Oral History of Floyd Kvamme

Interviewed by:
John Hollar

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Hollar: We're extremely happy to be here this morning with Floyd Kvamme, who is a semiconductor industry pioneer, who is so experienced in marketing of high tech companies, but probably is best known for his work at Kleiner Perkins Caufield & Byers, and his work in science and technology policy on behalf of the entire country. So we have a lot to talk about this morning. Thank you, Floyd, for being here.

Kvamme: You're very welcome.

Hollar: Let's start with right at the very beginning, your personal background, your upbringing and education.

Kvamme: I was born and raised in San Francisco. My parents were immigrants from Norway, and my dad was a carpenter, my mother was a homemaker, and then did some domestic work outside the home to earn a living. I would say we were lower middle class folks. Lived in the Sunset when I first remember. I was born at Mary's Help Hospital in San Francisco, but then we moved to 29th Avenue in the Sunset, the row homes that are out there. My dad had been a carpenter working on those. And I went to Lawton School there in the Sunset Public School. And right down the street from us on 29th Avenue at Moraga was a playground, so I spent a lot of my early years there. I loved to play baseball and football. I was taught those sports by a director at that playground, Barney Greenberg, who passed away some years ago, I heard. I had no contact with him after as a kid, but my parents didn't really know anything about American athletics because my dad was just a really hard worker. And an important part of our family was church. We were very active in our church. I had medals from perfect attendance every Sunday for years running.

Then in the seventh grade my dad had joined Doelger Construction, who built Westlake just south of San Francisco, and so we became one of the first residents of Westlake in 1949. And so I went to school then at Jefferson Middle School or Junior High, whatever you'd call it, and finally at Jefferson High School where I would have liked to have gone out for athletics, but my brother and I carried newspapers in the morning. I had my first paper route when I was nine, 24th Avenue in San Francisco. My brother and I then built up a paper route in Daly City for the *San Francisco Examiner*. We carried up to 600 papers a morning; got up quarter of four in the morning, but that's the money that allowed me to go to college, frankly. I started to save very early on. I would help my folks do their income tax because they didn't quite understand the forms from the time I was like 13 or 14. So I knew there was no money. I mean, there was no money for anything about going to school. And I loved mathematics, and I thought that's what I'll be. I'll be a math teacher because that's what I saw. And a high school English teacher, actually, his name is Thomas Redmond, took a liking to me and he said, "Floyd, do you know what engineering is?" And I said, "No." He said, "Engineering is applied mathematics." I said, "Well, that's interesting. So what does an engineer do?" And of course he didn't exactly know. We didn't have counselors in schools that much in those days. This is the early '50s now. And so he encouraged me to think about engineering.

And so I decided that I would find out what the math was. And I learned that the hardest math was in EE, Electrical Engineering, so I decided I'll become an electrical engineer, and if it doesn't work I can always go down.

And by that time, on the job, I was working for my dad every available minute when I was away from school as an apprentice carpenter so I could afford this stuff. And that happened all the way through college, as a matter of fact, but it started late in high school. And I learned that mathematics was the best part in electrical engineering. By that time I had met some civil engineers on the job, but they were mostly running backhoes and that kind of stuff. And so I decided that I would try and get into Berkeley. I remember the test that we were given. The guy got up in front and said, "Only one of ten of you will make it into our freshman class, but don't be discouraged. You can go two years to a different school, or a community college, and then perhaps transfer in as a junior. Well, fortunately I was one of the fortunate ones to be able to get into Cal, and started there in '55 in electrical engineering, and really enjoyed it. And the math was great. And in those days, EE at Cal was very, very heavily oriented toward physics. It wasn't a very practical program, but you really learned how electronics worked, and how radiography worked, and all these kinds of things. Well, there were the odd seminars in the late afternoon that were applying this stuff. On occasion they would have ones on semiconductors. Semiconductors were a very new thing, and they fascinated me that you could get this performance out of a piece of silicon or germanium primarily in those days. And so I went to all those, but I decided that as that time grew to a close, as I was getting my degree, that I really didn't know what engineers did, actually, in the real world. So rather than go on to any master's program I'd go work as an engineer for at least a year and decide whether this was something I really wanted to do.

Hollar: This was after you finished Cal?

Kvamme: No, I was in the process of finishing Cal. So I interviewed, and in 1959 there were a lot of job opportunities for engineers, and I think I got job offers from like 20 different companies.

Hollar: Was it all in semiconductors?

Kvamme: No. It was all in various aspects of electronics, but the one that had semiconductor design in it was a little company in Ventura, California, and I reasoned that if I went to a small company I could see a broad number of things get done. And this company was founded by two German scientists who had come over with Von Braun in Operation Paperclip, if you've ever heard of that term, Theodore Sturm and Otto Schwede. One guy, Sturm, once told me of a meeting he had had with Hitler, actually, on the V2 rocket because he was part of that project, in fact. But they were brilliant guys, particularly Theodore. He was a brilliant circuit designer.

Hollar: For purposes of the record we probably ought to get you to spell Strum and Schwede.

Kvamme: Yeah, okay. S-c-h-w-e-d-e and Sturm was S-t-u-r-m, Theodore and Otto. So, anyway, I went in and did transistor design there. And I said, "This stuff is amazing," and there were the inklings of integrated circuits by that time. They had just been invented, really, two years before that. So I said, "I've got to do my master's work in semiconductors. So I wrote to, as I recall, about 30 colleges and universities around the United Sates trying to find a master's program in semiconductors, and the only two that existed one was at Purdue and one was at Syracuse. The one at Purdue was there because the Naval Air Development Center, in Crane, Indiana, had discovered the transistor effect like three weeks after Shockley, and obviously being second is not a good thing. And the one at Syracuse was there because GE Semiconductor was in town, and they sponsored the program at Syracuse.

Hollar: And there was a lot of work in semiconductors being done at GE, or transistors I would say, not semiconductors.

Kvamme: Transistors, right. Yeah.

Hollar: But transistors through the '50s.

Kvamme: That's correct. They had started the division in the mid '50s, something like that. And so I joined them in 1960, and I worked full time because we didn't have any money. As soon as I graduated from college [Berkeley], ten days later, I married Jean, and we immediately moved to Ventura, and then we moved to Syracuse, and she worked while we were in Ventura to make ends meet. And so we then we're off to Syracuse, and...

Hollar: Did you have any misgivings about leaving California and going all the way across the country to go to school?

Kvamme: Not that many. I mean, obviously we were leaving family, but what I didn't point out was between my junior and senior year, because my folks were from a foreign country, we got a lot of mail from Norway, and so I was a stamp collector from the time I was in fourth grade, or something like that. I remember getting all the First Day Covers, if you know what those are, where you'd send in an envelope, and pay the price, and they'd send you the letter back with the stamp on it. I have every First Day Cover from 1948, I believe, in my collection someplace. I don't even know where the collection is today. But I had a huge interest in geography and travel. And my brother and I had gone to Norway between our junior and senior year. My brother, who was older than me, 17 months older than me, he had had pneumonia as a very young boy, so he was held back in school, and as a result we went to the same grade all from about the sixth grade on. And many people thought we were twins. We were not, but they thought we were twins. And so, anyway, at Berkeley I decided that I would work [for a year, at least, before going to grad school], and so I worked that year, worked on mostly programs from Point Mugu Missile Range because in Ventura these scientists had these tracking programs and all. [Then] Went to

GE [in Syracuse], and I did all of my master's work at night, and so I was busy. I was taking nine units and working full time.

Hollar: So you were working full time at GE and then getting your master's degree.

