

Sun Micro Founders Panel Discussion: January 11, 2006

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Was the Event a Happening or Just a Scene?

Sun co-founders Scott McNealy, Vinod Khosla, Andy Bechtolsheim and Bill Joy got together on the evening of January 11, 2006 for an informative and sometimes electrifying panel discussion at the Computer History Museum. A standing-room-only crowd of 400 people listened and interacted with panel members for 2-½ hours, before the session was officially closed.

The Sun founders discussed the company's historical origins and evolution. They responded to some very pointed questions and shared their thoughts on: the current and future trends in computing, the state of innovation, outsourcing, potential deals with Apple (which all fell through), the Sun corporate culture, and role models. Sun's chief researcher and long time staff member, John Gage, conducted the interview and moderated the panel discussion as well as the long question and answer session that followed. Gage was the "original sales guy" at Sun – the only one who knew how to talk with customers – even though he has always been involved in research.

The Early Days at Sun

Sun was conceived with a three-page business plan that was "very succinctly expressed," according to Khosla. While Bechtolsheim stated that it was a good decision to form Sun in 1982, he could not relate the economic validity of Sun's founding to the present time. Providing some guidance to would-be entrepreneurs, Khosla stated, "We had doubts. There are always doubts, but you need to jump in and don't look back."

McNealy stated that during the company's conception phase, they were looking for a top-notch Unix person and were fortunate enough to have found Bill Joy. "Joy had his hands glued to the keyboard, coding away. He gave a big boost to the early Sun." Unix, as an open source software operating system "standard" was a key aspect of the early Sun strategy, according to McNealy and it remains so today. "We've spent the last 20+ years implementing this open source strategy."

Sun's initial target market was described by McNealy: "People wanted to run the same DEC VAX*- like applications on a personal workstation, rather than use timesharing or own a VAX outright. A standardized Ethernet (coax) interface helped Sun, because it facilitated connectivity between the workstations."

* DEC VAX was a very well respected, high end family of minicomputers in the late 1970's and early 1980's.

Sun's competitive edge was to enable VAX-like application software to run on hardware costing 1/10 the price – a \$10K graphics workstation.

Moderator John Gage was one of the first employees at Sun. Gage's hiring at Sun was a condition that Bill Joy placed on his own employment. He is credited with conceiving Sun's moniker or tagline: "**The network is the computer.**" Gage invented the phrase while headed to China for a business trip. It is little known, but the second half of the expression never caught on: "The machine is the manual." This was intended to mean that using a computer should be a self-explanatory experience, without a manual required.

As Sun grew, pundits called for replacement of the four founders with "senior management" from outside the company. Against all odds, the original founders persevered (although Khosla and Joy have been venture capitalists for some time and Bechtolsheim left the company from 1995-2003). Joy and Bechtolsheim served as magnets to attract top talent to Sun, which now has almost 200,000 employees.

The Current State of Innovation, H1b Visas and Outsourcing/Offshoring

McNealy opined that Silicon Valley was now in trouble because there is not enough attention being paid to innovation. He stated that the only computer companies that are now innovating are Sun and IBM – there is not a lot of innovation at the other computer companies. Dell and HP have essentially given up. (To this reporter, the inference was that the other computer companies are dependent on innovation from the microprocessor companies - Intel and AMD). Sun continues to innovate by hiring creative people, especially recent college grads, and is leveraging open source applications to support Sun's computing initiatives (based on the Java platform).

Khosla said that it only takes a few people to make innovation happen. We need to empower those people. No matter where you look, there's an opportunity for innovation. Every single problem represents such an opportunity (his current favorite problem to be solved appears to be in the field of alternative energy sources).

Joy maintained that innovation was necessary to maintain progress in technology (isn't that obvious to all?). Gage implied that making computing equipment smaller (not just faster) and more energy efficient should be top priorities for technologists. Bechtolsheim noted that this has already happened – very low cost chips with low power consumption have made possible a wide array of consumer electronic products (i.e. gadgets galore).

Curtailment of **H1b visas** was a burning issue for McNealy. "We are torching ourselves for not letting smart people come to work in Silicon Valley. We should

ask those people to stay here for at least 10 years after they get their university degrees.” McNealy noted that Khosla and Bechtolsheim were immigrants who had paid more than their fair share of taxes so they have hardly been a burden on our society.

McNealy diminished the threat from **outsourcing** (and off shoring). He denied that jobs gained overseas translate into jobs lost in the U.S. **We need to focus on innovating to create more opportunities for jobs here**, he argued.

McNealy maintained that ownership of intellectual property and lack of brand name have become huge barriers to entry for computer companies (he did not mention the large amounts of capital needed). Sun and IBM are the last computer companies left doing R&D, he maintained. Apple had a success with the iPod, but that will be eclipsed with multi-function cell phones in a few years, because they will have all the iPod’s capabilities.

McNealy continued, “There’s no longer a huge geographical barrier to entry (presumably due to globalization and the notion of the global economy). It’s much easier to do business in Europe now (then it was 20+ years ago). We will all be surprised at how fast new brands will be accepted within the next five years.”

