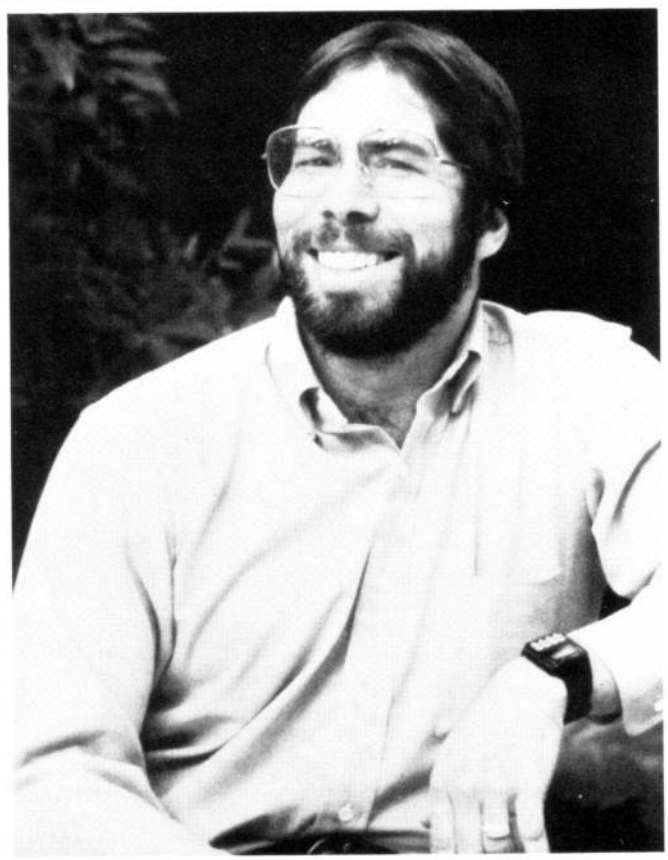
...And Then There Was Apple

Steve Wozniak
transcribed by Jack Connick

In January of this year, representatives of user groups around the world gathered at the Apple World Conference in San Francisco. Last Month, we published Part I of Steve Wozniak's speech to that audience, where he discussed his early interest in electronics and computers, and his first experiences with user groups. In this concluding part, Woz describes how his fascination with the 6502 microprocessor led to the genesis of Apple Computer.



The 6502 microprocessor was kind of interesting, because the 8080 is the big one—it sells for 400 bucks. A lot of us would think, "If I could wait for a year, I could save up 400 bucks". And that's the typical scene.

But the 6502 microprocessor was introduced by a company called MOS Technology, located out in Philadelphia somewhere. They had a unique product introduction — they were going to sell it at the WESCON Component Show in San Francisco for $20 over the counter.

Over-the-counter meant quite a bit in 1975 because you could walk into surplus stores, if you were into electronics, and you could buy a certain transistor or a certain chip over the counter. But no surplus stores sold microprocessors. These were way off in the future and way too expensive—nobody would want one.

So to even buy an 8080 microprocessor for yourself, you sort of had to find out how to act like a company, and set up an account at a local distributor. The questions were kind of strange and they didn't seem to fit, when all you wanted to do was to pull 400 bucks out of your pocket and buy it.

> ***"A lot of the decisions that were made in designing both the Apple I and II were based around having no money."***

So the 6502 was going to be sold over the counter. Quite a few of my friends (from Hewlett-Packard and from the club) and I went down and we bought our 6502's. It was a very, very important day and, coming back on BART, we looked over the instruction set of the microprocessor and said, "Well it doesn't have increment like the 6800, but it has this other addressing mode". So it was kind of a wash as to whether it was really the finest processor of all time. But we accepted this, too.

That evening we had a Home Brew Computer Club meeting, and the big talk was that the 6502 had been introduced and quite a few of us could hold it in the air. We actually had one. Oddly enough, at that computer club meeting, another very major event happened. A company called Sphere, that had one of the first microcomputers, had come out to the WESCON Show and they dropped by the Home Brew Computer Club to give a presentation.

they didn't know what was really going on. So there was a lack of contact, and it was not obvious to the user groups, but it was shocking. I'm not going to go into it, but it was shocking.

Jean-Louis Gassée *[currently Apple's Vice President for Product Development]* comes from a different framework. I got to meet him. I actually made an address to the first meeting of the French Computer Club—I'm member number 000. He's a member of 3 computer clubs. I'm a member of 20. It turns out that he inspired a lot of third party companies to start up and develop products over there. I went over there late in a year that was just sort of dead, and you could only expect the Apple Computer, Inc. boards to work well with the Apple operating systems. And over there in France, they had 3 different things on one board and all sorts of things that we used to do here. He just sort of inspired that—trying to get the user group motivation going and all that. I became very close to him, very supportive of him, and I'm glad he's where he is now.

Anyway, piracy in clubs has gotten to be a big issue. Who wouldn't say that there isn't piracy in clubs? Okay, piracy, sure, clubs have always been a place where software is collected and traded, a meeting place for people who had software that you didn't have in your collection. The funny thing is that people bought a personal computer, not so much to show how they totally saved $1000 in personal productivity, but to show an incredible collection of software. Once you get a collection to a certain point, you don't stop collecting. You have to continue the collection, or it loses its value.

My viewpoint on piracy is that it's sort of like going 60 miles an hour. I do not believe that it costs software publishers one cent. It could be negative or positive. I think it's pretty close, in the sense that there's a certain amount of dollars that a community has to spend on software. Because there are huge collections possible, the total number of dollars is much larger. There are larger amounts of dollars spent on software. It might have been on blank floppy disks, but the total is larger. You can believe what you want to believe, but it's hard to say that anyone with $20 a month in allowance money is going to buy $150 pieces of software. They might have copied it, but they did not steal $150, because they could not have afforded to buy it. The resources weren't there. Just a viewpoint of mine. Ham radio operators have licenses—maybe computer owners should, too. There, that's about the second time in three years I've made a plug for that.

I'm really appreciative of the recent user group turn-around that I've seen inside of Apple. I'm really appreciative that we have an evangelist. I'm kind of sorry that I haven't been involved with it, I've been kind of away from it for awhile. But there was a challenge given today to the user groups—I heard it—which was that you user groups frequently want to change things in Apple, something that's being done. You want changes? It turns out that a lot of management, decision-making, and communications are going to be handled by Apple Link. I'll be darned if somebody in a club doesn't figure out how to crack Apple Link—you'll probably get what you want. That's the Apple '86 challenge...Thanks very much, good night.