Kvamme: Yeah. And GE had a program that they'd just started there which was kind of a fast training program for new engineers in semiconductors and they moved you. Every six months you moved to a different assignment. We'll, I moved into Applications Engineering, which wrote the GE Transistor Manual, which I was showing you earlier.

Hollar: Yeah, that's really neat.

Kvamme: This was the Bible for semiconductor designers in 1960, '61, '62, '63, and this happens to be the last version that was ever made, '64, but my master's thesis is in here on how you know how fast the transistor switches from the on to the off state, and how you design a semiconductor amplifier, a transistor amplifier. How do you figure out what the values of the resistors are, how much output you want. I wrote those chapters, and all, and so.

Hollar: Now, what year did you graduate from Cal?

Kvamme: Fifty-nine.

Hollar: Fifty-nine.

Kvamme: Went to Syracuse in '60, graduated with my master's in '62.

Hollar: And this manual existed at GE while you were there?

Kvamme: That's correct. It got thicker, and thicker, and thicker, and they produced this one after I left, this last version, and sent me a copy and still called me one of the authors of it. It was a very, very-- I don't know how many of these they printed, but it was a lot, and everybody wanted the transistor manual because the transistor was such a new thing.

Hollar: And what was your master's thesis on?

Kvamme: It was on charge analysis of semiconductor switches, namely how do you-- we use the charge equation, or develop charge parameters to show how quickly would a transistor turn on or turn off. And, of course, in those days there were many different types of transistors. We had lots of germanium types and a few silicon types. Silicon wasn't that common when I did that work, but I showed in the thesis how the different constructions of transistors had different switching times and why. We analyzed all that in the thesis.

Hollar: Was it clear at that point? As you were doing that research, was it clear to you the relative limitations of germanium, for example, or relative to other materials?

Kvamme: Yeah, because germanium it was not possible to build an oxide layer on top of it, so it was pretty clear that that wasn't going to be integrated circuits. And GE, while I was there, got involved in ECL, Emitter Coupled Logic. As a matter of fact, many years later I got this call from some lawyers, and GE and Motorola were arguing about the ECL patents. And it turned out the first publication they could find on ECL I had written as an application note in 1961, I believe. And ECL was very, very fast. It had a lot of problems, but it was very fast for computer usage, and the fact that all the collectors tied to one region it was easy to make from an integrated circuit point of view, so that's why it was popular.

Hollar: And what was the environment like in those days? A lot of young engineers experimenting, trying new things...

Kvamme: Yeah, and trying to build new things. Of course, radios were being built. And then, of course, there was the fact that the space program was starting. And in '57 or '58, the Christmas of those years, I'd been interviewed by the Ford Foundation which was trying to figure out how do you make an engineer, how do we get more of them; that old story that's gone on for decades now. And so I had gotten interested in how that was all progressing also, and being interviewed about what made people interested in electronics, or interested in engineering. But, yeah, it was exciting, and there were all kinds of new applications. And the building of computers with this was just starting. The Polaris Missile was in the design phases. It didn't get big until I joined Fairchild later. But satellites, they couldn't use vacuum tubes. That was totally impractical, so they were using transistor designs on circuit boards at that time. So anyway, did the master's thesis and I would have stayed at GE for a while because I liked it, I liked the guys there. It was fun. I was traveling around the country giving lectures on how semiconductors worked at all kinds of companies, and introducing them to this new thing. And early integrated circuits were starting to come out, logic families, the ECL family, the RTL family, Resistor Transistor Logic. But they had a policy that if I didn't have a marketing degree I couldn't be in marketing at GE. So I said, "I'm kind of enjoying--" and applications was in marketing. It was a really strange policy. And so I decided maybe I better get back and go back into the design world.

Hollar: So that's interesting. You were drawn into the marketing side of it as well as the engineering side.

Kvamme: That's correct. I don't know, people said I was very good at explaining things with simple analogies, and trying to get people to understand what was going on in a transistor so that they could use it. So I started to look around coming back to the [west] coast, and we decided to move back, and I joined Space Technology Labs as a circuit designer. And the reason they wanted me, they actually found me because they saw some of my writings. I had given talks at the very early Solid State Circuits Conference; was held in Philadelphia every year, and I had given a couple of talks there by then with my GE hat on. And so they approached me and wanted me to join them for a big program that they had just won the contract on. So we decided to move back to California, because my next assignment in GE was going to be I can't remember, something in manufacturing, and it wasn't interesting either. So we left GE and came back to Manhattan Beach and STL, and as we were transiting the country some political thing came up. And the contract was taken away from STL that I had been hired for to run the engineering thing on. And I was pretty young at that time. I was like, what, 24, something like that, 25. I was born in '37.

Hollar: What year would this have been?

Kvamme: Sixty-two.

Hollar: Nineteen-sixty-two.

Kvamme: Yeah, because I was born in late '37, so I was 23 at the time, yeah, 24 at the time. So we got there and they said, "We have some good news and some bad news." The contract is not ours. It was going to AC Milwaukee, AC Spark in Milwaukee, but we really want you to work for us, and we're going to put you into this orbiting geophysical observatory project that we do have as a design engineer," and I said, "Okay." That wasn't exactly what I had in mind, but that was fine. And a good group of guys designing this project, but as a result of being there, of course, the salesmen from the different semiconductor companies were calling on me to try to make sure that I designed in their products. And, of course, I knew a lot about the GE products, but the Fairchild salesman was a particularly persuasive guy. His name was Chas Haba. As a matter of fact, he came to the Fairchild 50 year anniversary here. I hadn't seen him in years, and years, and years. And Chas kept introducing me to the guys up in Mountain View, and to make a long story short they made me an offer to join the product marketing team because I kept correcting Chas's pitch on how transistors really worked because the salesmen in those days were not a hundred percent trained. They weren't engineers. They were engineers, but they weren't engineers with semiconductor training.

So I joined Fairchild in 1963, April of '63, in product marketing and integrated circuit product marketing. Because they had a guy, Ben Anixter, who you may have met, was running discrete transistors, and my job was to define circuits for circuit families for Fairchild, and to work on the custom programs that they had, and work with those companies in designing the kinds of circuits that they would need. All the

development was done at Fairchild R&D up in Palo Alto, and that was run, of course, by Gordon Moore at that time, so I got to know Gordon very, very well. Of course, very few months after I was there in November '63 I remember one day sitting in Gordon's office going over our weekly review, and somebody sticks their head in the door that John Kennedy had been shot. So I know exactly where I was. I was in a circuit design review and we were stunned. I remember the impact on all of us was quite remarkable. But the large computer companies, in those days, each designed their own chip that they wanted the manufacturer to deliver. It was before the day when they automatically adopted the manufacturer's designs, although, that transition was taking place during that period of time. And since I was working with a lot of the large customers, the SDSs and the CDCs and the IBMs and all, I got to know the management pretty well. Tom Bay was running marketing. I reported to a guy named Bob Graham, who has passed away since but he was a very popular guy, initially, and then later on I reported to Jerry Sanders within Fairchild. As a matter of fact, when we left I was still reporting to Jerry. So we developed some circuit families. We worked with a lot of companies on developing their products.

And the fascinating thing about Fairchild was as the semiconductor division grew we would turn in our month-end results, and our quarterly results, and then Fairchild Camera and Instrument, which we were a division of, would announce their quarterly results. And by '65, '66 the profits at Camera and Instrument were always less. Whatever Camera and Instrument was reporting, namely, everything else was losing money was the bottom line. And so I got a phone call, actually Christmas Eve 1966, and Charlie Sporck was putting together a team to go off and start our own company because he was general manager [of Fairchild Semiconductor] at that time. And, actually, there's a funny story about how I had met Charlie because Fairchild also had this same idea that you had to have had sales experience before you could advance in marketing. So after I'd been working there as a product-marketing engineer for a very short time they transferred me back to Boston to work on the Apollo computer, the Poseidon and the Polaris at MIT Instrumentation Labs as a sales engineer. And the MIT folks were designing the Apollo computer at this time, and Raytheon was having real trouble in manufacturing. And I wrote this long memo to the coast about all their problems that they were having, and it took me years to live this line down. I finished the memo by saying, "Remember, on Apollo the customer is asking for the moon." That was, "Yeah, we know, Floyd, they're asking for the moon."

