Oral History of Steve Zelencik

Interviewed by:
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Laws: I'm David Laws, semiconductor curator at the Computer History Museum here in Mountain View, California. Today is November the 15th, 2016. And we're going to interview Stephen Zelencik. Steve, or Z as he is known to many in the semiconductor industry, joined Advanced Micro Devices, that we'll refer to as AMD from here on, in 1970 as its first outside salesperson. He served AMD for 33 years as it grew from a startup to a major player in the industry, in roles that included Senior Vice President of Sales, and Chief Marketing Officer and Officer of the company. I first met Steve when he was National Computer Sales Manager-- at Fairchild Semiconductor, when I was responsible for Burroughs. Steve and I met again at AMD where I worked for about 12 years from the mid -1970s. It's good to see you, Steve, thanks for joining us today.

Zelencik: Always Good to see you, David. And I'm Steve.

Laws: These were challenging and exciting times in the industry that laid the foundation for our modern interconnected world, but Steve, let's go back to the beginning and talk about the influences and what brought you to Silicon Valley. Where were you born?

Zelencik: Okay; I was born in East Chicago, Indiana. And the reason they said East was because it was east of Chicago, and it was in Indiana, and it's a steel mill and oil refinery foundry environment. I was born in a local hospital there, and my daddy was a pattern maker, of wooden patterns, for steel castings. Interesting times. So how much can we say about that. I can remember a lot because people lived close to where they worked then. And originally his house, he was one of eleven-- he was the youngest -- came to this country in 1910, he was born in 1900. Had to adapt to everything that was here, became a pattern maker self-taught.

Laws: From where, Steve?

Zelencik: Well he grew up in Bremen, Germany, but his father was really a Slovak; but Czechoslovakia.

Laws: Czechoslovakia, okay.

Zelencik: And the reason he was in Bremen, Germany is because his father worked in the steel mills. He always used to tell me, he remembered Kaiser Wilhelm and the troops marching through the streets of Bremen, you know, it was the First World War. My mother was Hungarian; 100 percent Hungarian. And my father was 100 percent Czeck or Slovak and he was a pattern maker in the mills, at a steel mill called Hubbard Steel, and I can remember, we lived very close to that. And in fact, there was a point in time when we lived with my grandmother, the Hungarian side. Now the Czech side were pretty stoic. These guys-- they didn't party much, but the Hungarians are crazy. They were always throwing a big party,

slaughtering goats in the back yard and pigs and making sausage and doing pretty amazing things. That part of the life was probably a good thing for me because it taught me a little, to be a little more loose and less sinister.

Laws: Did you have any siblings?

Zelencik: I had a sister-- still alive-- and she lives in Santa Barbara. And she's got three children, one of them passed away. And that's it. My mother died at 102, couple years ago in 2011. My father died when he was about 85, so it would have been about 1985; 1983, 1985. I think '83 maybe.

Laws: What about your school years?

Zelencik: School years, okay, we'll get into that.

Laws: Where'd you go to school, what did you enjoy doing, what did you not enjoy doing?

Zelencik: Well let me tell you about how we got to where I was in school years.

Laws: Sure.

Zelencik: We lived close to the mills in East Chicago, and one day he said, "You know, we're moving out of town." And this happened to be early 1941. So he said, "We got to move to the country," he bought a 1941 Plymouth and he had a house built about ten miles out of town, but that was way out of town at that point in time -- in Highland, Indiana. I can remember the house, he paid $6,000 for it. He could have had a brick one for $500 more but he didn't have it. And the reason we moved out town was because he said, "The war is coming; it's going to be a big war, and they may be bombing these factories. So we're going to move into the country." It was a big war, the Second World War, and he knew all this because they were making tanks, military tanks at the time. So we moved out to the country. I can remember times when we had rationing cards and gas rationing cards and couldn't get tires for cars -- couldn't get milk, couldn't get butter, couldn't get jam; but we survived all that, you know it wasn't that dark-- not as tough as where you came from. <laughs> So I went to grade school in this good Catholic grade school, hated every minute of it, every day of it. St. Mary's in Griffin, Indiana. Got sick one year and missed the year of school, kind of skipped through that, wound up starting high school a year later than everybody else, another small school, Griffith Indiana High School, farm school. Let you out early as most of the kids were working somewhere in a farm area.-- We always got out of school early because of the farm thing, and always came back after Labor Day.And that's it. Just went to a plain old high school in Griffin, Indiana, and had an opportunity to go to Purdue University. And you know what you did to get into Purdue then? You just graduated from high school with a B or better. They just brought you in, if you were a citizen of

the state of Indiana. And for 100 bucks a semester, I was in Purdue University. Electrical Engineering. That's what I wanted to be, all the time.

Laws: What did you know about electrical engineering?

Zelencik: Ah, you know, from the Heathkit catalogs, and, building crystal sets and stringing wires for radios across the back yard of the house to the garage. it just fascinated me. It always fascinated me. And I was determined that I was going to be an electrical engineer. So, I started school at Purdue extension, which was close by the house, in a place called Hammond which was close enough to all the rest of the steel mills. The extension really supported the mills. And the oil refineries. So it was heavy electrical; this is rotating machinery, Ward Leonard systems. Keep one hand in your pocket or else you're going to die, you know, if you touched anything. So that was the kind of electrical engineering it was. So I started out at the local extension in 1954; and lived at home. Had a '47 Plymouth, rusted out. And commuted back and forth, which was about a five mile commute in this car, and went to school, and did pretty well there. I mean, actually, exceptionally well. IWe didn't have a whole lot of money., a, '47 Plymouth cost $200 so that's what I was driving. And I wanted to go to campus in a big way. So I saddled up to that. When you were growing up as a kid back then, at 16 years old, you could go to work in the steel mills. So my first summer job in high school was a gray iron foundry. This was dirty, nasty work where you were making castings for single cylinder engines and gas pumps, and you were pulling back these molds and they'd break open and a hot iron would run over your foot. , The dust and dirt would never pass any EPA standard now. So I worked every summer and saved my money and that's one of the ways I paid for my tuition. So I went off to campus and it kind of overwhelmed me, you know. I got caught up in the good life, and not really paying much attention to school. I took a step back and I say, you know, -- you're not doing too well, you may get thrown out of here. So I decided instead of getting thrown out of there, I was already in queue for the draft, so I let them draft me. So I had two years of Purdue and then I let them draft me into the army because that was better than flunking out of school, I knew that. And I figured that if I got drafted, they're going to have to let me back in, I knew that. <laughs> So I got drafted and I went off to the Army.

Laws: Which section of the Army?

Zelencik: Oh, it was the Signal Corps.

Laws: Signal Corps, okay.

Zelencik: They put you through basic training. The first hard lesson I got was-- I didn't show up one morning for call, and then I wind up in the mess and I wound up on stove duty and it was in Fort Leonard Wood, Missouri, and I got stove duty. Now stove duty was you fired up the stoves with logs, and you kept them running all day until they quit cooking about 10:00 at night, and then, you, thought you were going to

go home, and no, they made you dismantle the stoves and clean out all the dirt. I didn't like that too much, so I said I'm not going to be late again. Anyhow, did the time in the Army, wound up at Fort Gordon, Georgia, 3rd Army Command Signal Corps, because I had the engineering background, a little, two years anyhow.

Laws: So was this your first time out of the state?

Zelencik: Well I had been out of the state, I'd been to Kentucky and Tennessee; I've been to-- Wisconsin, <laughs> you know, Michigan, you and Illinois. That's hardly being out of the state, you know. So anyhow, got through the Signal Corps, they had a deal where you could get out early. So I said, well that's really cool, I don't have to do my 24 months, so I just thought, they'll let you out early to go back to school. So I did. I think I did 20 months, something like that, and they let me out early to go back, and I started summer school at Purdue-- back into now equivalent of a junior in electrical engineering. But now I had a two-year gap. And you know, things changed a lot in the meantime, and holy cow, I mean I was immersed in this stuff and I was just really scared to death. But I survived. In the meantime, I had gotten engaged while I was in the Army to Harriet, and we got married and she moved to West Lafayette-- and we had a daughter. We lived on the campus in the married student housing, and I just kind of grunted through school and got out with my electrical engineering degree and had a daughter. Harriet was working for various places including Purdue University Ag School at one time. And so that was good. But we were kind of broke. So come time to graduate and I was going to graduate in the fall of 1960, because I had to go through summer school yet to make up for all of this stuff. So I had the real honest to goodness B.S.E.E. Honors degree, Purdue University. But broke. I mean, we spent all the money we had getting to where we were, and I started to interview for jobs. I interviewed-- I remember AVCO. That was in Cincinnati, and boy I thought this was going to be hot stuff. Also I remember Motorola. And you know, these guys were all looking for engineers. I wasn't that keen on just sitting behind a desk and running a slide rule; of course back then, you ran slide rules, you remember that, David?

Laws: I remember.

Zelencik: And I was not too keen on that, so I thought, you know, I'll keep looking. And since I had telephone experience in the Army, I got an offer from a little phone company in Illinois called the Calwogel [ph?], and I thought wow, this is cool, I'm going to be the only engineer in this phone company. I went over there and took the interview and I came back and I turned in my expense account, and I rounded off the mileage. And they bounced it back, and they figured it to the tenth.

Laws: <laughs>

Zelencik: And I said, oh, this is not good at all, I'm not going to do this. So in the meantime, Amphenol, which was a connector company came to the campus, The guy that founded Amphenol was A.J. Schmidt,

and he was a pretty good guy, and he was big into engineering, and in fact, he had his own engineering school Amphenol was basically a connector company, cylindrical connectors, and they were also famous for a blue ribbon connector. A blue ribbon connector was a flat connector that tied to the telephone cables. It was flat enough that they could pull it through the conduit, with the cables. So this meant a big change in the way they wired because they could pre-wire all this stuff, pull it through, and it was in there. They didn't have to go soldering stuff together. So Amphenol came in and they said, "We've got a new program, it's a basic training program, you're going to get 6 weeks of training, you get to go out to the field and we're going to start you at 5 and a quarter a month." Well, that wasn't bad; at that time, you know, $6,000 a year, if you made 10, the difference between 6 and 10, was like, you were driving a Cadillac or you were driving a Plymouth, you know. There was a huge difference because the incremental change in your income made a big difference in the lifestyle. So they started me out with 5 and a quarter a month, but they said, "Here's the deal: going to start you at 5 and a quarter a month and we're going to give you a car when you get out and on the street." And I said, "Really, a car?" "We're going to give you a car, we're going to give you a gas card." I said holy fritz, this was a serious deal. So I took the job, I went into the training program, in Broadview, Illinois, in Cicero, Illinois. It was still a basement business. They were molding these connector inserts out of phenolic in the basements of three or four story buildings in Cicero, Illinois, and the basements were real hell holes. The heat and the fire and you know. By the way, Amphenol stood for American Phenolic Corporation. They started the business molding phenol plastics and making toilet seats as a matter of fact. <laughs> But when the war came along, everybody needed circular connectors, and the molded inserts. So bottom line is, there I was, in a training program.

