

**A Mesmerizing and Intellectually Stimulating
Visit of a Giant:
*Qualcomm Founder Irwin Jacobs Visit to
National Tsing Hua University***

Da Hsuan Feng

*Senior Vice President, Global Strategy, Planning and Evaluation
National Tsing Hua University, Hsinchu*



A glorious photo of Irwin Jacobs and the audience after his spectacular speech

Preamble

In my opening speech welcoming Dr. Irwin Jacobs, Founder of Qualcomm, to deliver his speech at National Tsing Hua University on November 1st, 2013, I said the following”

“Until today, National Tsing Hua University had welcomed countless world-class academicians; it had also welcomed countless world-class regional and global entrepreneurs. But, ladies and gentlemen, we have NEVER welcomed an individual who could claim to be both. Today, we changed all that. Irwin Jacobs is one such very very rare individual. Today, Dr. Jacobs not only bring to us a new understanding of what it means to be a world class university, what it means to be a man of culture and love for humanity, he also brought here a watershed moment for National Tsing Hua University. We will never be the same again!”

That comment just oozes out of my mouth without any prior mental preparation. It came out spontaneously because the day before his speech, I had the honor and pleasure to spend a great deal of time with him, which allowed me to know him more as a person and not merely as a world renowned dignitary. He is a rare person who made me feel just after a few hours of intimate interactions that I am a better person because of that.

Thus, this is why I say that the visit of Dr. Irwin Jacobs is mesmerizing and intellectually stimulating.

Welcoming Dr. Jacobs’ arrival is an experience of a life time.

It is not every day that I welcome someone however famous to Taiwan by going to the VIP terminal of Tao Yuan Airport. Dr. Jacobs is one such person. He came to Taiwan with his friend Dr. Warren Kessler on his private jet. Dr. Norman Cheng, Dean of EECS, Dr. C. K. Toh, Honorary Chair and a person friend of Dr. Jacobs and I went to the terminal on the afternoon of October 31, 2013. Like a fool, we did not realize that the VIP terminal is a “administratively restrictive” area and

require prior registration with the authorities. Fortunately, ignorance is bliss, coupled with the fact that Jacobs and Kessler are the only two people coming in that afternoon. So the terminal personnel did expect someone to come, and when they learned that we are from National Tsing Hua University, they let us in without any difficulty. In fact, the director of the terminal said to us that “next time, when you come, make sure you contact us first!”

I did not have the heart to tell him that “there probably would not be a next time since I do not know anyone else in the world that would come to visit us in his or her private plane.”



Dr. Jacobs' plane arriving in Tao Yuan Airport VIP Terminal



Photo taken at the VIP Terminal. From left: Dr. Cheng, me, Dr. Jacobs, Dr. Kessler and Dr. Toh

Dr. Jacobs and the world of academics

The best phrase I could muster to describe Dr. Jacobs is “down to earth.” Unlike many of his peers in the entrepreneurial world, such as Bill Gates, Michael Dell, the late Steve Jobs, whose life experiences, almost from day-one, were entirely that of business. Dr. Jacobs on the other hand was a world-class academician before becoming a world-class entrepreneur later in life. Indeed, before he co-founded Linkabit and Qualcomm, he was a tenured faculty member in electrical engineering from two world renowned institutions: Massachusetts Institute of Technology (MIT) and University of California San Diego.

In our conversation about his life at MIT, he said with glowing pride but not the least arrogance that he was very pleased to have co-authored the book entitled “*Principles of Communication Engineering*” with the legendary communication guru the late John McReynolds "Jack" Wozencraft. As Irwin said, this emerged from a course they taught at MIT. According to Dean Cheng, this book is still widely used even after 48 years since it was written. I cannot help when I learned about this to say to Irwin that

“you should be extremely pleased about this, Irwin. In fact, as an academic, I cannot think of any book of a highly technical nature that could last this long. For example, in the past hundred years, anytime a good quantum mechanics book was written, such as the one by P. A. M. Dirac, or Volume three of the Feynman Lectures, or Merzbacher, or Cohen-Tannoudji, or R. Shanker (which was my favorite until it was replaced by something else,) one could soon find a new book written in a better manner. Here you have written a book on a subject that is constantly under reinvention, your book can still not be replaced. That, Irwin, is as close to immortality as you are going to get! Congratulations!”

In fact, when he went to UCSD in 1966 at the fledgling stage of its engineering school, I would coin an old and grammatically questionable but vivid phrase:

“When Irwin went to UCSD, UCSD ain’t UCSD yet!”

