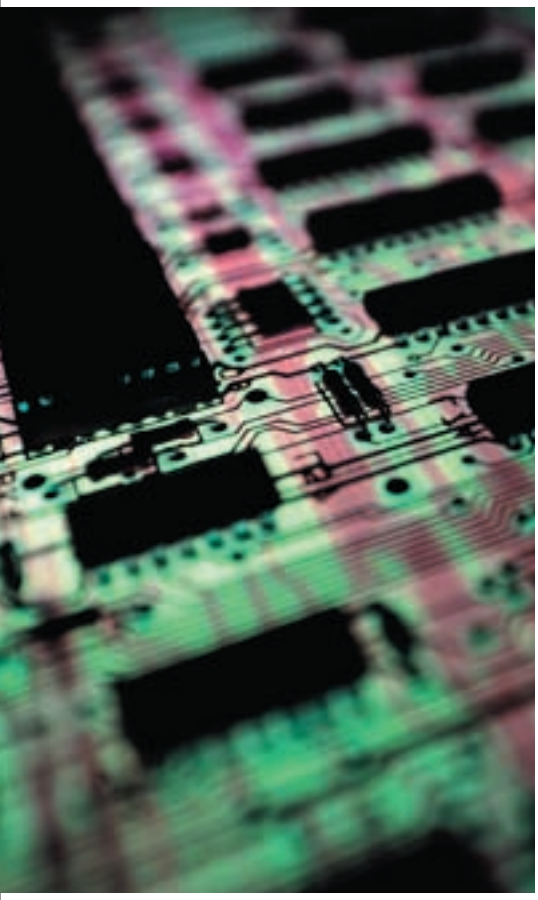
# From Cagayan Valley to Silicon Valley:



## An Interview with Dado Banatao

Francis L. Huang

Inventor, visionary, and venture capitalist, Dado Banatao, the most well-known Filipino-American entrepreneur in Silicon Valley, shares his insights on entrepreneurship, education, and engineering.

**Diosdado "Dado" Banatao is the most** well-known Filipino-American entrepreneur in Silicon Valley. He grew up in Barrio Malabbac, Iguig, Cagayan in the northern part of Luzon. In his youth, the place had no running water and electricity. His father was a farmer, and many of his friends never studied past grade school.

Today, Dado flies his own planes, drives a Porsche convertible, advises top business leaders and presidents, and gives generously to promote the education of engineers and scientists. Dado became a success not by inheriting a business, land, or a family fortune. Neither did he have the social or political connections. He did it through the use of his own intellectual capital and lots of hard work through which he invented high-tech products, and founded and funded numerous successful technology start-ups.

Dado is now regarded as a visionary scientist whose breakthroughs have helped shape the personal computer (PC) industry (see Exhibit 1). He is an engineer, inventor, innovator and a venture capitalist (VC). He holds several patents and is responsible for several "firsts" such as developing the industry's first Windows graphical user interface (GUI) accelerator chip, pioneering the local bus concept for the PC, and putting the Ethernet controller on a single chip, among others. Put simply, his contributions have helped make PCs smaller, more powerful, and easier to network.

Dado is a three-time start-up veteran: he co-founded Mostron (focusing on PC motherboards), Chips & Technologies (C&T), and S3.[1] C&T, founded in 1995, went public after 22 months – one of the fastest IPO listings on record.[2] It was later bought by chip giant Intel in 1997 for a reported

Exhibit 1
**Dado Banatao's Contributions to the Computer Industry**

- First single-chip, 16-bit microprocessor-based calculator (1976)
- First single-chip MicroVAX for digital equipment
- First 10-Mbit Ethernet CMOS with silicon coupler data-link control and transreceiver chip (1980s)
- First system logic chip set for the PC-XT and the PC-AT (1985)
- First enhanced graphics adapter chip set (1985)
- Pioneered the local bus concept for the PC (1989)
- First Windows graphical user-interface accelerator chip (1990)

Source: *UPSIDE Today* (December 1997)

[1] Silicon Valley folklore says that Dado chose the name S3 to mean 'start-up number 3.'
[2] Source: http://www.asiaweek.com/asiaweek/magazine/2000/0721/biz.ayala.html

US$ 430 million.[3] S3 (now known as SONICblue) had a US$ 30 million IPO in 1993. Dado continues to invest in various cutting edge semiconductor-related companies through Tallwood Venture Capital (in Palo Alto, California), where he is Managing Partner.