Hollar: That's a great line.

Kvamme: I thought about it at two AM in the morning, and I was signing off this report and why they needed help. So Charlie came out there, it was a snowy day, and helped them build, show them the half marriages and how the Apollo computer-- well, you have it out here, but how it was physically put together. And they had a weld splash problem it turned out.

Hollar: Now, why was it being built out there?

Kvamme: Well, Raytheon had the contract to build the Apollo Computer. It was being designed by MIT Instrumentation Lab on Cambridge Parkway there. And so I called on those guys, and then I called on the folks to make sure they used our circuits in it because we had a competitor. Both Raytheon itself, semiconductor division, was building that part and TI was building that part, so there were three of us trying to get the logic business for the Apollo computer, and we were very fortunate in getting a large share of that business. So that's kind of how I had met Charlie, although I didn't report to him at all. So it was odd to get this phone call. I'm obviously leaving out a lot of details. There are a lot of funny stories there, but on Christmas Eve 1966, and it's Charlie, and he wanted me to come over to his house. He was putting together a team to go join Plessey, and we were going to resign the day after New Years in 1967. And he was going to have a meeting with the guys from Plessey. We were going to move to England and take things over there. So the group of us were sitting at a restaurant across the street, and Charlie was negotiating the final details with Sir John Clark and Michael Clark, I guess was his name, the guy who was running Plessey at the time. And Charlie comes back across the street. I think it was actually New Years Day evening. He comes across the street and he says, "Can't make a deal. These guys, this isn't going to work. We don't want to do this. We're going to go back to work tomorrow. We work at Fairchild. We're going to be loyal Fairchild employees, and it's not going to work."

Hollar: Do you know why it broke down?

Kvamme: It had to do with what the compensation details were going to be, particularly the stock ownership kind of thing because, of course, by that time the Valley was, you know, everybody at Fairchild had a stock option including the secretaries, I mean, a hundred percent of the employees. And so ownership was a very key thing. We didn't care about the salaries that much, but what percentage were we going to get and what percentage would we have for the employees. And I think that was so far-- and Charlie would know the exact answer, of course. I've actually forgotten, but it had to do with that. So, we went back to work the next day, and that was it. Well, six weeks passed and I get another call from Charlie. He says, "There's a struggling company that had hired Bob Widlar and Dave Talbert called National Semiconductor down in Santa Clara, and they want to bring us in. They'll move the company from Danbury, Connecticut, although we'll keep the operation there and we'll be the management team." So, I went over there and sure enough the next Monday morning-- that was also, I think, on a Sunday, so I always had a lot of time to decide these things. And Don Lucas was the originator of that whole idea. He was on the National board, the Don Lucas of Oracle fame, etcetera, etcetera, and so he put the deal together. Peter Sprague was the chairman of National at that time, but he was off in Spain someplace, and he was all in favor of it, though, so we joined National.

Hollar: It was just common, wasn't it, at that point for talented engineers or groups of engineers to leave Fairchild as a block, and...

Kvamme: No. I think we were the first.

Hollar: You were the first?

Kvamme: There had been a few small groups, but after us, then, AMD formed, Intel formed, a number of other things formed, but in the very early days of Fairchild that had happened, but there hadn't been a spinout in a couple years, maybe three or four years by the time we started that. We kind of started that avalanche.

Hollar: And was it clear to you at that point, for you personally, that was just a better way forward than staying at Fairchild?

Kvamme: Well, Charlie was very convincing on that front because he saw the numbers and he said, "It's silly. There's so much opportunity." And they, making less money as a total corporation than we were making it was not capital intensive at that time. As a matter of fact, when we first started at National we built a brand new diffusion line, a wafer processing line, and the capital cost was one million dollars. Today it's four billion, five billion, I mean, it was nothing, but we saw that that was starting to happen, and if you didn't have retained earnings you weren't going to succeed in this business. And so he just wasn't happy with what Syosset, the [Fairchild] headquarters was doing. And I, frankly, don't know how all the negotiations took place, or what he tried to do to change before that. Because by that time Bob Noyce had become president of the company, but he wasn't chairman, Sherman Fairchild was.

And then another guy, what was his name, was also-- A guy named Dick Hodgson was also in that upper-rank there at Fairchild. It wasn't going to work. Now, up until that time, essentially all the companies had, you know, all the semi conductor companies had large corporate parents. Raytheon was like that. I guess Signetics was independent at that time, and then they, of course, later became involved with others. I mean, Motorola, Texas Instrument had been a long-term company that was in the mining equipment business and all, so all the big companies had corporate parents that weren't just semiconductors. They weren't pure semiconductor companies, and we may have been one of the first that was going to build a big company purely from semiconductors and then, of course, like I said, there was the avalanche of AMD, and Intel, etcetera.

Hollar: So this was new for you to spinout of Fairchild as a group?

Kvamme: Yeah. Yeah, I think it was pretty new. I mean, it had happened before. Baldwin and some of those guys had spun out before I arrived at Fairchild in '63. It happened, but they had not been very successful, none of those others. Rheem was not very successful, those. And what we saw was this thing that I talked about earlier, springs, levers, stepping, motors and gears. We saw that there was a transition, taking place, that there was a huge industrial market. We didn't think that we were big enough, and we knew we weren't big enough to supply the big computer companies, but we knew the military/aerospace marketplace and the evolving industrial marketplace were going to start adopting

semiconductors. And so our whole approach was to sell through distribution to this large industrial base. We didn't think we would be big in the big TV guys who were starting to adopt semiconductors at that time and had during the mid '60s. But we saw this emerging industrial base plus the military and, of course, in those days defense applications were probably 40 percent of the business, something of that order, by the time you got the different missile systems and those kinds of things. The missile systems were, of course, the big ones. The space ones were more the recognition of the quality of your product kinds of deals. The volumes ended up not being that large there. So my first job at National was heading up product planning, product marketing, what are we going to build, and also some engineering. I hired the first digital engineers because Bob Widlar was over there in the analog, and then I became head of marketing and sales, probably within the next two years, and then general manager in like '72. And we grew very rapidly. I mean, as I recall our numbers when we took it over it was a $5 million dollar company losing a lot of money. Our first quarter there we were profitable, but we went from $5, to $11, to $33, to $99 to $213 million. I mean it grew very, very rapidly, and it was heading for the billion-dollar thing.

Hollar: So your strategy worked; this initial strategy of supplying to people who were replacing other components with semiconductors?

Kvamme: That's right, and doing a lot of seminars. We traveled the world with seminars. At that time we had the largest technical seminar ever held in the country of Sweden. I mean, Bob Widlar was, by this time, a phenom. He was the Steve Jobs of the early '70s, really. Everybody wanted to hear from him how do you design circuits, and he did the linear stuff. I did the digital stuff. Sometimes a guy named Dale Mrazek came on in the digital stuff as well to share it, and we taught people how to use silicon in all these applications, and it just took off. Lots of application notes, lots of that kind of stuff. And when I became general manager then down here we had 9,000 people in Santa Clara. People don't remember how big those fab operations were. Matter of fact, one of the things I did that was really kind of wild was that I used to like to have lunch with 20 frontline workers every week just to figure out what's going on in the factory. I found it a very valuable thing to know what was going on because when you've got that many people you don't know everybody. Reports filter up, but I wanted to know what was going on, on the ground floor, and it was very clear that a lot of our people were foreign born, and I could relate to those folks.