Laws: Was the training technical training? Or sales training--

Zelencik: It was a training program on connectors. I was the only engineer-- electrical, in there. You know, what do you have to know about a connector? E equals IR, right? Is the drop across the connection, and most of it had to do with the plating and spring loads on the contacts, and the coupling mechanisms. This is hardly an electrical engineering problem. There was not a lot of interplay inside the connector. Just DC voltages and maybe a little AC. so What I had to learn about was the various types of connectors, what they were being used for, and what the applications were. One of the big deals was hermetic connectors - where they fitted glass around the contact pins and it made it truly a hermetic seal, so no gas passed through the connector fitting. Anyhow, when I went to the training program, about half way through, I said, man, I don't know if this is really the kind of engineering work I want-- this is just a bunch of hardware, you know. I said, well maybe I'll go back and see what Motorola has to say. This was in the middle of the training program. So I go to Motorola, which is down the street from where I was living in the apartment, and I said to Harriet, I said, "I'm going to see what they have to say." They said, "Well come on in, yeah. You know microwave, so then we're going to put you in the microwave division." And I said, well this is really cool, that's-- microwaves, that's hot stuff there, communications. I said, "Okay, well tell me about it." He said, "Well here's what you do. I'm going to put you in the wave guide operation--" I thought that's pretty cool. "And you know your guy calls up and he wants to order a system, and we want you to know how tall the tower is, and what is the distance he wants,. You measure this, and you set up the plumbing. So you measure the wave guides and you measure the turns and you put all this stuff together and you put it in a kit and send it out." I said, "Well it's like a plumber, right?" He said, "Yeah, it's

like a plumber." And I said, "Well, okay, what's this got to do with microwave?" He says, "Well you're going to have to start with-understanding the heart--" I said I don't like that. So I went back and I just stuck it out with Amphenol. Got out in six weeks, and that was the middle of the winter. I mean December like the 8th-- and they said, "We're going to send you to L.A." L.A.-- I've never been to the West Coast, I haven't been, you know, west of the Mississippi. So I'm going to L.A., right? And wow. Put me on a 707 jet plane, took off out of O'Hare, landed at LAX. Holy cow.. Here I was. It was freezing cold in Chicago; I get off and it's 80 degrees, and I have to go from LAX to Chatsworth, California, where Amphenol had a big connector operation but they were really making cable assemblies for missiles. And it was the early Minuteman missile site -- and they wanted me to go into that plant and spend time there to learn about this stuff. I rented-- out of LAX a Renault Dauphine, why did I rent that? Because I had looked at one when I was in the Army and thought about buying one but I didn't have enough money. And you know, that was a rear engine car that was an adjunct to the Volkswagen beetle, right? The French version of that, which-- a little bit marginal-- so I rented that thing, took off down Sepulveda Boulevard, towards Chatsworth. Now the freeways weren't in there, so you had to go Sepulveda Boulevard, cut across Wilshire, and now it's 80 degrees out, it's beautiful, I'm going down Wilshire because I'm kind of weaving through to see what this is before I get into the Sepulveda Pass, and here's this good looking gal with high heels and a bikini on, walking a white poodle. <laughs> And I said to myself, oh boy, this is it. This is Nirvana. I'm here. And it was, it was cool. Went off and did my stint in the cable assembly plant at Chatsworth. And this was serious stuff. This is where they were doing the early rocket stage testing. Rocketdyne was out there, and the mountains would shake-- the whole place would shake when they'd fire these things. It was the beginnings of the big time missiles. One of the problems that they had with the early Minuteman was that they had a squib charge disconnect on the umbilical cord from the control unit, the head unit. So all the electronics are sitting up in this thing, and they got the umbilical going up to-- and just about the time they're going to fire this missile, they have to blow the cable off. And they use an explosive squib to blow the cable. Well, there was more shock imparted into the guidance system in that missile at the time they blew the squib and got the connector off of there, than it would ever see again until it blew up, you know. And of course, it was just knocking the heck out of the electronics that where pretty unsophisticated. So, that was a big thing we worked onand I got involved with where they finally used collet releases. And these things came off softly so you didn't have this [explosion] thing. They put me in the sales organization there. The first thing I did was get a couple of big orders for connectors. I sold them to aerospace guys, and this was good. I was working for a guy named Ray Overt, who had just moved to L.A. from Seattle, Washington. He was an interesting character. But his wife hated L.A., and she wanted to go back to Seattle. As this guy was a powerful enough sales guy in the organization they decided they were going to move them back from this very intensive L.A. operation to his place in Seattle where she wanted to live. The reason they wanted him to be in Seattle again, is because of Boeing Aircraft. The planes all had low end depot [ph?] connectors in them and it was a huge business. Boeing and Rohr, and Fluke Industries and Tektronix in Oregonwas the electronics industry in Seattle. And so I got involved with space-- Boeing Aerospace.

Laws: Did you move to Seattle to do that?

Zelencik: Oh, I'm sorry, oh yeah. He liked me so much he moved me there.

Laws: Harriet was out here with you then?

Zelencik: Yeah, she was, but didn't stay very long in L.A. I went about four months in L.A. until this guy decided he didn't want to live there anymore, and they moved him back to Seattle. He took me with him because I was the hot shit kid, you know. <laughs> But, you know, again, a differentiated guy in that connector business. I didn't know I was that differentiated, but it turned out I was. And so, off we go to Seattle. And when I was in L.A., I got rear ended on the freeway, it was the Pasadena freeway; got a $500 settlement for my pain and suffering. I had 500 bucks; it moved us to Seattle, I put $500 dollars down and bought a house for 16 grand, FHA loan. And we were in Seattle and I was working for this Ray Overt, He kept the airplanes and he gave me the aerospace [business]. That was very interesting because it was the Minutemen and the Dinosaur program. The Dinosaur was the dynamic soaring program where they were skipping off the ionosphere and then bringing it back down, That was the precursor to the space shuttle. And so I was there with this guy, and I kept thinking to myself, you know, Ray Overt is just as full of shit as a Christmas goose, <laughs> and he was. His knowledge of the product was virtually zero. He just took the catalogs to the engineers but his knowledge of the customer was superb. He knew these guys, he knew everybody there. He knew what they wanted, what they liked, what they were doing 24/7. I watched this guy operate and I said, you know, there's something different about what he's doing He entertained, He schmoozed, - He did whatever what was necessary to make sure that no matter what decision was going to be made, he was going to get the last look. And that's the way he operated. And the connectors kind of sold themselves because they had to have them. There was Canon and there was Amphenol and then there was Putnam the big circular stuff in all the military [applications] , and that was it. And there were a couple of other vendors, but you know, the big circulars were in all the things. So this guy, just ingratiated himself within the whole organization and of all the engineers. He'd take them out fishing in boats and going to baseball games, going to football-- not baseball- football is a big thing there-- Huskies, that was the big deal. Had boats going on the lake to the Huskies team-- and I'm going, wow, this is-- incredible way this guy operates. And it was a constant involvement with the customer on a personal basis.. So when stuff happened, good or bad, he always got-- he got the benefit. And so, that's what I learned from Ray Overt. Then Amphenol decided, , I was a pretty smart guy, and they decided that they were going to go into the thin films electronics business.

Laws: Thin film circuits?

Zelencik: Thin film circuits, on ceramic-- and they had a plating process they thought was pretty cool, they could do nickel on PC boards. And they had a deal where they were going to make these multi-layered nickel boards. Back then, remember there was a thing called WEMs [welded electronic modules], that was a big business, in building up individual components into module blocks-- flip flops and you know, whatever. So this deal was we were going to use flat material, punch a bunch of holes in it, lay down a nickel deposit, push the nickel up so it would come through the next hole, and they multi-layer nickel boards for welded PC boards. Well the problem was you could deposit nickel, but it was a whole different thing between that and malleable nickel where you were rolling this stuff out in strips. And the compatibility between welding and depositing nickel. What came out of the mills was rolled nickel and

was just not compatible. You'd burn off the deposited nickel, and it was just too granular. And that didn't work. And they had-- I got a great story for you-- <laughs> they had these thin film circuits. And they were making a transistor and a resistor and trying to make amplifiers for hearing aids. Well of course, they were small. But you know, we didn't really have the technology. And they did have some small connectors. We had that. And one day I got a call. Now they had moved me out of Seattle back to Chicago and I was one of the two sales and marketing guys for this electronics group. One guy had the east and I had Chicago west. Some guy called up from IIT, . The Illinois Institute of Technology, you know, God love them. They were out by the Chicago White Sox, south side of Chicago, it used to be Armor Tech. Armor, the food, meat guy, founded the thing. And so there was this big research program, and they called me out and they wanted to buy these small connectors. And I said, geez, you know, what are you guys doing with this? And they said, come on back here, you got to see this cage full of rats. And I said, "What are you doing?" And he says, "See this?" He says, "We want this teflon coated one, strip it back, put it in this connector. And we implant these in our rat's brain." And I said, "Well what do you do?" And he says, "Well watch this." Now this is a true story. And he says, "Watch this rat." And the rat kept hitting this pad. And he says, "You know what's happening? He's having an ejaculation without an erection." <laughs> Well, so much for that. The whole thing wasn't going well. And they said if we're going to get anywhere, we're going to move me back out to the West Coast. Well by this time, I had run through a house in Seattle and lived there three years. Of course, back then when you bought a house you lost your-- you couldn't finance it, it was like a used car, nobody wanted to finance a used house. And they were always worth less than what you paid for it.. So we bought a house in the Seattle area, Bellevue, sold that, moved to Chicago, bought a house in Chicago, sold that, lost money on that. Now they're moving me to L.A. So I'd go back to L.A., have to buy a house; I buy a house in Seattle for 16,000, I buy a house in Chicago for 20, and now I'm going to L.A. for 27. Well, again, enormous spread in those days, and so I'm broke and we have to take a second and we buy this house, and they have me working and doing this stuff, and one day they decide to close this thing down. I mean, that was it. They sent me back to work in L.A., they put me back in the office selling connectors. And you know, this was not the right thing to do, I wasn't-- but they had a plan. They wanted to move me to their Borg Instrument division in Janesville, Wisconsin. So I said okay. They had an airplane in that division. They had guys flying around in it. I'll go back there, see what's going on. And it was, again, middle of winter, December, January; get on the plane out of L.A., forgot a coat, get off the plane in Chicago. Holy cow, it was 20 below zero. I have no coat, just-- <laughs> I am thinking to myself, what is going on here? I had to borrow a coat from a guy, and of course, nothing fit me, and I went off to Janesville, Wisconsin to this Borg Instrument Division. Well they were making trim pots and they were making the old battery powered clocks for cars where -- you'd get a voltage pull on a relay which would crank a spring which would now set the clock going again, you know, if you remember those-- so that's what they had. And they're doing all this stuff and it's freezing cold out. And I'm thinking to myself, you know, do you really want to be the vice president of this? So, I come back and I say, nah, I'm not going to go there. So I got to get another job. And I said, "Harriet, I got to find a job; we're not moving back to Chicago, no chance-- or Wisconsin. No chance. I'm not going to get involved in all this hardware anymore." So I started to look for work, and I had a couple interviews. And one of them, I picked up an ad out of the L.A. Times and it was a small ad, and it said, "Wanted-- sales-- semiconductor salespeople." I don't even know if it was that sophisticated. Fairchild. So I took the interview and that's where I met Jerry Sanders. And he had the Sunset office.