For the past few years, he has been consistently in Forbes' Midas List[4] and has been praised for having "developed advanced chip designs that helped put Silicon Valley on the map."[5] In 1997, he received the prestigious Master Entrepreneur of the Year (in the US) award from Ernst & Young.

Dado, now 58, takes some time out of his still hectic workweek to share with the *SGV Review* his thoughts on entrepreneurship, engineering, and education.

## Starting out

**SGV Review:** How does a one-time airline pilot trainee transform himself into the most well known Filipino Silicon Valley entrepreneur?

**Dado Banatao:** I am an engineer, first and foremost. However, right after graduating with a B.S. in Electrical Engineering from the Mapua Institute of Technology, I actually joined Philippine Airlines as a pilot trainee. Later, I was hired by Boeing for an engineering job in the US and I finished my graduate studies at Stanford University in 1972. I've been in the Valley ever since. I realized that engineering was a lot more fun – I still fly my own jets though as a hobby. Engineering was and still is my first love. My love for engineering made me what I am today.

**SGV Review:** To what do you attribute your success – education, timing, luck, or guts?

**Dado Banatao:** All of those things! I grew up in Cagayan Valley, attended elementary school – 1st grade to 6th grade there. Later, I went to the Ateneo de Tuguegarao for High School. During my last year of high

[3] Source: http://news.com.com/2100-1001-230019.html?part=business2-cnet
[4] The Midas List of Forbes ranks the people who most successfully use venture capital to create wealth for their investors.
[5] Source: http://www.stanfordalumni.org/erc/reunions/asian_alumni_hall.html

**Executive Profile**

Diosdado "Dado" Banatao

Born: May 23, 1946

Dado is the Managing Partner of Tallwood Venture Capital, a venture capital firm focusing on semiconductors and semiconductor related technologies. Prior to that, he was a venture partner at the Mayfield Fund. Dado serves as Chairman for SiRF Technology and current Tallwood portfolio companies. He also served as Chairman and led investments in the Marvell Technology Group; Acclaim Communications, acquired by Level One; Newport Communications, acquired by Broadcom; Cyras Systems, acquired by Ciena; and Stream Machine, acquired by Cirrus Logic.*

Education:
- B.S. in Electrical Engineering (cum laude), Mapua Institute of Technology
- M.S. in Electrical Engineering and Computer Science, Stanford University

Early work experience:
- Philippine Airlines
- Boeing
- National Semiconductor
- Seeq Technologies
- Intersil
- Commodore International

Companies co-founded:
- Mostron
- Chips & Technologies
- S3

* *Source: http://www.tallwoodvc.com/team/bios/dado.html*

school, my counselor at the Ateneo, after looking at my grades in math and science, suggested that I pursue engineering. I never thought of that–at that time, I was young and I just wanted to have fun. My father was a farmer and my mother was a simple housekeeper–there was no sophistication in terms of careers.

If there is one thing that I must credit the Ateneo for–first and foremost–is that they teach their students how to think. I totally believe that they challenged us and emphasized the thinking process. Lo and behold, when I went to Stanford, it was the same kind of institution as well! Stanford emphasized that they will train their students to think as part of the process–I was lucky that my high school and graduate school were thinking along the same lines! Basic training was important–the foundation of how to think

is critical. I can say this now looking back–discipline is good but teaching how to think is unique.