That's the kind of family I grew up in where the language wasn't, you know, there was an accent involved and all those kinds of things. And they had real trouble understanding, what are all these pieces that we're building going into? So we started a real program of trying to educate them. In our cafeteria we'd do displays of automobile, you know, what parts we were doing in those things. I remember then one year we were planning on the company picnic, which as the company got larger we'd go down to like Uvas Meadows and a thousand people would show up and probably 500 of them didn't work for us, because there was free food and all. And we decided, why don't we have a picnic at the plant because we had just taken over the 44 acres there in Santa Clara and hadn't developed our other buildings, and

we'll invite the folks to bring their family and show them where they work, and then do some displays about what we build and this kind of stuff. Twenty-three thousand people showed up.

Hollar: That's amazing.

Kvamme: People were just so thrilled to be able to show their family what they did for a living. And it really spoke volumes to me because I suddenly realized here I was raised in a family of a carpenter and I could see what my dad did. I knew my dad built that house, and this building, and those houses, and this kind of thing. And I realized that kids in modern families, many of them didn't have that opportunity as the tech revolution came by. They disappeared into these buildings, and particularly if they were working on government work they couldn't even talk about it at home. And I personally believe part of the breakdown of the family is related to that problem in our society. I really do personally believe that. And so we did everything we could to inform people of what they were working on so they could be proud of it.

Hollar: Well, and even if it wasn't secret it was an invisible thing that went into something else that you can never see.

Kvamme: It was an invisible thing. They went into this tilt-up building. And then I started to bring this Southeast Asia plants because we had about 20,000 people in Southeast Asia building all these little bugs. You remember what ICs looked like. They didn't know what they were used for. So we tried to take all the popular examples out and give our factory managers input on what these things were used for so people could relate to their jobs.

Hollar: And how did that work?

Kvamme: People loved it. They just thought this is terrific, and they felt part of it. I mean, by the time I left the semiconductor division we probably had 20 or 30 pieces of silicon in every new car, and people related to that, and they related to the missile stuff. And by that time, also, we were building things like calculator chips and those kinds of things. So that was a big deal.

Hollar: Now, Widlar was a real character.

Kvamme: He was a real character, and sadly he had a real, real drinking problem, but he and I just got along famously for some reason. I was not a drinker at all, but we had a real bond of trust. And he didn't like meetings, so learning what he was actually working on was hard. I remember when we first started National he had developed a voltage regulator, and in the field people were just popping it all the time. It was like a fuse in the circuit. It wasn't working. And I'm trying to figure out how to get Bob to focus on

something that was a little easier to use. And so one day, candidly, I walk into the urinal and Bob's standing at the adjacent urinal. And I tell him, "Hey, Bob, you know what the world needs? It needs a part where there's an input lead from an unregulated voltage, an output lead that's five volts and a ground lead. Three leads, man that'd be the nirvana." About a year later he walks into my office, puts these parts on the table and says, "Is this what you were asking me about?" I had no idea he was even working on it, and nobody did. He didn't talk to people about what he was working on. But he was doing better amplifiers, better regulators, better voltage standards and this kind of stuff. And on these conferences he was what everybody wanted to listen to, and he was also very good with customers. And he realized that they always asked the same questions. So they'd get a long letter back from him answering their questions, and they were thrilled. I mean, "I just got a two page, three-page letter from Bob Widlar." Well, what he had was he had developed a paragraph for every kind of problem, and he had about 20 of these standard paragraphs. And he'd tell his secretary, "Okay, start it with intro," and he had an intro thing; Dear So and So, glad to hear from you. I realize you're having problems. Here are some things I think you ought to think about. "Then do paragraph six, eight and 14, Love Bob. Not love, but whatever. And people thought the guy was just writing all this for them. So all the letters largely looked differently, but the paragraphs were the same in these things. I mean, the guy was, he was amazing.

Hollar: And he could churn them out quickly, too, right, because he had a template?

Kvamme: Oh sure, yeah. Oh, absolutely. He had a template for them. That's what he did.

Hollar: Now, did it ever occur to you, as you were doing both product marketing and engineering, did it ever occur to you, you know, "I don't have any formal marketing training?" I think it says a lot about someone who can build a paper route of that size as a boy. You obviously knew something about customer service and building customers. How did you come to your kind of natural expertise in marketing?

Kvamme: Well selling, to distinguish from marketing, I mean, my brother and I hawked newspapers at the last Joe Louis fight in the Cow Palace when we were like 12. I sold a lot. And we hawked newspapers in front of grocery stores up in Westlake, and our boss brought us through the Stonestown Towers to solicit new folks. One of the things that was probably-- my mother used to joke with me about this. Westlake was just developing, and my dad, he had become the foreman on the foundation, and at the peak they were building eight foundations a day of new homes. But he knew when people were moving in because they'd report when the house had to be finished. Now, he was not in the finish, but they'd post it. And so when we started with the *Examiner* in Westlake there were virtually no homes there, however, the number of homes was growing like crazy. Well, my dad would bring home the list of new homes so I could call on them. And after a little while of that I said to my boss, "You know what Harold and I will do?" My brother's name was Harold. He's deceased now. "But what we'll do is we'll deliver-- if you'll give us 30 days worth of papers that I don't have to buy from you," because you bought papers and that's how the transaction worked for a newsboy. "We'll deliver them for 30 days free to every person that moves into

Westlake and then call on them on the 30th day and see if they want to subscribe to it by that time." Man, it worked like a charm. We had over 50 percent of the new homes in Westlake taking the *San Francisco Examiner* at that time. I mean, it was a-- and their density of circulation in San Francisco was like 16 percent as I recall the numbers. Well, we had 50, and that's why they wanted us to call on them. But the secret was this free sample, and my dad had access to all the new folks moving in. So as soon as they moved in, the next day they moved into their house they had a San Francisco Examiner sitting on their doorstep the next morning. And then as the thing grew we would peel off routes for other boys to take, but we took all the new, all the new territory because besides I got 50 cents apiece for every new subscription I got. So I not only got the business, but I got a bonus for the subscription. So that's how that started, so I guess there was some... Now, my brother was not good at that. He didn't like that. He was a hard worker, and all, so he had no problem delivering the papers. And then he'd come back and find me. I had a terrible problem. I could actually fall asleep on that paper route standing up, and he'd come racing back in the reverse direction trying to find me. I'd be in the middle of the street or the middle of the sidewalk because we walked it because we had such density. It didn't make sense to use a bicycle. **Hollar:** You were getting up at 3:30 in the morning…

Kvamme: Yeah, quarter of 4:00…

Hollar: …to do this.

Kvamme: …until 6:00.

Hollar: So I'm just wondering if that experience at an early age just developed this aptitude for being able to talk to customers.

