological journey.