Laws: What year was this?

Zelencik: This was in 1964.

Laws: '64, okay.

Zelencik: And I-- let me tell you -- I may weigh the same now, but back then I was young, 250 lbs and was fat, had a crew cut, and <laughs> broke. And so, I scoot over to the Hollywood office, and this one -- the first one was on Sunset Boulevard. And I go up there and-- you don't remember her, Helena Jaygo [ph?], she was tough as nails. And she was his secretary, and that was it. She takes me in his office and you know above his door is this [sign] "I fear no man-- yea though I walk through the valley of death I fear no man because I'm the meanest son of a bitch in the valley." And I walk in there and he's in all his glory, you know. - the Nettleton shoes, wing tips, proper coats of which I didn't have, you know, -- it was always brand name something, brand name ties. I threw my resume and he looked at it and put it down and started asking me questions. And I said, how could he have read it that quickly? But he did. Back then he had instant recall, a photographic memory. I think it all went away somewhere over time. It was 20 minutes into the interview, and I guess I had a good background. And he said, "Okay. You know, we're going to hire you. Just take all these books, and you got to study up on this stuff, and you'll come back next week, and you got Litton Industries." Well, Litton Industries was big time military electronics, and they were in the Valley and they had that building in Beverly Hills was just this colonial architectural place was the corporate headquarters, was big time stuff. "You get Litton." And he says, "But here's the way we work," he says. "We work every day, every night, Friday nights you get off, Saturday is okay, and Sunday you got to start preparing for Monday." I said, oh, "Okay." So I take these books, I go home, I start reading this stuff, and it's diodes and transistors, and RTL, you know--

Laws: Micrologic.

Zelencik: Micrologic and some DTL in there, and I'm thinking, man alive, this is a lot to learn pretty quickly. And then I thought about the way they want to work, and I said, that's crazy. These guys are nuts. I'm not going to jump into this. So the next week, I just take all the books back and I walk over to Helena and I say, "You know, I'm just not going to take this job." And I give her the books back, and bam. So I'm gone, so I go back to work figuring I'll eventually find something I want, I'm not even home and Sanders comes over to the house.

Laws: So you've moved back to L.A. at this point?

Zelencik: I was in L.A., yeah, Sanders was in L.A. This was when he was Regional Manager of Fairchild. And he comes over to the house and [talks to Harriet] he says, "You know, Steve's got to come to work for us." And so I come home, and she says, "Jerry Sanders was here," she says, "You got to go to work

for him." I said, "Wow." So I said better go back and look at this again. So I, you know, I really did. And I went back and we talked, and, but this was now 1965. Time had passed. And Sanders was leaving to come to the Bay area to be with the military marketing manager I guess. And Ed Turney was taking over, as the Regional Manager. So right in that transition, I said, okay, I'll come back, you know, I'll come. I'll join you. That's it, I'm going to bite the bullet, I'm going to work hard, I'm going to join you, I'm going to learn all this stuff. But the cool thing was that Litton Industries was no longer available. And so they had Burroughs Pasadena. And you don't remember Morrie Morin, because this guy was a crazy guy, a goof ball. But you know there were a lot of crazy people at Fairchild back then. You know and that sales office, you know, John Bosch and Gordon Russell and, Jerry Sanders and Ben Anixter for a while, I mean, this is-- you know this is some heavy stuff--

Laws: Strong characters--

Zelencik: Yeah, they were strong characters-- and they had some really goof balls, and this guy Morrie Morin, who used to rent a plane and fly out of Hawthorne to go somewhere to call on customers. He'd fly the plane for 20 or 30 minutes, land it somewhere, then we rent a car and go call on the customer. I thought this is crazy, you know. But anyhow, that's the way they were living then. And a lot of stuff was loose as a goose. They gave me Burroughs. Morrie spent, a couple weeks with me, that was it. Another thing about Sanders, by the way, he had the offices in Hollywood-- first office-- by the time I got through with most of the getting the job there, he had moved it in Hollywood again, but from Sunset to Hollywood Boulevard. The reason he had the office there is because it was the same building as Motorola and Motorola's guys were dumb. They would raid the Motorola garbage cans every night <laughs> you know, to see what was going on, and taking all these documents, So anyhow, I got Burroughs. And I started to talk to these guys, and the first thing I knew was they were looking for something big. They wanted to make high speed computers and there was nothing out there that worked but at Fairchild, we had CTL-- Complementary Transistor Logic. It burned power like crazy, but man, it was fast, you know. And the other thing I did was what I learned from Ray Overt. I immersed myself with these guys. I immediately took them to dinner, took them to lunch, went to their kids' Christmas parties, bought booze-- you know I did all the things that Overt did to become loved and revered. You know, but then I also had product that was really the right stuff. So all of a sudden, this thing got its own life. So CTL, which I focused on because with the diodes and transistors—[there were] too many part numbers [to remember]. And with the rest of the stuff, nothing met their specs. They were looking at current mode logic and they were looking at CTL. Well this really fit what they were going to make. They were going to make the fastest computers you could buy. And CTL took off, but I also became really entrenched with the people there. The purchasing people and the engineers. Even up through the top management. I mean, I was the guy. And. I was always there, I was there 24/7, I was involved in all of their personal things, and we became family. So when the time came for the final design, it was all CTL. But it was not easy. If you popped the lids off those [CTL packages]

Laws: Dual-in-line ceramic packages--

Zelencik: You could see the light, they would light up the room at night, you know, because they were running hot. And in fact, they were so fast, they were putting ferrite cores on the pins, to decouple them--

Laws: To stop the oscillations--

Zelencik: -- <laughs> Yeah. So it was just a great ride. So they got involved in the fast computers, the B5500, 6500 series computers, they were making the big disk drives there, everything-- like that. But it was all CTL in there. And of course, that was kind of the end of the ferrite memory stuff, you know. They were still using core memory; but the big disk drives were there. The core memory had to be main memory in this computer still, but Bob Seeds had done some work on solid state memory, right? Well, how many bits? 8 bits!

Laws: 8 bits, yes.

Zelencik: And so, came time to negotiate this order with Burroughs, and now they were locked into Fairchild. I mean, there was no second source. And they were also locked into me, because we just were buddies. And of course, I didn't get much credit for this. I got a page in the newspaper and, it's in the book. [The Spirit of AMD by Jeffery Rodengren] So we negotiated and [Ed] Turney was involved, and everybody because it was such a big deal. It was a multi-year deal to be the supplier of CTL because nobody else made it, and then we got to supply all the diodes and transistors and other peripheral logic that they were using as part of this contract. It was at that time a 25 million dollar contract, which was the biggest contract ever let in the industry.

Laws: Right.

Zelencik: And multi-year. And then of course, there was a last look clause in there, too. So we get to turn down anything we didn't want. If they were going to buy something, we get to look at it and we could pass on it if we didn't like the deal. So that carried us, carried me for a long time in Fairchild, you know.

Laws: Certainly Fairchild, was about a 120-million-dollar company and Burroughs must have been 20, 30 million of that?

Zelencik: Yeah, this was a huge deal, yeah. But it was my deal, you know <laughs> I was really on that horse and I had it, it was my horse. Great support from the factory; everybody was involved. it was just one heck of a deal. And of course, that carried me into being the computer sales manager for all computer products, all computer system products that Fairchild sold.

Laws: So Fairchild organized its sales into industry groups?

Zelencik: I got to get the real clean cut on all the computer [business]-- on a national basis. So I kind of rode that one, and you've seen that on the chart I just gave you [of the Fairchild Semiconductor Domestic Sales Force organization] Bernie Marren was in there-- Marshall Cox was there for a while; …

Laws: Turney--

Zelencik: Ed Turney, lot of guys doing a lot of stuff.

Laws: And you were still living in Los Angeles?

Zelencik: Living in Los Angeles, right; selling in Los Angeles. And what happened to Fairchild? Well, along came Hogan's Heroes, and you know, Sherman sold out, Noyce and Moore bailed out, Hogan's Heroes showed up, and Fairchild started to change. And it wasn't the same company. So what was great was changing a lot; and Sanders got fired by Hogan, and there was a big change going.

Laws: This would be, in 1968?

Zelencik: Yeah, 1968, 1969, right. '69. Big changes going on. And of course, the people I knew were out, and Noyce and Moore and Andy and guys started Intel. And Fairchild was not the place that we liked any more, and it was changing rapidly. The guys from Motorola were okay, but they were from a different world. I think that the best guy out of Motorola was Corrigan -- he was the most honest and most reasonable, and I liked him a lot. The rest of them were all really strange guys. Because they were all tied in with the concept that you better buy what I'm making <laughs> So you know, you don't have choices, no negotiation, this is my deal. They didn't understand the Fairchild way, which was a pretty aggressive mode of, you know, making sure that we got the orders and we kept the orders. What happened? Well, it was '69, [I joined AMD in '70], so, late '69, this thing was coming apart. Larry Bewley, Ken Crossa, and Arnold Jorgenson were the three main players in the Burroughs computer design area. They decided that they wanted to go into the computer business themselves, small computers. And I was going to be the marketing sales guy, and we were going to do this and form the company. Now I'm still at Fairchild, and they formed a company called Andromeda Systems, and they wanted to make computers. I didn't want to make computers; I told them I really wanted to make memory modules. And they said, "What do you mean, you're nuts." And I said, "No, you know, [Bob] Seeds has got this thing, we're just going to make bigger modules out of these small 8-bit RAMs and we're going to have big solid state memories. And they didn't like that, because they were computer guys, and I really got to looking at what they were trying to do, and maybe they were the precursor to the--

Laws: The mini-computers?

Zelencik: Mini-computers, yeah. But they didn't have the resources to pull this off. They had the technology and the smarts, but not the resources. And I was not really wanting to be a computer guy. I really wanted to be a semiconductor guy. So in the meantime, Sanders was trying to hire me and Turney was trying to hire me, and I was playing off both these things and deciding what I was going to do, and that spread me out. I was number 58 at but AMD maybe I could have been 45 or something like that, but I was screwing around with this deal. And I finally decided this isn't going to go. You know, I just have to tell these guys you're on your own. And I was still in L.A., and they wanted to come to the Bay Area. And I wasn't ready to come to the Bay Area, because my power base was in L.A. So I went to work for Turney who was working for Jerry [Sanders]

Laws: This would be 1970?

Zelencik: 1970, yeah. So I joined AMD and that was it. We had no sales, had virtually no customers, because who the hell were we? We were making second source products. The founding members of AMD were all different personalities in their own right, and Sanders was bigger than life. Interesting thing, Sanders was by now a devotee of Peter Drucker. Because Sanders decided that he didn't know anything about business, he was going to read Peter Drucker. So everything was about Peter Drucker in management style. So we had to deal with that, and here we were, and trying to sell stuff. We hired Steve Marks, who is the East Coast guy, he worked for Fairchild, worked for me at one time too. Put him out on the East Coast and Chuck Keogh who was the Midwestern guy, and that was it, the team of sales people.