Kvamme: I also liked to teach. And what I found was good marketing people-- many times a good marketing person has an interest in teaching. Because, in some respects, in the technical world, that's what you're doing. And people love to learn, and they have great respect for those from whom they learn usually. And so if you can turn your job into a teaching experience, not a selling experience, there's a great benefit to that. And, I mean, frankly, what I decided very early on-- and I'll have to admit that this had some of my religious background melded into it. If my part wasn't the right part for their application, I'd tell them that. I'd say, "You know, I really don't have the right thing for you. You really ought to be using this one. We're coming in that direction. And when we're there, I'm going to try to get the business back." And so if you train them and you built that trust thing with folks, it was really very valuable because, again, even through the '70s, the understanding of these circuits was not real high as far as some of their actual application. So, anyway, to continue this story, we did that. And semiconductors were just permeating, computing and calculating. And by that time, the personal computer was starting to bubble and all. But we noted that even if you take a cash register system, the cost of the thing was mostly the semiconductors in it. So we decided that we'd branch out from the semiconductor business at

National, and we started the data checker division, which was grocery store checkout systems, which Fred Bialek ran. And then we saw that, in building memory circuits, add-on memory was, <laughs> I mean, when you look at today's numbers, it's amazing. I remember when, add-on memory, adding onto an IBM computer, when we broke through that magical barrier of a million dollars a megabyte <laughs>. That was 1979. I mean, think about it, a million dollars for a megabyte in today's world. But that was a big milestone.

And so we started to build memory systems and market them through ITEL and other companies as a division, within Semiconductor, within the semiconductor division. So I ran that, and we got to know some big customers. But we were selling through ITEL. They were our principal outlet. Well, then we got word that they were developing a full mainframe computer competitive with IBM's middle range of computing in San Diego in a secret project. And we found that interesting, and we supplied them some circuits for it. But most of the circuits were coming from Motorola because they were ECL circuits because they were fast. And they said, "You know, we don't know anything about a technical development like this. We're a leasing company. Would you guys like to get involved in this?" So we said, "Okay. We'll take it over." And they basically gave it to us at that time, but they drove a bargain that they would be the marketing outlet for these things. And at that time, we figured that we could build a 370/158 mainframe computer sopping wet if we did everything wrong for $150,000. The market price was 2.1 million from IBM. So we knew the margins were going to be great. And we figured maybe IBM can do it for $100,000, $95,000, something like that. That's what we figured, because they were much better than us in some of their circuitry. But even at 150, I mean, with the market price at 2.1 million, there's a lot of margin here, okay? So the first year we announced that, which was I think 1979, in the first year, we sold $103 million worth of those computers and put $40 million on the bottom line. I mean, it was enormously successful. No, it had to be '78 I guess because, in '79, IBM introduces the 4300 series. And they took the pricing way down to try to-- and, of course, Amdahl was starting to hurt them also because Amdahl had already been doing that. But Amdahl was focusing at the high end. We were focusing in the midrange. And one day ITEL came to us and said, "Do you want to buy our business? Because we're in trouble. We're getting close to bankruptcy. This isn't working. The model has changed." And so I went up there, talked to them and with Dave Martin. Because he was going to be-- he was running the computer products division within the semiconductor division reporting to me at that time. And so we went up there. It sounded interesting. And I went to Charlie and said, "Charlie…" Oh, and the big problem was they owed us 80 million bucks receivable, and that was going to be really painful. I mean, National wasn't going to be able to handle that easily at that time. That was huge. And so I went to Charlie and Charlie said, "Okay. You can buy it as long as it doesn't cost you any money." <laughs>

Hollar: <laughs>

Kvamme: So we had to talk ITEL into giving us the business and then leasing us the spares inventory, which was how the deal essentially went down. There were some other wrinkles about it. So we took it over on October 1, 1979 from ITEL. And so we became the end [marketer], and so all the ITEL

employees came to work for us. We established a headquarters, up here, just off Page Mill Road, in one of the field service offices. And this office, I mean, it was so ITEL and so non-National it was unbelievable, had carpets and all fancy wall hangings and all. And, I mean, it was driving Charlie crazy.

Hollar: Because National's offices are very spare.

Kvamme: Very spartan, very spartan, open offices, those kinds of things. So it was a very different environment. But we took it over. And the deal was that we could give it back to them, on January 1 [1980], if we felt, in those three months, that this wasn't going to work. And we basically removed the entire top line of management, got the second line guys there. Because the top line guys had contracts that were not workable, I mean, if we had to pay them all that. So we had to give them back to ITEL. And we put it together and created a thing called National Advanced Systems, and Charlie asked me to go run it. So that's when I left Semiconductor. So for three years, I was in the mainframe computer business. And, I mean, very dull business, by the way, because every computer room, doesn't matter what industry, is really largely the same. And we were competing. We had to get Hitachi to agree, because they were the other major product line from ITEL. And it fell my duty to go to Japan and talk Hitachi into it. Now, remember these were the days when the semiconductor industry was just wailing on the Japanese. And Charlie had been quoted saying lots of un-nice things <laughs>. I had been quoted saying some un-nice things…

Hollar: About the Japanese?

Kvamme: …about the Japanese. And now I had to go convince them to use us as their sales agent. I mean, this was a sales job. The first week I went over there I sat in the hotel room all week and had to go home. They wouldn't even meet with me. And then there was a guy at ITEL who did a formal introduction, in a Japanese way, and I went back over there. And they agreed and they said, "Okay. What are you going to do for us?" Because they had the same problem. They had a receivables problem. And so we worked out a way to work the receivables, how they got paid, how we got paid for our services. And I committed to them, and where I got this number I do not even remember, I said, "And we will sell 30 of your large machines in the first year." And they were about four-million-dollar machines at that time. So that was a big number. And we sold 31 by the way <laughs>. And they thought we were geniuses.

Hollar: How did you know that was the right number to give them?

Kvamme: I didn't know. I pulled that baby right out of the air. Now, some of the sales guys said, "We've got enough deals going," and the key was getting EDS. And so I flew down [to Dallas], and I got very involved. We had a guy calling on EDS. But he was calling on the lower levels, because he had been an EDS employee. So he wasn't allowed to formally call on them. And a guy, Morton Meyerson, was

running EDS for Ross Perot at that time. And Mort said, “Well, I want to go to Japan and meet with the guys.” Well, it turned out Mort’s son was studying Japanese and he was really into things Japanese, which turned out to be wonderful for us. And so I closed the first order over the phone with Mort after he’d been there for two systems. And that was really key, because we could then say the largest computing bureau company in the world was using our systems and had thrown IBM out for their next group of computers.

And I told Mort I had a new idea on something that I’d been playing with at National, but I wanted to come down and see him. I was on my way to New York just after he placed the order. So I went down and talked to him and I said to him, “You know, Mort, we are so thrilled to have you as a customer and all. I just wanted to come by and say thank you, but I want to ask you some questions. Why’d you buy from us? I mean, this is a complex buy. What was it in our pitch that ma--“ And he gave me all this stuff, and I was grilling him on different things. He said, “Floyd, what’s going on here? Most people disappear when they get the order.” I said, “Well, this is a concept I’ve come up with called win analysis.” I said, “I’ve concluded,” and this is based on an experience I’d had at Semiconductor, “that people bill loss business reports and they’re full of nonsense because most people don’t want to tell you why they really didn’t give you the order. People who bought from you, they want to establish a relationship. They want to tell you. And so,” I said, “I’ve decided that it’s more important for me to know why I’m winning than why I’m losing.” And we instituted that, but that’s the first time I personally did it.

Mort was so impressed with this. He says, “I got to walk you down the hall. You got to tell this story to Ross.” <laughs> And that’s how I met Ross Perot <laughs>. And so I go down and he said, “Boss only has five minutes.” I said, “That’s great because my flight, you know, I should leave within the half hour because I’m going on to New York.” I sit down with Ross, and he had rocking chairs in his office. It was very country-like. We spent an hour and a half. He asked me every question under the sun. He asked me how transistors work, I remember what I used in those days, on how MOS transistors worked. Because he knew something about bipolar transistors as I recall. I said, “Did you play with magnets and iron filings as a kid?” He says, “Yeah.” I said, “That’s the concept. Think about that. You’re attracting certain carriers and repelling certain carriers. That’s what’s creating a channel. That’s what a MOS transistor is.” He loved it. I’ll have to admit I thought of that analogy on the fly sitting in his office. How do you explain a transistor that’s attracting and detracting? And I thought of a magnet, and that’s what a Gate signal is. It’s a magnet. So that’s how I established-- and so he insisted every time I went to Dallas and called on Mort that I come by to see him. And they always joke with me [at my office] about it, because he called me Flawed. And I said, “I’m not sure it’s not spelled F-l-a-w-e-d.”