I was successful as an engineer and engineering is a difficult profession. I was lucky because I loved doing it–the math, science and the physics. I believe that when you like to do things, you usually are good at it. You have to be trained properly and be good at it. I think I'm a pretty decent engineer. I'm not the best engineer, but I can hold my own against others. You have to work hard. Scientist/inventor Thomas Edison once said, "Genius is one percent inspiration and ninety-nine percent perspiration." I believe in that–"sweat equity" has to be put in. It's the love of doing something that gets you over the hump in order to be successful. You really have to love something to wake up everyday and to have that passion for what you are doing.

You have to take risks–even if you have the proper education and are willing to put in time. Occasionally, you get lucky but I believe that you make your own luck. If you don't do anything–you will never get lucky. You have to get lucky by working at it.

You have to **take risks**–even if you have the proper education and are willing to put in time. I believe that you **make your own luck.**

**SGV Review:** You are credited for co-founding Mostron, Chips & Technologies and S3 – what was life like for you back in those days?

**Dado Banatao:** In a start-up it is really difficult. Long hours are a well-known part of the equation. You really have to put in the time. Being inventive is not about being smart or being a genius but putting in the time–a lot of time. I thought that sleeping was a pain in the butt and that sleeping was overrated. If my body could sustain me by not sleeping–the better. I also drove my people the same way.

A start-up takes a lot of effort, a lot of smarts and time. I've described working at a start-up as scary, hard, and suicidal. Suicidal because there are a lot of failures–you know the chances to fail are high but you still do

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it. One out of 10 companies succeeds–the other 9, you don't hear of. That's why there is risk taking.

You are always on the edge, there are highs and lows. Sometimes, something works or you were able to get a customer. Other times, nothing seems to work or you can't put together a business deal. That's why the passion, liking what you do, is so important. It's what gets you through the rough spots and it's what makes you wake up early. You really have to love what you are doing.

I used to be up for 21 hours continuously–I would have a hard time sleeping as I would think about a lot of issues when going to bed. Nowadays, I get a bit more sleep–now I average 5 hours a night.

You do a start-up because you love it. A lot of entrepreneurs want to do a start-up because they want to make a lot of money. As a venture capitalist today, that's a sign for me not to invest, because there is a 99% probability of failure in that type of a company.

As venture capitalists, we still work with our companies and we still act and feel like entrepreneurs. Our primary goal is to build companies–we invest not to make money but to build companies. If you can successfully build a company–the financial part will be taken care of.

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## Life as a venture capitalist

**SGV Review:** What companies of yours are you most proud off?

**Dado Banatao:** From the perspective of a venture capitalist, the most financially rewarding was Marvell[6] (NASDAQ: MRVL), which today has

[6] The Marvell Technology Group designs, develops, and markets integrated circuits for communications-related markets, providing the interface between real world, analog signals, and the digital information used in computing and communications systems. Marvell listed on the Nasdaq at US$15 a share–and closed over 300% higher on the first day of trading.

a market capitalization of over US$7 billion.[7] Cyras Systems (acquired by Ciena) and Newport Communications (acquired by Broadcom) are successes as well.

In terms of companies with an impact on the industry, C&T and S3 were the most rewarding because these revolutionized the PC industry. They were also very financially rewarding. Today, another company I am involved with as Chairman of the Board is SiRF[8] which I feel has an impact equivalent to C&T's. We are bringing GPS[9] technology to the consumer market–for cell phones, cars, and other consumer products. We are building an industry. Interestingly also, early on, majority shareholders of SiRF were Filipinos such as the Ayala Group and First Philippine Holdings.

**SGV Review:** What has been your biggest mistake?

**Dado Banatao:** My biggest mistake was my first start-up Mostron, which focused on PC motherboards. We did not focus too much on the money part, and we literally ran out of money after the first year. However, that failure led to the creation of C&T where we created the very first chip set for the PC. Without Mostron there would have been no C&T.

