"Mobile Computing" in 1960s Taiwan: A Personal History of the Early Use of ICTs for Economic Development

By Alice T. Liu and her mother

I am Alice Liu and was working in the technology sector in California when I became interested in international development. I made the transition in 2005 and entered the development sector and that is when my mom told me that her first job out of college was to work as a keypunch operator in Taiwan, to enter data for an agriculture survey for the United States Agency for International Development (USAID). She worked there from March 1961 to December 1963 and moved up from keypunch operator to supervisor/trainer.

Recently I decided to try and track down information about the agriculture survey project because I wanted to nail down the timeframes and whether USAID was really involved. My mother suggested checking IBM's web site because it might say when IBM established its office in Taiwan. Bullseye – the keywords "Taiwan history" immediately turned up this photo of an ox cart pulling an IBM punch card machine, confirming part of my mom's story:

http://www-03.ibm.com/ibm/history/exhibits/vintage/vintage_4506VV2257.html.

The description of the photo says in part:

"The ox and IBM customer engineers were photographed in 1963 while assisting the Council for United States Aid in relocating its data processing center to a new site on Roosevelt Road in Taipei."

I shared this with my mom and she remembered the day of this move and more. Below are her recollections mostly in her own words (edited a bit for organization and clarification), followed by additional information I found on the early history of US economic aid to Taiwan and how computers were a part of Taiwan's economic development strategy.

My mother's recollections about the IBM data processing work for the Agriculture Survey in early 1960's Taiwan

The day of the equipment move as shown in the IBM photo

When I started in March 1961 the Data Processing Division occupied a smaller two story building about two miles away from the new Roosevelt site, a brand new five-story building that we, the Council for United States Aid (CUSA or Mei Yuan Hui) Data Processing Division, occupied. Mei Yuan Hui was a Taiwan government organization set up specifically to coordinate with AID - Aid for International Development[1].

[1] It was actually a predecessor organization to USAID called the International Cooperation Administration (ICA). See section below titled "Early history of US economic aid to Taiwan and ICT for development" for more details.

Due to the short distance, the loading and unloading of a big moving truck was considered wasteful. Also in those days there were no real moving companies as we know them here in the US, with big trucks, and the city streets were narrow. Therefore the inexpensive ox carts were used to move the IBM equipment one piece at a time during that move.

I remember they did the move on a weekend. We were disappointed that we did not get a day off. To call it "mobile computing" is not accurate. But it is still a very interesting historical picture.

Human and Computer Resources Used for the Agriculture Survey

We were hired for the huge Taiwan island-wide agriculture survey project. It took 16 keypunch machines two shifts (soon they added a second shift from 5 PM to 11 PM), and about 18 months to complete all the data input. After moving to the new five-story building on Roosevelt Rd using those ox carts, we had more room and increased the keypunch machines to 24. We had a whole room just to store those 80 column IBM keypunch cards. We must have killed a million trees.

Recruitment of Key Punch Operators

The job became highly competitive because the pay CUSA offered was much higher then other jobs in Taiwan at that time. For example, this CUSA job paid twice as much as my sister's registered nurse (RN) pay. The recruitment flyer required only high school graduation; instead many college graduates applied, myself included. To narrow down the candidates, CUSA required the candidates to take an all-day test of aptitude (logic problems) and English. Out of 400 applicants, only 16 were selected.

Interestingly when I came to Boston in January 1964, the keypunch jobs paid only half the salary of an RN in Boston. Alas! How different it was on the two sides of the Pacific Ocean.

Other Projects

CUSA was one of IBM's early major clients. Several other large Taiwan government organizations were IBM's clients at the same time. After the Agriculture Survey, CUSA did data input work for the Taiwan Petroleum Company and Taiwan Electric Company. Taiwan was also creating a personal income tax system at that time. The CUSA keypunch operators were involved in data input of the government's income tax testing pilot program. Grandpa served as a consultant for the Ministry of Economic Affairs (a cabinet level government organization) specifically on the creation of the personal income tax system.

One other interesting project I want to mention was preparing for the creation of the property tax system. We had to enter data about every property, be it an office building, a factory, a house, an apartment, a mansion, a hole in the wall.... We entered data such as owner's name, address, room numbers, bathroom numbers, square footage and such. You wouldn't believe the problems we had. The IBM machines were not designed to input Chinese characters. We had a huge coding section, occupying the entire fifth floor. What they did was to code each Chinese character into a series of numbers, say character "LIU" becomes 30659, and character

"WU" becomes 752043, etc. There was a system for the coders to follow but it was extremely cumbersome! Imagine, a street address may involve 12 or more Chinese characters, then the coder will turn that address into more than 100 numeric digits for us keypunch operators to enter. They were still working on this when I left.

These are just a few that I can remember. But they are all part of promoting Taiwan economic development. And all, at least my pay, were funded by US economic aid and executed by CUSA.

Early history of US economic aid to Taiwan and ICT in Taiwan's development strategy

Alice again here. My Google searching to understand if USAID or a predecessor organization was behind this led me to an article from the IEEE Annals of the History of Computing, "Cold War Politics: Taiwanese Computing in the 1950s and 1960s"[2], which mentions the agricultural survey and provides more background on the historical context and the first mainframes to arrive in Taiwan, funded by the US government and the United Nations. Below are a couple of excerpts:

> Keeping records of the US funds and surplus agricultural commodities to Taiwan was a laborious task for both the US and Taiwanese agencies, such as the Taipei office of the International Cooperation Administration (ICA), which was the predecessor of the United States Agency for International Development (USAID), and the Council for United States Aid (CUSA), which worked under the Taiwanese government to manage US aid.
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> The arrival of Taiwan's first two mainframe computers stemmed from development projects in Taiwan. Beginning in the late 1950s, both Taiwanese technocrats and engineering graduates from pre-WWII Chiao-Tung University in China faithfully believed that introducing Taiwan to cutting edge expertise on electronics and digital computers would strengthen the development of an industrial sector, such as an electronics industry, in Taiwan, which had a chiefly agricultural economy at that time.

My mom shared her memories with me because it is a part of our family's history, but I thought others involved in ICT4D would be able to relate to this bit of history as well so I'm sharing this story here on this blog. I hope you enjoyed learning about this early example of ICT for development as much as I did.

Alice

[2] H. Tinn, "Cold War Politics: Taiwanese Computing in the 1950s and 1960s", *IEEE Annals of the History of Computing*, Volume 32, Number 1, January-March 2010, pp. 92-91. Also see http://muse.jhu.edu/journals/ahc/summary/v032/32.1.tinn.html.