It is worth underscoring that not until 1982 was UCSD inducted into the elite Association of American Universities (AAU), some 16 years after Dr. Jacobs joined the university. So I think it is fair to surmise that Dr. Jacobs had quite a bit to do with the transformation of UCSD into a modern intellectual powerhouse.

Quite by serendipity, a few weeks before Dr. Jacobs visited us, I had the pleasure of visiting UCSD. There I had conversations with the Chancellor of UCSD Dr. Pradeep Khosla and Dean of Engineering Dr. Al Pisano. It was transparent how important is Dr. Jacobs to the development of the School of Engineering and the University. It is also worth mentioning that today’s UCSD engineering school is called the Irwin & Joan School of Engineering.

What I am trying to convey here is that if Dr. Jacobs never developed his entrepreneurial skills later on in life, his academic achievements would already and still be the envy of all global academics!

Dr. Jacobs' talk

Unquestionably, the highlight of Dr. Jacobs' visit to National Tsing Hua University was his presentation on the morning of November 1st, 2013. The title of his talk is "**Innovation at Linkabit & Qualcomm and the Evolution of Mobile Wireless Technologies.**" The talk is an A-Z description of communications in the modern world. In fact, it is quite remarkable that as the world's communication goes from 1G, 2G, 3G, 4G and now even 5G, Dr. Jacobs' contribution is every step of the way, and ahead of it.

As an academic, I often get annoyed by someone giving a general colloquium type talk to be littering the talk with terminologies that only the speaker and a few experts would be familiar with. That is both the case and not the case in Dr. Jacobs talk. That **is not** the case because in his talk, while highly technical in nature, he gives transparent explanation of many of the complex ideas of the subject. That **is** the case because the talk did have a significant number of technical terminologies embedded in it.

In fact, this talk of Dr. Jacobs reminded me of the talk by Steven Weinberg at the Niels Bohr Institute (NBI) in Copenhagen in 1979 just before he went to Sweden to accept the Nobel prize. I happen to be at NBI that year as a visiting professor. The talk by Weinberg on grand unification of forces of nature was an absolute intellectual tour-de-force. It went from the simplest to the most complex. It took us through a whirlwind of the deepest ideas of physics, and quite often embedded in the talks with terminologies that only a few would know. Yet, I never felt annoyed because of two reasons. First, it gave me a profound appreciation that Weinberg and the ideas he was talking about were woven into a unity, and it was very hard to separate him from the ideas. Second, I felt wiser having heard the talk because it gave me an understanding of what it truly meant when someone

understood absolutely and through the absoluteness could then become innovative about a subject.

Since 1979, very seldom I felt that way. After Dr. Irwin's talk, I had the same feeling as I had in 1979. It was indeed an elated feeling!

I should mention that his talk not only attracted a massive and highly enthusiastic number of faculty and students of National Tsing Hua University, but it also attracted one of the top entrepreneurs of Taiwan, Morris Chang of Taiwan Semiconducting Corporations (TSMC) and a former President NTHU Academician Frank Shu. Chang is a world class entrepreneur and Shu is a world class astrophysicist. Interesting, each shares only half of Irwin's grand experience in life.

Our Last Meal at Tao Yuan Airport before Dr. Jacobs' departure

Even though Dr. Jacobs and Dr. Kessler came to Taiwan on Dr. Jacobs' private plane, for some technical reasons, he had to catch a commercial flight to China. So on the evening of November 1st, Dr. Cheng, Dr. Toh and I accompanied Drs. Jacobs and Kessler to Tao Yuan International Airport and saw that they, like "normal" people, checked-in at the counter.

What was extremely memorable was that after the checked-in, Dr. Jacobs expressed interest to "grab a bite" (an very American idiom of wanting to eat) before going on board. Well, since Tao Yuan Airport, unlike Hong Kong's Airport or Singapore's Airport, is not known for its exquisite cuisines, we could only find a very simple restaurant to get a meal.

Then something amazing happened. Dr. Jacobs ordered a 200 NTD dinner (approximately \$6 dollars) and a diet Coke! When I saw him truly enjoying this simple meal, and thinking that this guy not only could buy this simple restaurant, he could even buy the entire airport, I suddenly realized that this is indeed a man of simplistic needs. It is through such simplicity that he wanted to assist humanity.

I suddenly had a sense of overwhelming respect for him, not because of his great intellect, not because of his tremendous wealth, but because of his simplicity.

I count my lucky star that I got to know Dr. Jacobs.