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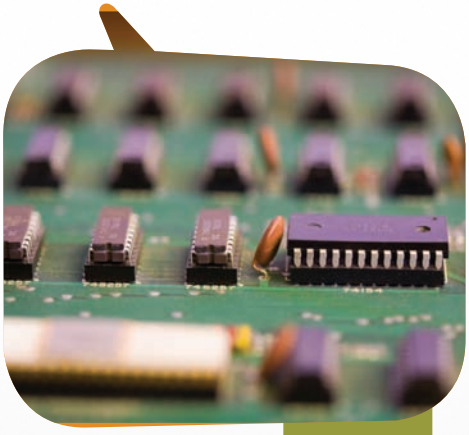
Steve Wozniak

Highlight Video Transcript



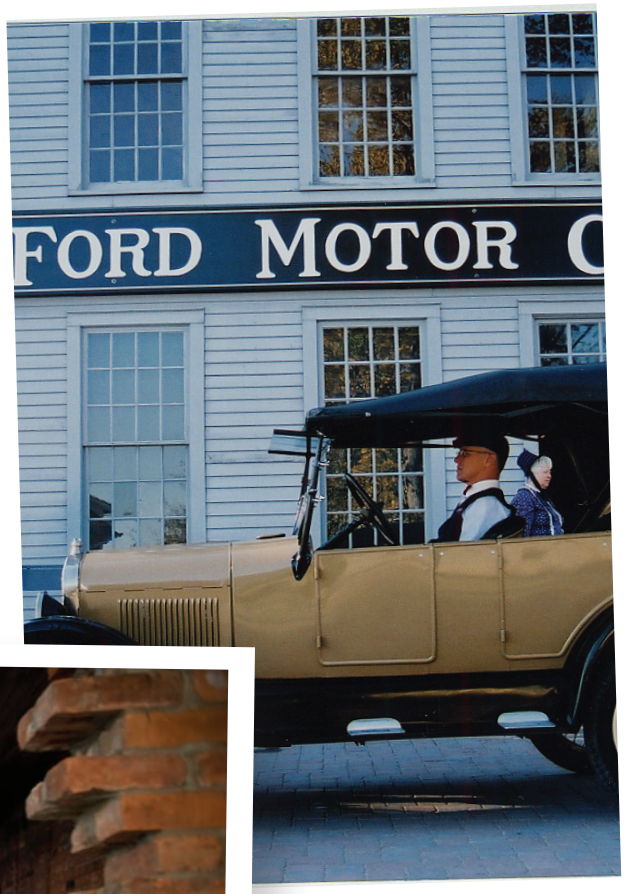
How did trying to give apples away for free change the world?

Steve Wozniak can tell you. He put technology in the hands of the people through the invention of the modern personal computer.

Leaving college before earning his degree, Steve Wozniak went to work for Hewlett-Packard. Working on his own time and at night, he helped create the first single-board computer with potential mass consumer appeal. This breakthrough, which led to the Apple I and Apple II personal computers, made home computing a reality for the average person. Learn from Apple co-founder Steve Wozniak how creativity and the spirit of play pushed his ideas to become real inventions.

Steve Wozniak - www.OnInnovation.com

In a workshop on Detroit's Bagley Avenue, Henry Ford did what he loved doing best: tinkering. With oil and machine tools, he experimented. Built. Rebuilt. Ultimately, in 1896, this yielded the Quadricycle, Ford's first motorized vehicle. Work was never simply work for Henry Ford. It was play. In a way, it was also oxygen. Decades later, another playful inventor, immersed in chips and circuit boards, introduced the product of his incessant tinkering. Together with Steve Jobs, his business partner, he utterly altered the way we work. And live. Very much like Henry Ford and his Model T.



Lower left: A quadricycle in Henry Ford's reconstructed Bagley Avenue workshop in Greenfield Village. Upper right: A Model T driving in Greenfield Village. Lower right: A Model T radiator cap.

Based on a verbatim transcript of an interview at the Computer History Museum in Mountain View, California, conducted August 18, 2008
— www.OnInnovation.com

Steve Wozniak.
Co-founder of Apple Computer.
Designer of the Apple I. Apple II. Good guy. Prankster. Genius.

Steve Wozniak.