We had funding at C&T as we received US$1 million from an angel investor. You have to remember, in 1984, there was no PC industry to speak of. Our marketing guy came from Intel and they had no PCs as well. Venture capitalists did not believe there was going to be a PC market, and we even had to go to Japan to raise an additional US$ 3 million (the guy we spoke to thought our products were cool). After our success with C&T, we had no problem at all raising funding for S3.

**SGV Review:** As a VC, what are the top three things you look for in the companies that you invest in?

**Dado Banatao:** Our number one focus is on the technology. We ask "how good is the technology?", "how differentiated is it?" and "how tough

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7 As of 10/1/2004, Marvell had a market capitalization of US$ 7.5 billion (source: Bloomberg). Dado was a former co-chairman of Marvell.

8 SiRF Technology Holdings, Inc., headquartered in San Jose, California, is a supplier of Global Position System (GPS) semiconductor and software solutions designed to provide location awareness capabilities in high-volume mobile consumer and commercial systems. Ernst & Young LLP audits SiRF.

9 Global positioning system (GPS) technology allows an object to be located or tracked anywhere in the world.

is it to do?" We don't look at easy-to-do technologies. Our second question is whether the product idea is addressing a large, growing market. If there are already other competitors present in a big market–all the more the technology must be superior. We tend to shy away from developing markets–it is hard waiting for the market to happen. Third, we look if the company has the right people to execute that technology. From there, the rest should follow.

Other VCs usually start with the third area, the people, and less on the hard-to-do technologies. With us, we don't care how good the people are, whether they have been successful in the past–they must be tied with a unique technology with a large growing market.

**SGV Review:** Do you miss those days when you were more involved in design and development?

**Dado Banatao:** Well, I am still around ideas and technology. I take product ideas and still scrutinize them and the companies. It took me a few years to get over not being that involved in design. I loved to design–it was like a drug for me and it was hard to get out of it. I eventually had to wean myself off it but I am still surrounded by technology anyway.

### Improving the Philippines

**SGV Review:** In the Philippines, what would be for you a good place to start in improving our country's competitiveness in the field of information and communication technology (ICT)?

**Dado Banatao:** Well, for starters, it's not just the ICT field that needs improvement. There is a need for a massive upheaval in the way we train our kids and the way we train our experts. There are a few areas where we are competitive in such as healthcare services (nurses and doctors). If you move to the technology field–there is a need to change the way we train our kids in the sciences. We have to

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start at the beginning–from grade school, to high school, and so forth. We must train our people better. Even back then, I had to retrain myself as well when I moved abroad.

**SGV Review:** You once said in an interview "the Philippines – the government and private sector – has the money, but not enough entrepreneurs are willing to fund risky new ventures in technology."[10] What do you think are the reasons behind that?

**Dado Banatao:** First, let me clarify this statement as this is tied to the previous question. The Philippines doesn't have enough technical experts and entrepreneurs come from experts. Usually, people think of entrepreneurs as people who think of something interesting and go out to do it. That's really not our definition in the Valley. You have to have some level of technical expertise–something that you can do very well and that you can use to compete with. The engineers are the ones that can create products, and they can create products with the right technical training. The Philippines needs more engineers and more technical experts.