Laws: So they reported to you?

Zelencik: No--

Laws: They all were reporting to Turney?

Zelencik: -- they all were reporting to Turney. And of course, the East Coast was mostly military, but the beginnings of, some of the stuff up in Boston - computer guys there. But still, the big business there was military. The computer guys [here] were Scientific Data Systems and Burroughs and then of course there was a lot of military computer oriented stuff. Marks fit into the East Coast thing pretty well. It took a while for our first orders. e were getting orders from small companies, Interstate Electronics made controllers for crossing, railroad crossings. <laughs> You know, I mean, this was our business.

Laws: At this time, AMD's strategy was to second source Fairchild products?

Zelencik: Second source Fairchild--

Laws: So AMD knew the products well.

Zelencik: That's how we knew the products; second source Fairchild products, try to make them better, try to make them faster. And once in a while Fairchild would make a mistake, something didn't work. But we were selling onesies and twosies right? <laughs> It wasn't like we had a basket of stuff. And of course, TTL was the stuff, 9300, and Linear. Linear was a big deal. Jim Giles was our Linear guy and I remember there were some crazy Linear guys around then. National had the tops on a lot of that, but Fairchild did too, and there was some hot Linear products that the military were using and so we second sourced some of those and we did pretty well with that. But it was a grunt, because you didn't have a [complete] package. You had one or two or three things so you were always looking for some way to edge into somehow. What do you do? We kept making product, Sanders he was brilliant, right? He just come up with some other way to attack the market, and we would just fight away at this thing. There are so many stories about, he'd never make plastic and we were not going to make MOS. and It was just grunting away. In the meantime, Intel was on a roll, right? They were DRAMs and microprocessors and here we were looking at all this stuff trying to figure out what the heck we were going to do. Fairchild was in its demise, National was kind of lost, Charlie was a pretty good guy, but you know, National was doing okay but they had seemingly lost their way. The industry was Texas Instruments, a little Motorola, a little bit of Fairchild, AMD and then all these other startups that were out there, right? I remember there was a book put out in 1970 that said the least likely to succeed was AMD.

Laws: AMD, right.

Zelencik: And who was most likely to succeed? Was it Cermatek or one of those guys?

Laws: I don't remember.

Zelencik: I do remember it was out there, it was a ranking of all the startups, and AMD was in the bottom of the pile. And I think it was Cermatek or something like that was at the top. And there were all these startups, they changed the landscape. Who changed the [landscape] most? Probably Intel, right? There's no question about that. And then, you know, other people started to change it with programmable logic and ASICs and of course, we played into all of that stuff.

Laws: Was [the] sales [organization] involved in choosing new products Steve?

Zelencik: Well, Sanders' position was, to make what the customer wanted. Well, okay, then you try to make what you could make, you know, <laughs> and then you tried to make anything, you know.

<laughs> And so they were our three sorts. So you would find out what the customer wanted, you'd-- and it was generally still a second source; you tried to make it slightly better or different, and this was Military 883 standard, try to make it better, or, you know, just SWAT-- sell what's available today--

Laws: Sell what's available today, right!

Zelencik: And that's when you couldn't make anything at all except the stuff that nobody wanted, and that's what you had to sell. And the way I ran the sales organization. I always said, if you don't know your customer, he doesn't know you. And so you know, we didn't sell just try to sell the product we had. I made these guys really get involved with the customers. Because I said, our only hope is for the customers to love and understand us, and want to do business with us, because we were really a ragtag bunch. In the beginning, I remember bringing people in, and Gifford was always the puffy-chested grouse in the whole organization. And we had a bunch of NCR guys come in. They were looking for alternate sources. Art Hollings -- who was kind of a tough sales guy - was talking to Gifford, and Gifford said to this guy, "You know, we're small, but we're humble." And Hollings said, "You got a lot to be humble about." <laughs> And so that was that. We were small, we were humble, but my whole treatment of the sales people was, "Get to know these guys. Get with these guys."

Laws: When you went looking for sales people, what did you look for in a person to come work for you?

Zelencik: Personalities. Engineers was the first thing.

Laws: You had to be a good engineer.

Zelencik: Yeah, but they had to have personality, too. I can remember when I got this big order at Fairchild, and I thought I was going to be the Salesman of the Year. And you know, I was then kind of a hot shot in the company. And off at the sales conference, they named some guy from the East Coast that got a couple orders from Raytheon, the Salesman of the Year, and he stood up there and he said, "Well this goes to show you, you don't have to be a hot shot to be a Salesman of the Year." And I thought to myself, I'm never going to hire a guy like that. <laughs> You know? Because it was all political, it had nothing to do with me. It had to do with the political stuff and something on the East Coast. And so I always said, engineer always. But personality had to be in there. And these guys had to really be able to endear themselves to people. It was always a people business. Sanders would always say "People first. Products and profits will follow." And so to me it was always my people, and I ascribe to that.

Laws: How did you motivate them? Was it money?

Zelencik: Everything. Everything. How do you motivate them? Well, cars, money; remember, my sales guys driving Mercedes, right?

Laws: That's right

Zelencik: That's right.

Laws: Unless you're in Texas [where you get a Cadillac]

Zelencik: If you go to work for me, the first thing you do is get rid of that Ford, and let's go down and look at a Mercedes. Once in a while they had BMWs, but no mini vans <laughs> and no pickup trucks, you know. Cadillacs were okay, but no Plymouths or Chevys. No, no, we didn't do that. And also, Jerry always considered the fact that he liked a good remuneration, Jerry liked money. So he liked money coming in. So Jerry always made sure money was coming in for performance. Always for performance. But it was easy to motivate people with bonuses and that, because Jerry liked that. And he put that in play all the time. He'd have all kinds of programs to motivate sales guys. So how do we motivate sales guys? I look for people with personalities first. Then I look for people that are really ambitious-- they want to succeed, you know. It wasn't just being an engineer. And then we spiffed them. We gave them car programs. You know we-- they had good bonuses when they performed. We had these grand sales conferences which to this day are never to be replicated. And there was a lot of camaraderie. The one thing I think that people will tell you that worked for AMD is that it was the best place they ever worked.

Laws: Yes.

Zelencik: No matter where people went from there, no matter-- it was the best place they ever worked. And that's true. You know, -- Rick Marz left, he went to work for Wilf Corrigan. Corrigan tried to hire me, by the way, when I was in AMD, and I darn near went to work for him. I like Corrigan; a lot of people couldn't get along with him, but he and I were really good friends, and his wife and Harriet were good friends. And I really liked him a lot. And he wanted me to go to work for him because his sales guy I'm thinking of his name now, He was the West Point guy. What was his name? Geez, I got a blank right now. So anyhow, he was the-- these guys all made a lot of money, because Valentine was the money behind Corrigan, of course, he was also the money behind Cisco , and these guys all got a piece of that action out of Valentine.

Laws: Bill O'Meara?

Zelencik: Bill O'Meara, that's right. Now O'Meara wound up on the board of Cisco, so he punched a pretty good ticket there. So anyhow, Bill O'Meara was leaving, and Corrigan really wanted me to come in.

And I got very close to it, and I probably should have gone, I'll tell you the truth, because they did very well over there. Not that I didn't do well at AMD, but they did very well over there. I didn't go, and so Marz went. Marz never got along with Corrigan the way I did, by the way. They didn't have the camaraderie at LSI at all. And Corrigan told Marz the first day he went in there, and Marz would tell you this-- he said, "Listen,

this is not AMD. We're not all buddies here. You come to work here, you work here. You don't have to be friends here." <laughs> Something like that. And Marz saw a different culture.

Laws: Different culture.

Zelencik: A really different culture. But the one thing about AMD was the culture. Everybody that I know that ever worked at AMD said it was the best place they ever worked in their lives. I don't know if you're going to say that--

Laws: Absolutely.

Zelencik: There was nothing else like it. You know, hard times, good times, party times, grunt times. It was a team. And not too many people got fired from there. There were some layoffs and that , and once in a while we let people go when they thought they had something better to do, but we fought hard for the good people. We never let those out the door. And Sanders fought hard to keep me. He went out of his way to make sure I didn't go to work for Corrigan. Of course, he and Corrigan were buddies, but losing me to Corrigan would have been a big blow.

Laws: Distributors played a big role in AMD. Can you tell us a bit about how you established those relationships and why they were important?

Zelencik: Yeah. Distributors played a big role. In L.A. it was Hamilton Electronics. You had Avnet on the East Coast, you had other people on the East Coast. But Avnet was a personality-run distributor, much like AMD was. And Tony Hamilton was-- as big as life, just like Jerry Sanders. And they ran that company with a lot of big personalities. And that's the way AMD was. So we got involved when AMD needed distribution. And of course, we know all these guys from the Fairchild days. Fairchild didn't want AMD to have any distribution but my relationship with the distributors was very good and with the Hamilton team especially it was very good. They played into the same kind of big personalities, let's be your friends, let's have a good time thing. Fairchild was doing everything to block us, everywhere. Any distributor that was out there, -- But Tony Hamilton bit the bullet, and he cut a deal. He set us up with Avnet as the distributor. So even though it was Hamilton-Avnet-- Tony cut a deal so Avnet became our distributor which gave us an in into the whole network. And they did play a huge deal. At that time distribution was big in the network. Of course, they made a lot of money too, doing that., Back in those days mobile phones weren't

there, and computers weren't there, and faxes weren't there, and documentation was all on paper, and carbon paper, and copy machines. Xerox finally came out with big Xeroxes, and you know and that was a big deal to have a copy machine, and the record keeping was ad hoc. And the distributors' record keeping was intentionally <laughs> confusing. And of course, everything was on file cards. And their whole inventory was on this file card. And so the distributors would sell something, they'd go to the file cabinet, file card, pull it out, and it would say, AMD, 9300 ceramic package, and they'd see 50 pieces in stock. And he says, well we sold 10 of them. So he'd cross out the 50 and he'd put 40, and then that was it. And that was the record keeping of the inventory. Once in a while we'd pull an audit and we'd find out there were more than 50 pieces in stock. Did they sell 10 pieces? Well, yeah, you had to rely on these people, and of course, if you didn't have a relationship with them, you know, God knows what went on.And what moved where, because products could just disappear. It was just hand accounting on all of that stuff. And hand inventory. But, good relationships prevented that kind of monkey motion from going on. Once in a while you'd have to pull an audit and you'd catch them and so-- and then they'd come to Jesus again and then away we go. But, distribution did a lot of the financing for a lot of the startups. They did a lot of providing to military customers who bought in small quantities a lot of times, because the production orders were all relatively small, high tech stuff. And they provided a buffered interface-- I had a lot of sales people in their organization that we couldn't afford to have. I don't know that distribution is the same anymore; I see Arrow is based in Denver but they're all software based. -- I guess then don't even carry inventory-- people tell me they don't even carry inventory any more.