01:15:07; 02

This teacher arranged for me to go out once a week and program a computer at a company in Sunnyvale. And I came to love programming. I wanted to do that for the rest of my life, and I set a goal: I am gonna have a computer that I can type in a program and run it someday in my house.

01:15:30; 22

I told my dad that dream. And he said, "Well, those minicomputers would cost as much as a house." That's what he said. And I said, "Well, I'll live in an apartment."

01:17:38; 21

I always thought of myself as an engineer. In later life, after we started Apple, I'd looked at it and saw I did the same things that an artist trying to make a piece of music so perfect, correcting it, correcting it, having all this talent and getting — knowing when something is so perfect that almost no other human could do it. And so then I realized I took engineering as an art. I was an artist at engineering.

"Well, those minicomputers would cost as much as a house." That's what he said. And I said, "Well, I'll live in an apartment."
— Steve Wozniak

01:18:01; 06

And I ran into a few others of those. In the early days of Apple, about one out of 10 engineers . . . one out of 20 . . . would be this artist type that everything they could show you was so perfect, they would just show it off.

A display of early personal computers at The Computer History Museum.

Man and machine.

01:19:10; 05

They were also the ones who were the most humanist. That spoke the greatest words about how society should be affected by computers, how computers should treat a person, how you can make the human being more important than the technology.

01:21:46; 09

If the person has to think to — "I remember how to do this and this and this step, and those 20 steps on this computer," then the person has had to conform to the technology and the technology's been made the master.

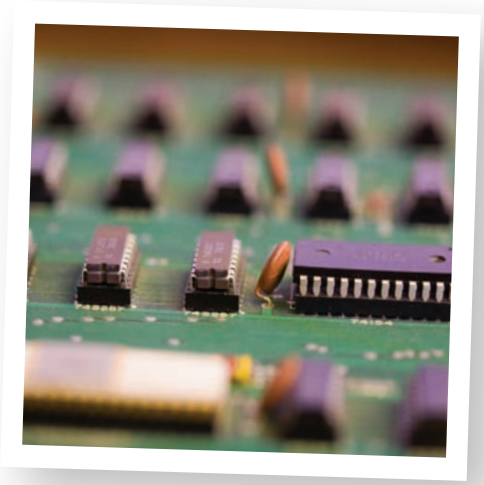
Going your own way.

01:11:46; 07

Through most of school, I had been an outsider. You might call it a nerd. You know, I was a techie, so you might call it a geek.

01:12:06; 09

My group of people would be just weird guys that were interested in building an electronics project. And as a result, that made me, I think that made me very independent. You know. You can do something on your own and you don't have to listen to everybody else. They can be wrong and you can still go your own way.



A close up of the Apple I.

Keeping it simple.

01:19; 42; 43

I learned that if you're — say you're writing a program, leave out a whole bunch of things that almost don't matter, but do the core of it very well.

01:20:09; 16

And sure, a lot of people would look at it and say, "You don't have 500 things." No, I've only got 20 things, but they do all the job. And I got good at that.

"'You don't have 500 things'. No, I've only got 20 things, but they do all the job."
— Steve Wozniak

01:23:27; 00

I took it as my goal to design a very simple, affordable computer which I knew how to do, and give it to the others. And I did. I passed it out for free. No copyright notices. No nuthin'.

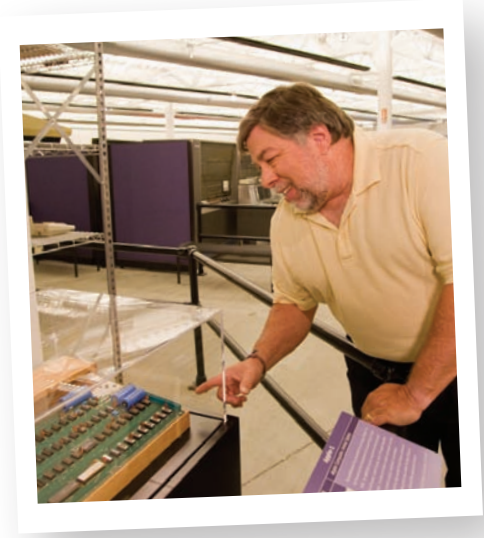
Home Brew and the Apple I.