Hollar: <laughs>

Kvamme: “Because that’s what it sounds like.” <laughs>

Hollar: Because he has this thick Texas accent.

Kvamme: Very, very thick Texas accent. But I'll just say now that relationship was very good. And that's how I ended up introducing Ross to Steve Jobs when NeXT was formed, because of that relationship. Ross called me when Steve was trying to get money for NeXT, and that's how Perot ended up being a part of that deal. So it's interesting how relationships go a long time. But, anyway, so did that for a number of years.

Hollar: It sounds like you developed great relationships and had great stories, but you started out by saying…

Kvamme: …boring business.

Hollar: …boring business.

Kvamme: But I got to know the mainframe computer business-- I got to know the IT community really.

Hollar: And it was so hot right then, right?

Kvamme: Yeah, stuff was changing very, very rapidly. So I get a call one day from Mike Markkula who's CEO of Apple. Well, I had hired Mike into The Valley in 1966. He worked for me in product marketing. The guy who was running sales [at Apple], Gene Carter, had worked for me in product marketing. The guy running distribution had run distribution at National, in semiconductors, Roy Weaver. And they said, "We're looking for an executive vice president marketing, sales, distribution, etcetera, etcetera. And, by the way, half the team has already worked for you and they want to work for you again. They want you to take the job." So I went over there, and I was attractive for them not because of my semiconductor background really. It was really the fact that I'd been in the computer business and I knew all the IT guys. Because I'd gotten to know [for example] a group called the Research Board, which was run by a lady named Naomi Seligman and Ernie von Simson at that time. And I'd introduced them to Silicon Valley. And so I did that, and I met Steve. And I went from being the young guy to being the old guy over a weekend, because I was always the young guy at National. And, yeah, I was in my early forties by now. But nobody at Apple was 40. Gene Carter is a little older than me, but most of the guys [were much younger]. And Steve was, of course, famous for saying, "Anybody over 30 doesn't understand computing," at that time. But we hit it off, and he was the development manager for the Mac at that time. And we hit it off.

Hollar: What was it they felt they needed from you? You had these relationships and people knew you. But what was it that someone said and it led to the conclusion that Floyd Kvamme was exactly the right guy for them?

Kvamme: Well, I think that was more or less Mike wanted to know who he was putting in the marketing and sales role. And they wanted to get it a little more organized, and I was thought to have some skills in that particular area of organizing it. It was very clear that I didn't have what they thought was maybe going to be the most important thing, and that was consumer product experience.

Hollar: I was about to ask you about that.

Kvamme: Okay. And so jumping ahead in the story, the first Christmas, I didn't know how to plan for Christmas. But I knew there was a guy on the Apple board named Phil Schlein who was the head of Macy's West. So I called Phil. I said, "Phil, I don't know how to do Christmas. How do I figure out what the demand for Christmas is going to be?" And he said, "Look at your October revenues and look at the rate at which October's changing." Now, that was going to be very late. But our turnaround time through Singapore at that time was pretty fast, and we had that Fremont plant at Apple. And so I took Phil's advice, and we hit it almost dead nuts on. I mean, the guy was so good at consumer market calculations that it was-- he was incredible.

But I also didn't know advertising. Advertising, in a sense, is really common sense. I'll never forget this. I'm driving home one night from the office, and I hear one of our ads on [radio] about getting your kid a computer for Christmas because they had to learn this and you had to expose them to this, this kind of stuff, etcetera, etcetera. I listen to the ad. I get home. And I called Jane Richardson, our advertising manager. I said, "Jane, that ad is upside down. It's all wrong. People are scared stiff of computing. They don't know how they're going to teach their kids, but their kids know how. Turn the ad around. So advertise that your kids are going to teach you computing, because they know how it works." Because that was largely becoming true. And we did it, and it was enormously successful. I mean, it was jus-- so that was just common sense. If you really listened to what you're doing and thought it through as a buyer, you knew that kids in schools were starting to tinker with these things because the Apple phenomenon was starting to catch on. And the Apple II was selling and there were these computer clubs all around. And kids were going out and seeing these things. And so we took the burden off the parent buyer for training their kid and just give them the computer and let them go at it.

Hollar: You turned it into something exciting.

Kvamme: Yeah, and that they [parents] could-- that wasn't something that they knew they couldn't do, because they couldn't do it.

Hollar: Your longtime colleagues at National, were they shocked when you said I'm going to leave this and I'm going to Apple? Was this a real surprise to them?

Kvamme: Well, I only talked to Charlie. And, of course, a number of the guys-- I was kind of almost the last guy to leave of the original group. But, you see, by that time, I was totally uninvolved in Semiconductor. And the thing I loved about Semiconductor was the variety. I mean, you're talking about spacecraft in the morning, watches for lunch, some industrial application that evening. I mean, we were going into everything. Mainframe computers weren't <laughs>. And we had, when it was exciting, we had great market shares. For example, in Australia, we were ahead of IBM in certain categories. And also it was worldwide; do you remember that story about Ross Perot getting these guys out of Iran in the late seventies, those were our computers <laughs>…

Hollar: Really?

Kvamme: …that were being operated there. And so it had its international flavor. Because, see, Hitachi then let us do all-- sell their computers in every part of the world except Japan. So we developed their markets all over the place. And so, by that time, I was reporting to Charlie and Dave was a natural replacement for me. And so I just said, "Charlie, I don't think I want to do this the rest of my life." And it wasn't exciting. I mean, great people. But it was kind of a-- and it was a financial business largely also, leasing and that kind of stuff. I mean, it was interesting. I learned a lot, but it wasn't something I wanted to do.

Hollar: Talk a little bit about what it was like to work with Charlie.

Kvamme: Charlie was a tough, tough manager, because he really wanted performance. He was really into meritocracy. If you performed, you were just fine with Charlie. Every day he would go in and look at the computer tabs. And on occasion, he would come away saying <laughs>, "This thing is eating like an elephant and shitting like a bird." <laughs> Because he'd see the new orders and he'd see the output. And that's how he knew which sections were working and which sections weren't working. So he stayed very close to it. By that time, he had the consumer products division. He had data checker as well as Semiconductor, which had the computer products division. So there were a lot of things. But he was tough, but he was also incredibly fair. If we had a real problem, he didn't argue about taking the parts back. I remember a major deal with, I think it was, Raytheon, I don't remember, I'm almost certain it was Raytheon, where we were wrong. And he agreed to a big return. So he was very honest. Charlie's a very honest guy and wanted the company to be honest. He wanted us to be fair and that kind of stuff. He always thought that he could out manufacture anybody, and so the key was getting the right products. And that's what he looked to me to do. And frankly I think they got too-- I always loved skunk works. I love to have the engineers feel that they could invent something new. That kind of disappeared after I left, because they got very regimented in how the new product development forms and all that kind of

stuff. And I don't think it worked real well. I think Jerry Sanders had a right concept of marketing [semiconductors]. I really adopted this. Jerry looked at our customers as distributors of our technology, not as end users. Because he realized that nobody eats semiconductors. I mean, they have to be put in something that's useful. And that was a relationship, for example, that I had with Jack Tramiel. Mean, Jack owed us enormous amounts of money. And if you recall, in the early days of Commodore, Jack was being sued by everybody for nonpayment of receivables and all that kind of stuff. And I remember having dinner when he was interested in buying our kit-of-parts [for his Commodore calculators]. And we went to the dinner. What was that restaurant that became a Hilton Inn near the corner of First and near 101? I don't even know what it is now.