Laws: I have no idea.

Zelencik: I think if you check on it, they don't carry much more than 30 days worth of anybody's inventory.

Laws: So they just take a commission on--

Zelencik: They just sell right through. You know, they're finance people. But back then carrying inventory was very important. Because the factory didn't have it, and if you had an inventory of something that nobody else had, you were king-- King Kong.

Laws: But product started getting much more complex when microprocessors came in. At what point did you start to need applications engineers, and how did you go about that?

Zelencik: I think we had application engineers all the time.

Laws: Really.

Zelencik: I think from Fairchild. I remember there was always somebody, you know, that knew something more than the field guy knew, and they were writing the data sheets, right? You know.

Laws: Sure.

Zelencik: There were all these guys writing data sheets and they were all technical people, and the technical support was very good-- I don't remember ever that we didn't have good technical support in AMD.The field application engineers grew, where the guys were based in the field and they became part of the team. And even with the field application engineers and my position was, -- they had to be people that could talk to people. We left the real hard engineers back at the factory. My field application engineers were as good as my sales guys in many respects. They were more engineers, hard core, but I let them drive fast cars and go to parties too. <laughs> And so it was important to have that relationship between the field applications guys and the sales people, and the customer. And that brought a lot, as we got more complicated, the field applications people were there on target in place, and very contributive to the things we were doing.

Laws: They reported in to the area sales managers?

Zelencik: They reported in, but yeah, it depends. There were times when we had a field applications manager in the factory that they reported into. Sometimes they reported into the area sales manager. It depended on what the flavor of the day was. And of course, you know, you get guys like KC Murphy,they had their whole organization reporting into them, and they became their own entity in their own right. There was a time later on when the field applications organization worked with the sales organization, and they were responsible to the area, but they had a reporting chain up into the factory. That was to keep them clean, you know, make sure they didn't get corrupted by the sales guys. And they had their own tribe. One of the books that I didn't give you, which I should give you, is-- I handed you the book on marketing warfare, which I think is cool. Peg Neuhauser we used at a sales conference a couple times, and she wrote "Tribal Warfare." And she would talk about the applications engineering tribe or the manufacturing tribe, or the management tribe, or the sales tribe. And each tribe had their own beliefs and religion that was part of the total, but independent, in its own sacred bundle. And in that sacred bundle, were things that only the sales guys or only the engineering people could look at and have. And there was a lot to this. There was always conflict between the factory engineers and the field sales engineers, and the sales guys and the manufacturing guys, and general management, right? The finance guys. They were the real problem. The finance guys always wanted the truth, and <laughs> we always would say, "What's that got to do with what we're doing?" You know, and I didn't mean anything in a crooked way, but they couldn't live with anything that didn't square up. And of course, nothing ever squared up in the real life, right? That's the way it was.

Laws: International. How did you approach international sales?

Zelencik: International. That was an interesting thing. Europe, you've got the Far East.

Laws: Worlds apart, literally, and culturally.

Zelencik: So what happened? Well, so about 19-- let's see, I started in '70, so in 1976, they took me out of field sales. I moved to the Bay Area. I became the National Distributor Manager. -- I was reporting up into Terry Jones at that time.

Laws: This is at Fairchild? No, Terry Jones was also at AMD.

Zelencik: Terry Jones at AMD. So I'm AMD, Southern California, my West Coast is booming. I mean by this time we were on a roll. In Southern California-- but I was really running the whole West Coast. And Terry Jones they had hired him from Fairchild, he was running all sales. And we hired Russ Almand as my first hire besides me in the sales organization, and then we had Bob Chamberlain out of Fairchild; Almand came out of National, and he became the area sales manager for Southern California and Chamberlain here, and they gave me all the distribution. Why'd they do that? Because I had relationships, you know. I was the one guy that always seemed to be able to establish a good relationship, going back to the beginning when the guy told me, he said, I realized it didn't matter that he didn't know much, it mattered who he knew, you know. And so we always focused on that. It was important to know your product and that, but I always knew that, you know, fall back was that these guys weren't going to cut your order first. That's the way we wanted it. So they moved me here to become Distributor Sales Manager. So I ran all the distribution out of here, and I did that till1976, maybe Terry Jones gets fired for something about '78 or let's see, '80 something, Terry Jones has to leave the company. And I won't go into any of that detail, but he has to leave the company. And there was a little contest between who was going to take over. And it was either me or Steve Marks Well, I liked Steve Marks a lot, but Steve Marks was crazy. Literally.

Laws: One of the most intense people--

Zelencik: Yeah, he was very intense. He was-- <laughs> very intense. And so I knew that if Steve Marks took over, I would just leave. But Marks was erratic enough that that he dropped himself before it ever having become much of a contest, he dropped himself out of this thing. Because-he didn't want to move to the West Coast. And his wife didn't want to move to the West Coast, and so before anything ever happened, I got this thing; not necessarily by default, but because the other contestant just stopped wanting to be a contestant. So that was okay with me, that was fine and dandy, and then I took over all the field sales. And sometime in there, Turney had left, right?

Laws: Turney left several years before that?

Zelencik: Yeah. In fact, Turney and I had a falling out because he went over to Electronic Arrays, Don Bell was there then, and he wanted me to leave and I was going to leave because I thought, what the heck, why not-- and I stepped back a bit and I said, this is nuts, you know-- you know, first of all, Turney used to fight with Jerry all the time. And it was always about compensation. Can I divert a bit and talk about Jerry a little bit?

Laws: Sure..

Zelencik: You know, Jerry's an interesting guy. He was an engineer; he only wanted sales guys to be engineers. But he always assumed that he was the best sales guy in the company. So-- that wasn't his weak spot. His weak spot was engineering and manufacturing. So you know, those were the guys that he compensated, besides himself, more. And of course, Turney, who was really not even an engineer, but out of the Naval electronics school, and you know, a hardnosed negotiator, who when he went to AMD, when they formed the company, became the purchasing guy and did all the negotiations for facilities and Turney was the sales manager, you know, and I was working for Turney, and Sanders was always giving John Carey and the likes more money and more stock; and Turney was always fighting with him. And that's what finally broke the whole thing down. Turney assumed that he was just getting screwed, that he should be equal with all these other guys. Well, you know, he wasn't getting screwed.But he just walked out of AMD -- leaving so much on the table, he never recovered from that. But he was always mad at Sanders because Sanders would take care of his weak points first, you know. He knew what he knew, and he knew what he didn't know. So he'd always compensate the engineers more heavily in stock and stuff like that, so Turney, you know, bailed out. I'll tell you another story, I forgot about this one. Somewhere in the scheme of things, Jack Gifford decides he's going to take over. Now remember, when AMD was founded, Gifford is the real guy that starts the company, right? Remember, he splits out of Fairchild, and Sanders is fired, and Gifford puts together these Linear guys, they're going to start a Linear company. But nobody will touch Gifford with money because Gifford has a personality like a rattlesnake, right? <laughs> So Gifford had to find somebody, and Sanders was fooling around with some of the digital guys, brought that thing together; and of course, Sanders was the right kind of guy to raise money. So Gifford kind of got kicked back out of it, but that was okay, they were all the founders. Two or three years later-- Gifford decides he's going to get Sanders out of there. And remember Gifford had money - a pear farm and a peach farm and a bunch of other stuff. So Gifford decides he's going to get Sanders out of there. <laughs> So he comes to see me one day, this was in L.A., he says, "I'm taking Jerry out. And I want you to know this." I said, "Really?" He said, "Yeah, you know, you don't like Jerry--" I went wow, so I said, "Okay, Jack, I think you're making a big mistake." So I got hold of Jerry. I said, "Jerry, Gifford's going for your throat." And I said, "You know, the truth of the matter is, he's not the right guy to run this company. YoNot at all." Well of course, he started Maxim Integrated, and he made a fortune, right? But -- the people that worked for him never liked working for him, but it didn't matter, they all made money, so that's another story. So I said to Jerry, "You got a problem with Gifford." So he and Gifford had a little talk, and that was the end of Gifford. That was a sidebar there. So that's how Gifford happened to leave the company. But Gifford really was going to take out Jerry at the time, and it wasn't too cool. Where were we?

Laws: Turney?

Zelencik: So, Turney's gone, Terry Jones gets fired, let go, released, whatever. They gave me the job. So there I am, I'm running the whole sales organization, international included. And I get everything. I go to Europe my first time, it's 1980, Norm Miller was running Europe for us.

Laws: That's right.

Zelencik: <laughs> Norm Miller was a piece of work in his own right, had a Twin Beechcraft parked over in France somewhere, flying it-- you know, you don't fly airplanes around like that on company time-- and he was flying to see all the customers with his Twin Beech, right? I got my first tour of Ferrari factory in 1980 with Norm Miller, where they were pushing those cars out on wooden carriages, you know building Ferraris, unbelievable. Here I was in Europe, in Asia, all this stuff was coming in to me, and it was a lot of stuff. Well it also involved dealing with personalities and people, and people I knew but they didn't work for me, and all of a sudden they were working for me, and this meant, changing a lot of things. Putting a lot of people in place to make this thing look more like the kind of relationships that I thought were necessary to do business. And so we kind of remade the whole scheme of things. Europe was interesting, right? There was-- lot of business there until there wasn't. Because things changed rapidly., The-- PC business was interesting. About the time I took over IBM was in the throes of the PC, and it was changing the market in Europe and of course there were all these screwdriver shops making PCs with motherboards that came from Asia, and Olivetti was the big customer. We had the telephone guys, of course we were in the telephone business, Everybody forgets that we were in the SLICs and SLACs, <laughs>

Laws: At Siemens and Erickson.

Zelencik: That's right. And we had big business with the telephone companies, Siemens and Erickson we were big suppliers there and-- British Telecom -- and Olivetti which was hugely important to us. And everything was there. But then the bias started to go Asia, right? And that's where it really was-- it worked well for me. Because as the bias shifted towards Asia, where the motherboards became important my relationships with these guys were important because the people we had now put in place, even in Japan, were more of the gotta know your customer well. Things really flourished for us there. And of course, -- nobody talks about this-- I'm bouncing around a little bit.

Laws: That's fine.

Zelencik: You remember the Crawford patent--

Laws: Yes.