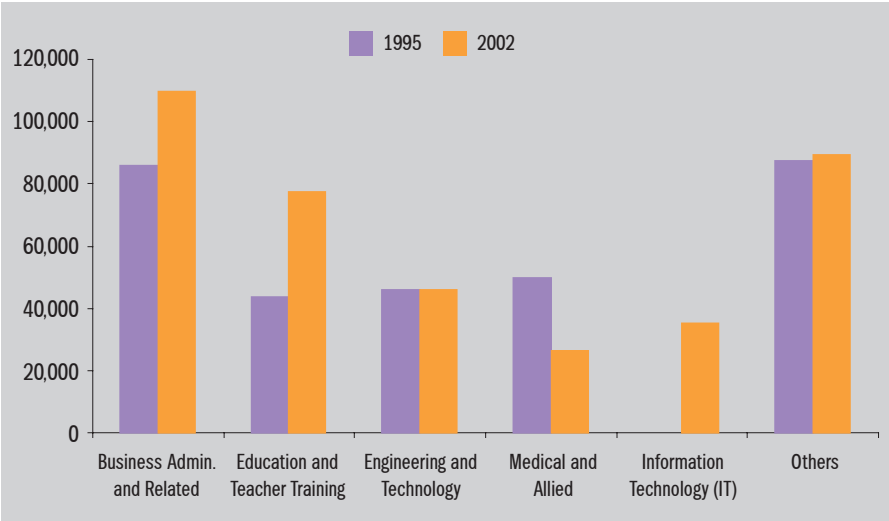
There is very little venture capital in the Philippines to speak of. Many investors are risk averse and have a very short-term view when it comes to investing. They like to see returns right away–in technology it is not that easy. A new culture needs to be developed–one that emphasizes risk taking in technology for the long term.

**SGV Review:** In the Philippines, the most popular and growing discipline is business administration and related courses but not engineering which has stayed relatively flat (see Exhibit 2)–what do you think are the long-term effects of this?

**Dado Banatao:** This is a worrisome trend. If the country cannot create competitive products–the Philippines will always buy from the outside. Very simple things like PCs are sourced from abroad. No single local company in the Philippines, to my knowledge, can even design and produce a PC while being competitive. It pains my heart that endlessly the Philip-

[10] Source: http://www.newsflash.org/2004/02/si/si001861.htm

Exhibit 2
**Historical Graduates by Discipline Group, 1995 and 2002**




Source: Commission on Higher Education

pines still has to buy PCs from Taiwan. I don't understand it. If we are really good in engineering–we should be able to do that on our own.

**SGV Review:** How do we get more people in the Philippines interested in science and math?

**Dado Banatao:** We need to reward them properly. The reward system in the Philippines is screwed up. A few years ago, I spoke at a CEO conference at the AIM and I mentioned that managers are rewarded inordinately high versus everyone else in the organization. Engineers are not glorified in the Philippines. I said that if you want things to improve, if you want to move on to the next phase of development, you guys should go back to your companies and begin rewarding engineers better than any of your managers. Bright minds will go to other

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disciplines that are being rewarded. That's why we have all these Filipinos going to the US for their MBAs–managers in the Philippines make the money. Engineers don't get the best rewards but, ironically, they are the ones who create the products.

After graduating from Mapua, I was offered a job at Meralco as an engineer. I turned it down because I thought, "I worked hard to become an engineer and this is all I will get?" My friends couldn't believe that I was turning down the offer as this was one of the top jobs as an engineer. As a pilot trainee though at PAL, I got a better salary–way higher than at Meralco. Frankly that's why I did not practice engineering in the Philippines.

The government, as well as industry, must uniformly promote technology. There has been talk about building a Silicon Valley in the Philippines–the desire is there but that has to be matched with reality. Bright minds will not go into technology if there is no reward, unless they love it. People who go into technology and succeed do so because they love it, first and foremost. They don't necessarily think of the eventual financial reward, but they do have to be rewarded both in terms of responsibility and financially. That's what I would like to see.

**SGV Review:** You've been known to have set up several charitable foundations–what is your number one cause?

**Dado Banatao:** My focus is on funding science and technology education. It's all about education–especially engineering. For example, for the 3rd year, I have been working with the University of the Philippines (UP) where I take a professor from UP and have that professor spend time doing research at the University of California at Berkeley. There, they begin to understand how another public institution can do engineering research and get exposed to the latest trends. Hopefully, what they learned will be brought back to the Philippines for the training of future

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experts. This is a minor, miniscule effort but regardless of how small–it can make an impact. I take a long-term view of this and I am funding this for the long term – there are no shortcuts. I want the best and the brightest to go into the sciences and engineering. That is my number one objective for my foundations. I truly care about the development of the country, and hopefully others can help in this effort.

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