Hollar: Wasn't Ricky's, was it?

Kvamme: It wasn't Ricky's, no. I'm talking way down in San Jose. And we were having dinner down there and Jack said, "Okay." We agreed on pricing. He agreed on the price and all that kind of stuff. He said, "Well, shall we have the lawyers make a contract?" And I said, "Oh, Jack, do you need a contract? I don't need a contract." He says, "You don't?" I said, "No." I said, "I just have one condition. If I ship you the parts, will you pay me?" He said, "Yeah." And he reached across the table and that was our deal with Commodore. Because, everybody who had a contract, they always figured out a way out of it. It was a useless exercise in contracting. And, Jack, I mean, he had that thing down to a science. We'd ship him the parts. Three days later, he'd have them in a calculator and ship against an LC [letter of credit] and he'd pay us in 30 days. He had his money way before he had to pay us. But then as the pricing started to come down, $39.95 wasn't holding and it went to $29.95, $19.95, his business was slacking off and he needed better pricing from us. And so, the original contract, for a gazillion parts, at whatever the price was, it changed with time. Now, we were, of course, making progress on our costs also. And, yeah, I shared that with him. But he was successful and I was successful.

Hollar: And it worked.

Kvamme: And it worked. He was a distributor of my technology. And so a lot of people had a lot of ugly Jack Tramiel stories. I had a wonderful relationship with Jack. I mean, wasn't many guys who showed you their Auschwitz number on his arm. I mean, he had an interesting background. Or, no, [I think it] was a Polish camp that he was in. But he had the number emblazoned in his arm, because he'd gone through that. So he was a realist. And, matter of fact, I still see his sons on occasion. I haven't seen Jack for a good long while. I say good long while, maybe two, three years. But we had a good relationship.

Hollar: You sort of gave the intro to Apple and how you joined it. It was 1982…

Kvamme: Yes…

Hollar: …when you went to Apple?

Kvamme: …at the end of the year.

Hollar: What was happening at Apple at that point?

Kvamme: Well, they were getting ready for some key introductions. They were not ready. They were selling Apple II like crazy, and that was the product really at that time. But the Lisa was in development. The Mac was in development. And they were supposed to be introduced in June of '83, both of them. And the Mac IIe, which was an upgrade to the Mac II, excuse me, the Apple IIe was also in its final stages of development. And that was supposed to be introduced, in the spring, before the Lisa and the Mac. So there was a lot of development activity. The company was divided into I think seven or eight different divisions, Mac, Lisa, II/III, the III wasn't selling well and so that was also an issue, and then peripherals division. What were some of the other ones? I don't remember, but there were a number.

Hollar: Were you doing any software at that point?

Kvamme: Actually there wasn't a software division at that time. That happened later.

Hollar: When you came into the company, were you told at that point there was this product roadmap and these new things called Lisa, Macintosh?

Kvamme: Oh, yeah, yeah, I mean, actually those-- I was shown those before I actually agreed to join and that some of these would have application in large corporate situations. They were also thinking about large-- the college level. The Apple IIe was being distributed into K-12, mostly high schools. The Kids Can't Wait program had already been introduced, where we gave a computer to every high school in California. And so there was a follow-up of that. So the education piece was also there at that time.

Hollar: It's 1982. The IBM PC has been introduced at that point, right?

Kvamme: Mm-hmm.

Hollar: Of course, the Apple II had been out for a long time and been successful. What was your thought about this new industry called personal computing and the opportunities it presented?

Kvamme: Oh, oh, it was very clear to me that this was going to be a big deal mostly because I had guys at National who were carrying computers in the back door, doing analysis on it, keeping track of customers. Even before I left Semiconductor, the guy who ran distribution, a guy named Ed Ducey, had a computer program to keep track of all the distributors. So he had his own little database. He didn't have to wait because, in those days, if you wanted a new report from IT, it took forever. You had to meet with the guys invariably, because it wasn't their [computer] report. It wasn't structured exactly the way you would want it. You got it right about the third time about how the report ought to look. And then you'd wait for the tabs to come down, the big sheets of paper. And so there were a lot of people using PCs or Apple IIes for applications that, in most cases, they'd purchased themselves personally. So there was no great secret that these things were valuable. How valuable was always a question about how wide would this get.

Hollar: You mentioned you'd already been selling a lot of product to Jack Tramiel and Commodore was already successful with its PC. Did that also help you see the gaming side of it? Did you really see, at that point, that there were personal uses for the PC?

Kvamme: Yeah, because a lot of companies, or, a lot of individual people also were starting to keep track of their own stuff that way, doctors, dentists, lawyers. A lot of people were doing it and kind of that leading edge of folks. The early adopter phase you might call it, from using marketing lingo, was clearly there even in that early, early day. And people were figuring out how to do new things with these things. But, again, it was all back door kinds of things.

Now, IT departments were not particularly interested in personal computers. By that time, the hierarchy of 3270 terminals were on everybody's desk and they all hierarchically headed up into the central mainframe thing. And so one of my first things that I was asked to do was to introduce us to the guys I already knew <laughs> in that [Information Technology] field. And, for example, now it's a year later but I remember the intro of the Mac to that crowd. One of that crowd's biggest problems was training, and the mouse had really changed all that. The necessity for being a computer programmer to use a computer was slipping away. Matter of fact, I used to use the illustration that I remembered as a boy that when we bought the 1949 Pontiac that was automatic [transmission] now mom could drive. You didn't have to know how to shift gears. You didn't have to know all the stuff. You just put it in drive, and you drove. And that was the analogy I used for mouse-based computing. You didn't have to know all those C slash, all that kind of stuff. It was all hidden from you. You just pointed at something that you wanted to open and you clicked and it opened. And so when we introduced the Mac-- I'm getting a little ahead of the story. But when we introduced the Mac, for example, to these IT executives, we actually took them [to a computer lab setup]. We arranged to get about 30 of them [early Macintosh computers] from the Research Board crowd. And these were large, large corporate users. And we just ran a training session. Steve sat on the desk in front of the room in his lotus position with his legs crossed and talked to this group. It was the funny thing, <laughs> because they weren't exactly used to that. He came in, jumped up on the desk, crossed his legs and sat there and talked. And we ran them through a training session

and just had them do this. Because that was a huge problem that they always had, getting enough programmers to do everybody's program. And everybody was always angry about the fact that programming took too long. So there was this natural thing going on. You knew that, times, they were a changing.

Hollar: Did you know Steve Jobs before you went to…

Kvamme: No.

Hollar: …Apple?

Kvamme: I met him when they were interviewing me. And we talked about what my job would be, and I told him what my background was. And frankly I was very honest with him about what I didn't know anything about, because I didn't know squat about consumer marketing. But I said, "You know, I think I can learn this." And products are product. And the nice thing was [my background] - part of the reason I think we kind of hit it off was I really was a product guy. Another story. When we introduced the Lisa, I arranged to have-- because we had to have something that looked large corporate user kind of thing because Lisa was not a consumer product at all. It was the upper end of what was going to be the Mac, Lisa line. So we arranged with American President Lines up here to have an intro with John Cullinane. If you remember, Cullinet Software was one of the big database management systems. And they wanted to have a tie with Apple. They thought that would be good for them. So I arranged that. And so we went up to shoot some footage up there, at American President Lines, on their raised floor, with their IBM computers. And we step on the floor and Steve says to me, "This is the first time I've ever been in a computer room." That's what he said. And so I said, "Well, you know what these are." A 370/165 I think was sitting there. And I said, "Here's the console. And this is the-- and all the stuff is underneath this raised floor." I said, "But you want to see something interesting?" And I opened the skins [the doors into the computer hardware]. And if you remember, the inside of those computers, in those days, looked like a rat's nest. There were wires all over the place. It was point to point largely for capacitive coupling reasons, and there were some technical reasons for that. But cameras are rolling and what you hear Steve say is, "What is all that shit?"