Zelencik: Okay. The Crawford patent was a big deal, because that-- the guy named Crawford patented how the processor would interface with the memory. And it was a 1993 patent or something like that. Big patent. And Intel put the squeeze on everybody and said, you can't use anybody else's processor because it's in violation of the Crawford patent. If you build a computer with this and the motherboard use that other processor, you're in violation of the Crawford patent. And Intel really got nasty. Asia was a big deal for us. The motherboard business was big, and of course, when the guys build motherboards, they bought microprocessors. And when they bought microprocessors, they had to buy them from Intel or AMD. o Intel went to Taiwanese manufacturers and they said "You have to sign a cross license with us, or you're in violation of this patent. And number one, you'll never see an Intel processor again, we're going to shut you down." And there was real tough stuff going on. And so Sanders said , "Go fix this." I said, "Well sure, I'll go fix it." Well I had a good relationship with some of the right people there. And then Lovegren and I and a couple other lawyers went over there and-- we started to talk to our customers, and said, "You can't sign this. Because if you sign it, you're out of business, because Intel doesn't have to sell you processors; you have no other choice, they're going to shut down the whole industry." And we started that thing going. And we met with government people in Taiwan. We met with the Minister of Industry, couple of other legal guys, and we convinced them that they weren't going to sign any of these agreements, nor anybody in Taiwan's going to sign the agreement. One person at one company that went with Intel. They were going to make an international incident out of this. And so they told Intel, sorry, we're not going to sign this, and we're taking it to the International Court, because this is blackmail And Intel backed off. They walked from it. To this day, there are people in Taiwan who will tell you that I saved their industry. That's true because nobody else was going to go against these guys. And I did, with a couple of our lawyers, and a couple of our other guys, and we mustered the team. People you know, I won't mention their names here, that are Taiwanese, will say, "You saved the business. You saved the whole tech industry in Taiwan."

Laws: That's right.

Zelencik: Because otherwise Intel would have shut them down. So anyway, that was the deal. So you know, we had a hell of a run in Asia because of that.

Laws: Was this before or after the 386 came along?

Zelencik: This was right about in the middle of that stuff--

Laws: In the middle of that, okay. Did that affect sales very much?

Zelencik: Oh yeah, sure.I If we hadn't stopped that thing. It would have been no sales, you know. But also, we saved the entire industry there. And of course, you know, you go into Asia-- -- I have great stories about some of that stuff-- you want me to just keep flipping around?

Laws: Keep going.

Zelencik: You remember 29000?

Laws: Yep. 29000.

Zelencik: You remember the billboards on the freeway? When it would say, "Your next platform." Jerry Sanders decided that a 29000 was going to take out the X86. It was the next platform. Big billboard said it. On the 101, right here, read it, right? "29000, Your next platform." Well, what was the problem? Well, DOS operating code.

Laws: Legacy software.

Zelencik: How were you going to port the operating software to the 29000. "What do you mean? You need a compiler," Sanders says to me. "We have a compiler." John Hennessey, you know, MIPS, he's the number one compiler guy in the world." "He says, "Go see Hennessey. And make a deal, have him put together a compiler, so we can compile the Microsoft code to the 29000." And so I go to see Hennessey, and he says, "Are you nuts?" Now this was before he was President of Stanford, of course. He said, "Are you nuts? You can't do it, but I wouldn't do it if I could." <laughs> So I had to come back and tell Sanders, "You know, sorry about that. But it can't be done." Well, that was the end of that one. But, Sony at the same time decided the 29000 was the perfect solution for their needs for higher end computing, and especially workstations. So they say to Sanders-- and I was in the meeting, "Jerry, we want a cross license for the 29000. We want to be able to build it ourselves. Going to put it in a lot of Sony equipment. And for that, we'll make sure you have all of our PC business." Sanders says, "Are you kidding me? A cross license on the company jewels? No way am I going to do that." True story. <laughs> No way am I going to do that. Another divergence here. There is a guy name Enrico Piol. at Olivetti. He was one or two or three top at Olivetti. And he says, "Jerry, I want to talk to you about something." I'm there with Jerry. We're in Italy and we're in some fine restaurant. Peal's smoking big cigars. He says, "I have this processor we have the rights to and I can do anything I want to with it. It's called ARM." He said, "I want you to build this." He said, "I'll give you full rights to it, exclusive rights besides us to build this. I want you to build this for me, and for that, I'll guarantee that Olivetti will use only AMD products." Sanders says "Are you kidding me? Why would we build that thing?" True story.

Laws: A lost opportunity.

Zelencik: Well, but that was back when it wasn't.

Laws: Oh, sure.

Zelencik: The ARM was an "advanced risk machine" but it was nothing not then, and, of course, I can understand why he said no. Because it was like he didn't want to divert himself from the...

Laws: Right, AMD had already been through a whole succession [of architectures].

Zelencik: Yeah, yeah, yeah, of course.

Laws: Different diversions along the way.

Zelencik: Of course, you know that wasn't the first time we got offered the ARM. The second time was by Mr. Palmer when he was at Digital and Digital had the Strong ARM. And Bob says, "Hey, Jerry. Got something for you. Won't you build the Strong ARM?" And Jerry says, "I can't do that Bob. It's going to screw up the whole..." So he turned it down twice. At least twice that I know of, and both of the times it seemed like...

Laws: Just another...

Zelencik: Another product, yeah. Except today we would've had control over the whole thing i\t came out of England, I guess....

Laws: Yes, Acorn Computer.

Zelencik: Yeah, yeah. Acorn Computer but somehow Olivetti got control over it.

Laws: Olivetti was an investor in Acorn.

Zelencik: There you go. And Piol was very closely tied in with that thing, and he was prepared to give it to us. So these are little-known stories that people have never heard about. Just like when we decided to get out of the SRAM business and Sony was our biggest customer. And Sanders says to me, "You go over there and tell them we're not going to make SRAM anymore." I said, "What are you telling me?" He says, "Well, we can't make them. There's no money in it anymore." Okay, so I had to go over and tell them we're out of the SRAM business. But the thing about all of this was you could tell these people that

stuff and get away with it because you still had a good personal relationship. They didn't like it but they didn't throw you out the door. So Asia was big. Taiwan was huge. Korea was big time, For Korea we even had the 64-bit DRAM. Remember? Not 64K, 64-bit. And L.G., which stood for Lucky Goldstar, started in business making toothpaste for the G.I.s in the Korean War. Did you know that?

Laws: I did not know that.

Zelencik: So Lucky Goldstar now becomes a pseudo electronics company. And they start making phones, meaning they had plastic molding, big bins up there with colored plastic. And they'd mold these things. They were making handsets with push button and they had other big lines making cathode ray tube TVs. And they were making these in factories with dirt floors in Korea. I mean, in just a hell hole. It was dirty. These TVs are going down the line and they were hand soldering everything. . Putting these things together, people were assembling these things. And they get down to the end of the line. They turn it on and they hit it with a rubber mallet five times, bam, bam, bam, bam. And, if it kept working...

Laws: The shock test?

Zelencik: But that takes me back to a story way before your time when there was a thing called Muntz TV. You don't remember Muntz TV?

Laws: I don't remember Muntz TV.

Zelencik: This is in Chicago when Zenith and Motorola were the big guys. And this guy who made Muntz Cars by the way, "Madman Muntz", and he made Muntz sports cars too. And Madman Muntz started a TV business. He'd buy a Motorola TV and he'd start to cut out components till it stopped working. They'd put the last one [component] back and he'd cut the price and make them that way. They were marginal at best but they were cheap. Anyhow back to Lucky Goldstar. So we got to be partners with Lucky Goldstar and do business with them. They were one of the electronics companies that the Korean government was backing along with Samsung. But Goldstar decided they were going to get in the semiconductor business and they needed products. So they bought the 64 bit RAM from us as one of the things to fabricate. They could never make it work. They paid us a goodly sum but the thing didn't work. So that was an ill-timed venture for them because the Korean government then stepped in and said, "Goldstar, you're out of the semiconductor business. Samsung, you're our semiconductor guys. Goldstar, you can make TVs. You can make washing machines. You can make whatever else you're going to make. But they moved all the semiconductor stuff to Samsung. So that was all part of that transition at that time, kind of an interesting thing. Then a guy named June Min was...

Laws: June Min, yes I remember him.

Zelencik: Well, June Min got his degree from Perdue. So we happened to have a little something in common together. So and June Min was the vice president. He was the head technology guy at Goldstar. But that's how it came apart. The DRAM was their downfall. In the meantime, June Min and I did a couple of other things together but it never worked out very well but that's okay. And I don't know where he's at now. I think he moved to India. He was going to start a semiconductor company over there. So where are we at here?

Laws: We've covered a lot of ground. So you stayed at AMD until...

Zelencik: Forever. Until they threw me out of there.

Laws: Around 2000 I think you were thinking of retiring. Is that right?

Zelencik: Yeah, i2000 because I was 65. By the time I went to work, I was three years out of phase with everybody else that was my contemporary. So I was 65 a little earlier in the game. Turney was the only guy older than me, I think. Sanders is a year and a half younger than me and some of the other guys at Fairchild, we were all about the same age. But in AMD, other than Leo Dwork I was one of the oldest guys. So, yeah, 65 in 2000. And Sanders said to me and to Ben {Anixter], we were about the same age, he said, "I want you guys to stay around at least for a while." By that time, Rob Herb had taken over Sales and Marketing -- because I had started phasing out in about, oh, '98/'99, somewhere there and Herb took it all over. And that was good. I was just hanging around and I was going to get out of there in 2000, which would've been a great time to leave by the way. Maybe not the best time for me but a great time from a financial standpoint. So Sanders says, "Stick around," so I stuck around and then with the market collapse in 2001 and '02, I thought, "Oh, man. This was a dumb decision." But then it came back enough. Then Hector [Ruiz] came in.

Laws: And that's a whole other story.

Zelencik: Right. Jerry fell in love with Hector when we were dealing with Motorola on some manufacturing licenses and some products. And he fell in love with Hector who had a PhD and he was a Mexican kid and all that. So Jerry decided Hector was going to be the next guy in. Hector and I had a pretty good relationship but Hector came in and Jerry was kind of moving away.

Laws: So Hector came in as a CEO or COO?

Zelencik: Yeah, I remember he came in as a COO. But he was going to be the CEO and then he was guaranteed to be the chairman of the board. But then, of course, Jerry changed his mind on that a little bit. Didn't like the thought of him being of him being the chairman of the board and that got to be a push

and shove. But the board had no choice, and that's when Jerry resigned because he wasn't going to sit back and be chairman emeritus or anything like that. So that all happened but it became a controversial thing. I'm not commenting on Hector. He did what he did. The company lost its bearings, but I don't think the company could've ever had its bearings after Sanders. The truth of the matter is it was Sanders company and nobody else could run it. No matter who was in charge, there was no chance because they didn't have the wherewithal to keep everything together. So Hector came in and he was taking over—., Let's go back to the NexGen guys. You remember that story, right?

Laws: Yes.

Zelencik: What do you remember about it?