Bechtolsheim noted that the cost of capital was high in the U.S. But with the open source movement, innovation can occur anywhere in the world.

So should we fear the developing countries as a threat to the U.S. high tech industry? McNealy definitively says no we should not! “We need to get low cost, low power, wireless technologies widely deployed. We need to help the developing countries develop, not be afraid of their development; a developed world will be a better and safer world.”

Deals With Apple That Were Not to Be

While it’s well-known that Sun attempted to acquire Apple Computer, there were other alliances with Apple that also fell through. Joy recounted several of them: an attempt with Microsoft and Apple to create a common file protocol; an attempt to partner with Apple to create a merged user interface; and an attempt to persuade Apple to switch to Sun’s Sparc micro-processors rather than the PowerPC chips it ultimately chose (and began abandoning this week with the announcement of Intel-based Macs).

"We got very close to having Apple use Sparc. That almost happened," Joy said. "In total, there were six very close encounters" with Apple, he noted. That none of them worked out was a "personal disappointment" for Joy, who spent years as Sun's chief technology officer.

Sun vs. Microsoft: Sun’s Open Source Strategy is the Differentiator

McNealy said that Sun and Microsoft were leaders in software development platforms for workstations – Java and .Net respectively. There is an industry initiative to make these two platforms interoperable, he said.

One key difference between the two companies is that Sun has now open-sourced everything, while Microsoft has not. Joy opined, “Developing great open source systems is what we always wanted to do.” Bechtolsheim chimed in that it was surprisingly difficult to give open source code away.

Then how does Sun make money if it is giving away free Java downloads?

In response to this precise question from the audience, McNealy had a two-part answer: 1] “We are going into cell phones and consumer electronic appliances that use open source code.” These are new markets for Sun. 2] “We can make money on the back end hardware that supports the Java software platform-workstation, server, disk drives.”

Another questioner asked **why do people stay with Microsoft?** McNealy quickly answered that query by stating that, “there were massive barriers to exit.” He compared life of a computer – the hardware – to the half-life of a banana. He said that people think that the exit costs from software systems for those already using Microsoft dwarf the costs of computing and storage. But the shift to web services will blur this distinction. Hence, Sun won't leave the server business, because it will form the foundation for any kind of computing. People are slow to change – as an example, most data centers today have obsolete CPUs/servers.

Bechtolsheim added that there are more business opportunities in Operating Systems outside of Microsoft (presumably he meant Linux and other Unix/Solaris based OS's).

McNealy interjected that, “**it is Mankind vs Microsoft and Mankind will win.**”

Khosla added, “There are lots of new (business) models and no one has a natural monopoly (on software systems) anymore. New, non-PC resident uses of computing and new applications will be the norm. Google, Yahoo (on the Internet), and Apple (with the IPOD) are proving this.”

The Sun Corporate Culture – a Key Factor in the Company's Success and Durability

According to McNealy, “Sun always fostered a culture of integrity, dignity, respect, and hard work. Sun's corporate culture is based on a “We share” model. Our motto is, “Kick butt, have fun.” It has worked well for current and former Sun employees.” This philosophy has enabled Sun to survive and innovate, while other competitors died (most notably DEC and the other mini computer makers).

Sun is correctly positioned for future growth, according to McNealy:

- 37% of the world's archived data is resident on Sun systems (making them a leader in storage systems – which is not very well publicized).
- Sun and IBM are the only two computer companies that can build a grid. As noted earlier, these are the only two computer companies that are innovating, according to McNealy.
- The two operating systems now being used for new application programs are Solaris (Sun's version of Unix) and Red Hat (based on open source Linux)- not Windows!
- Since computers have “the shelf life of a banana,” it may make good business sense to rent computer time than to own the machine. CPU hours can be thought of as a commodity service, much like electric power. Think of CPU hours as equivalent to Kilo-watt-hours of electricity.
- The phrase, “The network is the computer” has endured the test of time and Sun recognizes the business opportunities presented by the Internet. For example, they are working with Google to enable a free download of the Google toolbar on Sun machines. Of course, Java applets are widely used by web software designers.

The Role Models for the Sun Founders

The first role models for Khosla were the founders of Intel. Bechtolsheim Grove led the company very aggressively and had great values. Steve Jobs (co-founder of Apple) very passionately and religiously believed his own ideas, independent of what others thought and told him. Larry Ellison (of Oracle) has the same kind of religious belief system as those other great leaders.

For Joy they were John Gage (panel moderator and Sun's chief researcher) and John Doerr (the well-known and very successful venture capitalist of Kleiner, Perkins, Caufield & Byers).

For Bechtolsheim it was Albert Einstein. He showed amazing consistency in how he looked at (and analyzed) the world.

McNealy could not think of any role model(s) at that moment.

At this point the session had lasted 2 ½ hours. Len Shustek, Computer History Museum Chairman of the Board, officially closed the panel discussion/ Q and A. He thanked everyone for coming and for the lively audience participation in the session. Audience members then mingled with each other and some brave ones approached the Sun founders for one on one discussions.