02:07:11; 07

And that's when a friend said this club started up, that was the Home Brew Computer Club that had a lot of big social thinking combined with computers that were affordable.

02:09:12; 05

So then I finally got the tools one night. I got the time, I'd draft . . . I designed everything, thought it out, went in and started plugging chips in a board, soldering every wire on, testing and looking on oscilloscopes, debugging. "Oh my gosh, I'd made a mistake in the design." Fix it over here and move a couple wires, put a new chip in.



Steve Wozniak pointing out features of the Apple I.

02:09:31; 21

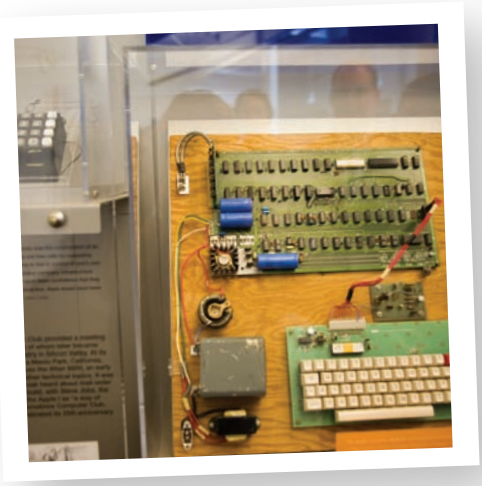
Or, "Oh my gosh, there's a problem here. Oh, two wires must be touching each other." And I'd fix it. And I'd get the thing working.

02:11:01; 20

Steve Jobs wasn't going to the Home Brew Computer Club at first, and I started telling him about this interest, this computer I had built.

02:11:20; 14

He started coming to the club and he saw there was interest in it. And I was passing out my schematics for free. I was passing out my code listings for the little program I had written for free saying, "Build your own. You can build your own." And I thought that 50 people would build their own. And almost nobody did.



Apple history exhibit at the Computer History Museum.

02:12:00; 14

So that was his idea, that we build this PC board for $20, sell it for $40 and call ourselves Apple Computer.

The Apple II: Little chip. Big fun.

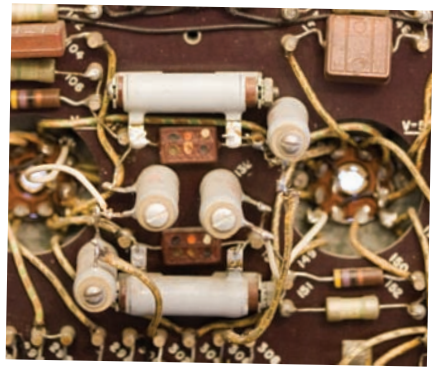
02:18:40; 06

To this day, yeah, the Apple II was just an incredible design.

"To this day, yeah, the Apple II was just an incredible design."
— Steve Wozniak

2:19:54; 04

And I didn't know if it would work but the day that — when I was building the Apple II and tested it and it worked, I called Steve over. I mean, we were shaking.



Circuit board of an early Apple.

02:20:39; 17

I was, you know, the first one to say that a computer can also be a game machine and it can be fun and it can be in the home. And we were just so lucky. None of the big companies thought that a little computer based on this little chip would be doing the useful tasks, ever, so they passed it by.

Engineering with passion.

02:27:18; 21

I had learned all my stuff in computers by reading other people's journals. I never took a course, never read a book on computer design. I would look at their design and see what they had done and I got it from others. So I wanted to pass that on.

02:29:13; 04

Apple had gotten to a point with maybe a hundred engineers or so. We had a lot of structured type thinkers . . . and you know I'm more of the artistic, almost the right brain approach to engineering.

02:29:29; 16

But a lot of these left brainers, every little thing was documented on paper in advance, like, "How can you know what you're gonna do in advance?" When I was creating things, it was like, "I'm gonna try this chip and see if it works roughly and get an idea of what it can do. "

02:30:00; 08

So I was outside of that structure, but it just wasn't something that I would fit into. I like little start-ups when people are talking rough ideas and you don't even know if it's possible or not. Let's go try it.

Newsletter of the Home Brew Computer Club.

A display of calculators at the Computer History Museum.

Steve Wozniak has a lot more to say. Visit OnInnovation.com

to see his full, unedited interview, read the complete transcript and connect with other visionaries thinking out loud.