Laws: NexGen was acquired for the K6 processor

Zelencik: Right, for $700 million. And —Diverting here. [On the topic of who else could have run the company] Marshal Cox was deeply involved with Next Gen, who's in deep trouble themselves, except they have a great processer, but it requires a whole different motherboard, which is in its own right a problem. The K5 is a disaster and Marshal Cox takes me out to lunch and he says, "You got to meet with these guys." And I meet with Atiq and Vin Dham and I get John Bourgoin involved and we say, "Holy shit. These guys know something we don't know." And so we buy them and in comes Vin and Atiq. Atig is a natural to back up Jerry. He's a really brilliant guy, thinker and intense. And he comes in and I say, "Wow, here's a guy that's a understudy for Jerry," because he's really a articulate guy, and Vin Dham is this flamboyant guy from Intel. And two days after their stock vests in AMD they clear out. They're boom! They weren't going to stick around forever. They cleared out of the place. Nothing stopped them from doing that. And, of course, Vin had only been at NexGen for six months from Intel before he got the big cash out. And so those guys were gone. And so, so much for Atiq Raza who I felt was a natural to run the company. So Jerry let Hector come in but he really didn't want to give up the chairmanship. And he just didn't think that Hector was going to do the kind of job that he could do. Well, the truth of the matter was the truth. Nobody could've done what Jerry did. I mean, there was just nobody who was able to run that company like Jerry. So Jerry had his falling out with the board and all that and then Hector took over. But it was never the same. The Motorola mentality, the Motorola finance guy that just didn't understand. He still thought they were selling car radios. So and the whole thing just never worked. But then, of course, the Motorola people at Fairchild, when they went there, didn't really work either. So there was a disconnect in the way Motorola was managed.

Laws: Cultural differences?

Zelencik: Yeah, big difference. The Chicago management style versus the west coast. And you could say, that although they'd been making semiconductors all their life they had a different management style

and it all came out of the Midwestern steel mill brain set. Whatever. So that thing all came apart. Well, I got out of there with my teeth and a few bucks in the bank and that was it. But for Jerry, there was an acrimonious departure.

Laws: For Jerry?

Zelencik: Because he just didn't want to go and the board said, "You got to go. You made a deal," and that was it.

Laws: So you left in 2003?

Zelencik: Yeah.

Laws: And when did Jerry leave?

Zelencik: After that, 2004, something like that. And then a lot of people peeled out of there then. Rob Herb left right after me. Couple other guys went. But really Hector just—neither him or the finance guy, Bob Rivera. They never got it. They never got the mentality. They weren't the Fairchild type. They weren't the National type. They weren't the semiconductor type, even though they came from a semiconductor bunch. Their management style was Midwestern. Never worked. So anyhow, I was probably lucky to get out when I did. The market was up. I sold all my stock, most of it, and then just retired.

Laws: What did you do next?

Zelencik: Nothing. Nothing. I was worried. I thought, "Jeez, I'm 68 years old. I'm a baby. What am I going to do?" And I said, "I'm going to be in a consulting business." So I still have a card. I never showed it to you. It said, "Be, Z Ventures. Ideas that work." And I said, "I'll be a consultant. Everybody wants to be a consultant when they retire. And then I'll sit on boards." Well, sitting on boards, I talked to these guys and everybody wanted me on their board. But I always remember Turney told me one time a bad story about being on boards and how even when you have D&O insurance, you can still lose everything you had because somebody sued you. And I said, "I don't see any net benefit of being on the board," and being a consultant is hard work because most of the time you get losers. By the time you get through trying to save a loser, they're done and you get paid a little money and then you got to go to court to get the rest of it because they can't pay you. And so, I just decided I was just going to have fun and hang around, and that's about the time when-- Cher Wang and we were -- it was 10 years ago now-- having lunch - and this was-- they were just starting the phone stuff then but it was VIA Technology and, of course, they had FIC (Taiwan-based First Intenational Computer). And we were drinking wine and she liked wine. And she said, "Do you think we can do a winery in China?," and I said, "Yeah, sure. I can do

anything." And, literally, it started 10 years ago with a discussion like that. And I did what I had to do and went to Davis, but they shined me on. So got the guys at Perdue to come around and we put together a team and went to China. Literally went to China on the ground and using satellites, doing soil mapping, doing climate mapping, doing location mapping. Picked the locations, 10 years later [we're] making the best wine in China, literally the best wine in China.

Laws: Is that right?

Zelencik: Yeah, it's not coming out of the country. It's gotten gold medals. Even the French have given us gold medals.

Laws: How much U.S. involvement was there?

Zelencik: Just me and a couple of consultants, and then we hired a bunch of people from the U.S. and from France and from Australia. We had bunch of teams that came in, but the U.S. involvement from our standpoint was just me and a guy named Jim Niven whose family was entrepreneurs that opened a bunch of grocery stores in California a while ago called Niven Markets and Purity Markets. And they sold those all and his father bought what is now Edna Valley, not the winery but the whole Edna Valley. They own the land, yeah. , They were in land when they were in the grocery store business. They owned all the land under the grocery stores and they were small stores. It was before the supermarkets were big and they had 300 of them between here and Santa Barbara, just all in the towns. So anyhow, he had Edna Valley. I got to know him very well. He was a wine guy. I wasn't a wine guy. So, between him and me, couple other wine guys and the consultants that he brought onboard, brought this team together. The Chinese contingent did all the negotiation for the land, and had an architect out of St. Louis design a building. We built this massive winery. It's four acres and a roof, a million case capacity. What the hell?

Laws: That's fascinating...

Zelencik: And that took 10 years. Yeah, now the wines we're making are really good. Yeah, we're making Riesling, Niven who is big on Rieslings, thinks is the best Riesling he ever drank in his life. We've got cross licenses with Geisenheim and stuff like that and it's really a big deal. Have we sold a lot? Not a lot. You don't want to go to market with garbage.. And the intent was to make the best wine in China. I mean, we wanted to make Screaming Eagle high-end. Of course, it's like semiconductors. You can make a few that sell for $10,000 or you get a lot of them that you sell for 50 bucks. Same bunch, same lot, just how they sort out, right. So we're making really good wines and, of course, were trying to set a marketplace for all of this stuff. Some of it's too old to be made into vinegar probably but that's the way it goes.

Laws: Are you still actively involved?

Zelencik: Yeah, yeah, yeah. Yeah, in fact, I was there about a month and a half ago. , It's just different, there's no west coast so there're not micro climates. So the first thing you have to know is that by the middle of October you're going to get snow and freeze. For sure, by the end of October, the parties over. So you better have everything off the vine. The vines are all hybrid. They're grafted so you have a root system that's very superior, and then you graft on the type of grape you'd like to see. And, of course, if they freeze, you will end up with the root that will produce whatever was its own vine. And the rest is gone. So what do you have to do? You have to bury the vines.

Laws: Wow.

Zelencik: Literally, in the wintertime, before it freezes. You cut a trench. By this time, you've harvested the grapes. You've cut back the vines. And you cut a trench and you lay the vine over in the trench covered with dirt and it goes through the whole winter that way. The spring comes, you pull it back up. A guy from Minnesota, one of our consultants, taught us a technique. And now we're using it, which is called the Mini-J. And the Mini-J says, instead of planting the vine this way [vertically] -- you plant it this way [bent over horizontally]. So, when you drop it the ground, you're not cracking the thing off all the time. So you plant them this way and you train it up. 'Course, after your harvest, this is where you cut.

Laws: Cut it, right.

Zelencik: And you put it back in the ground and you pull it back up and it grows up again. So we brought in Netafim from an Israeli irrigation firm, using all-dripping irrigation. The entire vineyards are set up for mechanical harvest if need be, because China-- the farming business, China's going through major changes. And from the individual four-acre type communes, farms, they're going to big farms and you don't have the available labor. It's going away and all the kids are going to school to be engineers, literally. So you set up for mechanical harvesting. We've got varietals over there that just grow best in China that are making just terrific wine. So we've got chardonnay types. We've got cabernet types. One of them is a Marselan, which is a cab hybrid, which makes just wonderful, wonderful red wine. High-end, very good stuff. Got unique labels, got land that's gorgeous, unbelievable. You wouldn't know where you were if I didn't tell you you were in China. I can show you pictures. You'd say, "Where were you at, in South Africa?

Laws: Fascinating story.

Zelencik: Great stuff, so that's what I started doing. So what else do I know that's worth telling you.

Laws: With all this history and background of being involved in entrepreneurial activities, what recommendations would you give to a young kid going into engineering today who perhaps wanted to be an entrepreneur?

Zelencik: Well, there's a lot of really smart guys that invent really good stuff and they find somebody to back them. But they never wind up being the president or chief operating officer because eventually they're just too much of an engineer. I think that what's interesting about the early days of the semiconductor industry is most of the guys that were technology guys were more than that. They were personalities. Noyce was a giant personality. Shockley was a personality -- these guys were in your face big personalities, as well as being technologists. Who was the big linear guy that was crazy?

Laws: Bob Widlar.

Zelencik: Bob Widlar. Bob Widlar was different kind of in your face guy, right? He was a true technician that hid out in the back room somewhere. But the early guys in our business, the leaders, were not just technologists. They were leaders. Bob Noyce, Charlie Sporck, these guys were industrialists. What do I say to a young guy that wants to be an engineer? "You better be a business man too, because otherwise you're going to sell your company. Somebody else is going to run it." But. as I said to you in the lobby, coders are a whole other world and the problem with coders is most of them don't understand why their code works. And it works because there's a piece of hardware that's pushing those ones and zeros around in there, and out comes the other end is something that's meaningful. But I'm still a hardware guy. I think you got to have hardware and people have to understand hardware. And, just because you can write good software that uses somebody else's hardware doesn't get you off the hook. And, unfortunately, most of these people that are writing software really have no idea of what their hardware means to them. They just buy it. And maybe what goes around comes around. We'll see. I don't know but right now it looks like the software guys are preeminent here. I'm not sure what that means. You know more about that than I do.

Laws: Not a lot.

Zelencik: Tell me what that means, Dave.

Laws: So, really, you say you need to be a lot more rounded than just an engineer.

Zelencik: I think you have to be rounded.

Laws: You need to know business. You need to understand relationships.

Zelencik: Yeah, I'm a big guy in relationships. You got to know your customer. You got to know your family. You have to know who the people are you're working with.

Laws: True.

Zelencik: You can be a better manager when you're a better person. And I'm not talking about politics. That's a whole different subject here but you have to just be involved. And kids today get-- well, the phones capture them. The games capture them. They lose their ability to socially interact, I think, a lot of them. And they get caught up in a true lack of knowledge. You can't even buy a newspaper anymore. Or the ones you buy, it's hard to get the real news out of them. So where do you go? You look for news on the internet and, even Google and Facebook are complaining because somebody's hacking their news stories. The stories that they print as news aren't true. So there's nothing that's true out there anymore. Now, I don't know. There used to be a time when you could read a newspaper and you might not agree with everything that was in there. But some of the stuff in there was really reported. So as you grow up in today's environment, how do you become an engineer. How do you expand your horizon? What do you know that's different? What you see on the internet, you can't trust that. The textbooks? Well, I guess that's hard stuff. You can trust that but that doesn't get you to be a social person again. I think there's a lot that's being lost in today's society with kids marching because they don't like the election. I'll tell you what. When I was going to school, you walked out of that classroom, you weren't coming back in. There was no such thing as marching because you didn't like the lunch menu. That was it. You were gone, you didn't like school, "Okay, kid, you're gone. See you later. You don't belong here anymore." And we've become a permissive society and I think young people don't want challenge anymore. They want everything to just be smooth and level. Everybody share together. And I don't think that's good for an entrepreneur. I think you have to be aggressive and be different.

Laws: Sure.

Zelencik: But you have to be smart and you have to know a lot more about things than just your textbook. And, I don't know that they do that anymore. And it's tough to get in school anymore. I mean, you have to be the top of the top of the top. What's wrong with a grunt that's sitting at the bottom of the pile? I mean, the Larry Ellisons and the Steve Jobs and these guys didn't come out of a high-end school with a great degree. Well, you know the story about Ellison. Did I tell you this story?

Laws: Specifically, no.

Zelencik: He was working for Charlie Steinberg. Charlie Steinberg was at Ampex and he's one of the guys who was instrumental in inventing the digital tape recorder. Video things.

Laws: Video tape.

Zelencik: So he was working at Ampex and Ellison was working at Ampex. And they had a program with the LAPD -- it was a database program and it was called, the acronym was ORACLE. It was optical

character recognition fingerprints, a database of that was going to go on the Ampex tape database, and LAPD cancelled the program. And Ellison was one of the database gurus over there. There weren't many around at that time and he said to Charlie, "Hey, Charlie," he said, "I'd like to take a couple of my buddies and start a program company. It's okay if we call it Oracle?" So he always thought that Oracle came from this old Farsi thing and, no, it was an acronym for optical capturing and fingerprints. So anyhow, where does this kind of stuff come from? He he didn't graduate from the University of Illinois. He went there. But it didn't make him any worse because he didn't get out of there. But he knew something. He did something that was different, and he had a vision. A friend of mine is trying to apply to university now. They have a standard application over the internet and it's a standardized form. You plug in stuff and you write an essay that's going to only be a page long, and that you plug in all this stuff. And that's your first cut to getting into college. They don't know who you are. They don't talk to you. They don't see you. It's a form letter. Whoa, this is serious stuff. And so, of course, they get their big cut and they get all these guys that got the high-end of the spectrum in school. And, wow, this is okay A lot of them wind up and they just suffer their lives, except that they get rich and go to the software guys. But how do you find the real talent, dig out the real talent, when you have a form that's so cold? And it's cold. I mean, scary cold and you can see one of these-- and I know you probably haven't looked at one but look at this. It's a standardized form and it's standardized questions. They want to know your demographic background and you get to check marks. Hispanic, not Hispanic, not Indian. You know what I mean? You check this stuff off and it just prints it all out and there you are.

Laws: Choosing by algorithm?

Zelencik: That's right. And, of course, you can talk about all these bright kids and all this other stuff but, once in a while, somebody that's kind of in the middle of the pack can do pretty well. And I'm worried about that, that the middle of the pack guys are going to all be forced to be coal miners again or something. I don't know.

Laws: Well, it certainly limits social mobility, which has become a serious problem in this country.

Zelencik: Yes, that's right. Yeah, yeah. Oh, yeah, sure. It does, doesn't it? Now you got the power on the coast and you got to bunch of people in the middle that don't know where they're going anymore. . I still favor the Midwestern colleges. I like those guys because that's more like where you came out of.

Laws: Down to earth, pragmatic.

Zelencik: Down to earth and pragmatic. And not too many guys walk out of the school over there. They don't have the money to cut classes. They need the education. But it's interesting. I don't know. What do you say to young guys? First of all, go to the schools you can graduate from. You listen to people now and they go, "Wow, I'm going to Harvard. I'm going to Yale. I'm going..." Next thing you know, I'm saying,

"How's your son doing?" "Well, he's back at the junior college." I said, "What happened?" "Well, it was a little tough there." So I said, "Why do you start at a place that's just not your style?" Because it's got the credentials. Because you don't need those credentials to be successful. What you need to be successful is your own smarts and your own entrepreneurial effort and guts and hard work. If going to be a lawyer and you got to Yale, maybe that's good. But then again, you and I know lawyers that didn't go to school there that made a lot of money. I think a couple of them are around Silicon Valley. Not because of where they went to school but because they were smart enough to pick up on a good thing at the right time. And so I say go to school where you think you can graduate. If you can't graduate, what's the point? Go to the school where you flunk out? Their parents have got the same problem. They want to send these kids to all these high-end schools and then, the next thing you know, they're back at the junior college trying to recover to get into any school. And I said, —"It's not necessarily the school you go to that's going to yield the best results for your career or your lifetime."

Laws: Very different from going to Perdue because it was 'round the corner.

Zelencik: It was around the corner.

Laws: It was your right because you lived in the state.

Zelencik: I lived in the state of Indiana. It was 100 bucks a semester for tuition. And I had a '47 Plymouth and I drove five miles from my house.

Laws: Well, you've come a long way, Steve.

Zelencik: Well, only because I got a degree in electrical engineering. Now, would I be a great engineer? Probably not. -- I soon lost patience for just shoving a slide rule. Thermodynamics killed me. I didn't like that at all. But I really liked being able to interface the technology along with the personal interface. Not just sitting out with the engineers at a drafting board at the design table. That was somebody else's job. My job was to make sure the right engineers sat down with the right people at the design table, so that we get the end result right. Not for me to be the guy that sits doing the circuit design. And I always go back to the originals with this guy Ray over back in Seattle. When I came out of this school with electrical engineering degree and this training program, I knew everything about these connectors. More than I needed to know about connectors, because I was way overeducated for that part of it. And I watched this guy operate and it didn't matter than he didn't know everything there had to be about this. He knew enough and he called in the artillery. But, boy, he always got the last look and he always got the order. And I said, "Okay, so let's just apply this technology but let's apply a little personality to it too." Sanders is a great personality. He's a bigger than life personality. And there were a lot of people at all of our businesses that were like that in the early days. Big personality. Steve Jobs, big personality. Bigger than life. Ellison, bigger than life personality. Some of the guys now don't have nearly that personality. They're

making a lot of money and I'm not going to name names but, in the software business, they're making fortunes. But they don't have the personality some of those guys did. Ellison, no question, he's bigger than life. I remember when he first started Oracle, AMD was buying database software from him and the stuff was never any good. It was not working and it was a struggle to do business with this guy but it turned out okay. If you look at the personalities that existed, I don't know where these [kinds of] guys are anymore.

Laws: Sure.

Zelencik: It's hard to find them. I remember good ole Bernie-- you remember Bernie Vonderschmitt right?

Laws: Yes.

Zelencik: Bernie, oh, what was he? Sixty-seven years old when he started the company [Xilinx} or something like that?

Laws: Mm-hm.

Zelencik: Where do you get people like that? There'sstill people around like that-- but not many of them. But you got to have a little bit of personality. Good bad or indifferent, you got to be somebody that's in your face. And, when I go back to Sanders, there was nobody could run AMD afterwards

Laws: It was molded so much around his style and his personality.

Zelencik: The whole company was his style...

Laws: And it fell apart when he left.

Zelencik: And who's it now? Lisa Su now, the new CEO?

Laws: Yes.

Zelencik: Yeah, she's very smart. Jerry and her met. I think that's probably secret news but Jerry and her met. AMD in 2019 will be 50 years old, right?

Laws: That's right.

Zelencik: And Lisa told Jerry that they'd have a fiftieth birthday party. That's not off the record but, I mean, that's kind of neat. I hope they're here to do that.

Laws: I hope so.

Zelencik: That would be fun. But they don't have any fabs anymore. I mean, real men have fabs. I remember those fabs we put in Austin Texas. I don't know if you've been there recently but they're office buildings now. All the equipment is sitting and there's nothing there. It's not being used. And I see Samsung just made a big investment in some facilities in Austin. I don't know what they're going to do.

Laws: An R&D center?

Zelencik: Yeah, yeah, but all those buildings are gone. And you saw what they're doing here [in Sunnyvale].Torn down, right?

Laws: Yes.

Zelencik: Big fab, million dollar buildings just flattened. Didn't even take the equipment out because it wasn't worth taking out of there. It just came out of there as sheet metal. And then we look at consolidation now. This is taking place since I did that last interview [for Silicon Genesis in 2013] a couple years ago. We talked about consolidation. Look what's happened to these guys now. Everybody's getting bought up or assimilated and there aren't going to be many men standing here in our industry as we knew it..

Laws: So maybe, as an entrepreneur, you wouldn't want to go into the semiconductor business today.

Zelencik: I don't-- not this way. But, of course, anybody can design an integrated circuit now. All you got to do is know the fab rules and you crank it into a computer. I [recall] pictures of guys are walking around layouts that are as big as this room. You were looking for interconnect faults. That doesn't happen anymore. But you've seen them with people looking for mistakes in the layout by enlarging the thing so there at 10x10 feet. And they're walking over the top of them and looking for a disconnect. And everybody was cutting Mylar by hand with Exacta knives to build a mask. You don't need any of that anymore. The computer does it all.

Laws: Sure.

Zelencik: And all you need is the rules and everybody's designing their own processor now. If you're in business and you're using processors, there's no reason for you not to own your own unique design, as long as you can make them compatible with the operating system you want.

Laws: Sure.

Zelencik: And you just have some foundry build it. I guess foundries are still making money. I guess the big ones, right, they must be making money or they're not going to be doing it.

Laws: They're still in business. I presume they're making money.

Zelencik: And I don't know what's happening with Global Foundries [the former AMD fab]. I guess they're still in business. They just got a big contract over there and it's a government contract too, right?

Laws: I'm not sure.

Zelencik: Well, it's the old IBM [process] stuff right?

Laws: Right.

Zelencik: I thought they just got a military contract of some kind which is kind of interesting.

Laws: Steve thank you for your for your time today. Is there anything else you'd like to say before you sign off?

Zelencik: Let me see if I missed any good stories. Oh, we didn't talk about FASL did we? It was Fujitsu AMD Semiconductor Limited. And that was a joint venture between Fujitsu and AMD to make flash memory and that was a big deal. And the fabs were all basically refurbished fabs that Fujitsu had up in northern Japan, which is as pretty as Switzerland. It's just gorgeous up there. And we had a joint venture and I was on the board and we were major producers of Flash memory...

Laws: When was that, Steve?

Zelencik: Well, let's see. FASL started in-- it had to be '90 something, '95 or 6 or something like that.

Laws: ‘90s, okay.

Zelencik: —Rich and I were on—[Gene] Conner was on the board. [Rich] Forte was on the board. Wally McGreevy was on the board. Then we had all the guys from Fujitsu on the board. We handled a lot of the design work here and all the manufacturing was done in Japan in the Fujitsu fabs. And for a while there, it was one heck of a run.

Laws: AMD was selling the product?

Zelencik: Yeah, AMD was selling the product. Fujitsu was selling the product and —it was their flash memory arm basically. I remember when we built some facilities there we had to always have the Shinto priest there to do the proper anointing of the facility and turn some soil in. And Forte was-- you know Rich Forte right?

Laws: Right.

Zelencik: Forte could never get it right. He put a hex on it. He couldn’t say the right words, couldn’t do the right shuffle. Aways messed it up. I said, “Rich, this thing is going to have a curse on it because you never get the words right for the Shinto ceremony.”

Laws: Interesting story.

Zelencik: So, well, whatever. That’s all I know. I think you got it all.

Laws: Thanks very much for joining us today, Steve. We really appreciate it.

Zelencik: Okay.

END OF THE INTERVIEW