Hollar: <laughs>

Kvamme: <laughs> And I said, "Well, that's how these things are put together." And it had an incredible impact on him. I mean, it was really something. He decided that IBM doesn't care about products, they're only a marketing company, they're not a products company, I [Steve] could beat these guys because they don't care about what a product really looks like, it's all veneer. It was really interesting. I mean, again, he must've been thinking that before. He must've torn into a PC sometime or another, because the PC was out by that time. But I'll never forget that, because he just stood there almost in

amazement of how this company could market this thing for these kinds of margins and it looked like that. Like I said, there was some defense for how it looked but, boy, not in his mind. I mean, it was just a big batch of wires that nobody could ever really fix and it was a mess he thought.

Hollar: Well, that says a lot about why the inside of an Apple II is simple and elegant. That continued right on through the Macintosh and the other products, didn't it?

Kvamme: Yeah, yeah, I mean, you take the, I mean, Mac-- when we introduced the Mac-- this is a story I've told a number of times. Maybe I've told it to you. But I get a call from Roy Weaver who's running distribution at that time. About three weeks I think before intro, Roy tells me, "Steve was just here." I could just tell by his voice that this was not good news. And I said, "So what happened?" to Roy. He said, "He rejected all the packing boxes." I said, "Why'd he do that?" "They're not the right white." If you remember, they came in a white box. And the white wasn't right. So we had to redo all of them. Now, Roy, I'm sure, was trying to get me to say-- to overrule because I could've. But I said, "We got to make them the right white." Now, what that was showing was Steve understood that on a store floor our product was sitting there in a beautiful white well-done box next to a brown corrugated piece of cardboard. Think of the difference. And that's what he cared about. He wanted that product to be right not from only the inside. The packing carton had to be the right white. But that's Steve Jobs. You buy an iPhone today, I mean, what do you see? You see exquisite packaging, and he knows that that has value. And many people didn't understand that that had value. They wanted to dig in, get the computer I mean, the top thing that you ran when you opened the Mac box was how to handle this package, how to unpack it. Nobody did that in those days. But he showed take this first, you got to read this first, then take this, then do this, then plug this in here and make it simple and the training manual is that thick. And if you remember the first ads, we showed that book dropping on a page and then we dropped the MS-DOS manuals and they were this large a stack of manuals. "It brought computing to the rest of us," as he said.

Hollar: So you join Apple in late '82. And things are happening bang, bang, bang, right?

Kvamme: Yeah, yeah.

Hollar: You've got these Apple II and Apple IIe lines. You've got the upcoming introduction of the Lisa and the Mac in '83. So talk a little bit about that kind of just incredibly rapid 12 months of things just happening.

Kvamme: Well, we were also-- the company was growing very, very rapidly, heading for a billion dollars that year and, or, just finished a billion I guess and was heading north of that. And there was just a lot to do, staffing up, getting more stores involved. The store situation was also sort of changing. It had, of course, been almost all single stores. But then the ComputerLands of the world-- Businessland was starting. That's how I met Kevin Compton actually. Later attracted to KP [Kleiner Perkins]. And so the

nature of the distribution thing was also changing, because it was very clear that this thing was going to break out of its mold and there was going to be a demand for a conglomeration of these stores. So dealing with them, dealing with the pricing was critical. Obviously margins were very, very important. But also international rollout, getting the stuff in all these languages was big-- so there was a lot to do. And the advertising budget was growing. I mean, as I recall, the marketing budget, the last year I was there, it was something north of 300 million bucks. I mean, there was a lot of money involved. And then by the summer of '83, we're talking about the Mac intro. We now know it's not going to happen in June. The Lisa intro has happened, and it was an exciting intro. But the product didn't have a lot of software. It didn't have a lot of what it needed. And so we talked about how do we advertise. We had a great advertising agency, Chiat/Day. Jay Chiat was very involved. Now, again, there's another guy. He had been National's advertising agency. So I knew him also. So a lot of the cast of characters were people I knew.

Hollar: Did you bring in Chiat/Day?

Kvamme: No, no, Regis [McKenna] had. Oh, and Regis was there. Regis, of course, had worked with us at National. He was an employee at National in the early days.

Hollar: Regis McKenna?

Kvamme: McKenna, yeah. So, again, there was a lot of Old Home Week kind of in the characters that were over there. John Vennard was there running a certain section and all. And, of course, he had been at National and all. But, anyway, in putting together the thing, Steve, again being into excellence kind of thing, had somehow met Ridley Scott. I don't know how. But Blade Runner the movie had been heralded. And he had talked to Ridley Scott about shooting our commercials for advertising the Mac and the Lisa. And I remember the meeting in June. And this is before Sculley was there, before I'd hired Bill Campbell. Maybe Sculley was just about ready to show up. And the Lisa ad was going to run in the fall pointing out what the technology was. And then the Mac ad was going to run across all the bowl games on January 1, and you could buy time such that it ran almost the same time.

Hollar: This was the famous…

Kvamme: …1984 ad, yeah. But at that meeting, we talked about it being based on 1984 now. Now the intro had slipped to 1984. Remember the big concern was obviously everybody was going to focus on 1984 in their advertising. So we had to hit January 1, because that was going to be a very popular theme. And it was going to be-- so we had to do it right. We had to be early or else it was going to be a really worn out theme. So we get the two ads. I forget exactly what they cost. But it was $7 or 800,000 to get them done by Ridley Scott in London. The Alone Again ad runs, it's black and white also, advertising Lisa. And it didn't do well. It just didn't do well.

Hollar: When you say it didn't do well, did you test it?

Kvamme: No, no, no, Lisa sales didn't happen. And the business was slow if you remember, end of '83, there was a recession kind of coming on. Apple II sales were looking a little weak, also. And we were in struggle-ville for a while there. So we didn't run the ad that much, and LISA sales were flagging. There was no question about it. And so, but in the October sales meeting in Hawaii, we showed the guys the 1984 ad [introducing the Mac]. They went nuts, the sales force. They went nuts. They were up on the tables, jumping up and down. And there was-- it was just sensational.

And so, then in December there's a board meeting. Now I did not attend board meetings. I was not on the board. I was not invited to board meetings. But by that time, John Sculley's in the company. And he had arranged to have some lifestyle ads for the Apple II run, which had people sitting at a desk and then going out and shooting some [basketball] baskets, full color and that kind of stuff. Well, the board decided that we couldn't afford to run the 1984 ad. We didn't have the money. And we, I mean, I must admit it was insubordination on my part. There's no way I was going to not run that ad. I was trying to figure out how to do it. We'd purchased-- by this time we knew the across the board on January 1st was going to be too expensive. So we'd purchased two minutes in the Super Bowl, which was later in the month. Now we were really worried, because now we were going to be late with a 1984 message. And what's going to happen? Everybody's going to be on 1984, we'll have an old message. But the ad was so well done. And the sales force loved it so much; we've got to run it. So time's slipping on. And fortunately, we interpreted the board's directive that we had to sell it and not lose any money. And a minute was, I still remember the number, $905,000. And so we were getting offers and all. Somebody bought a thirty [second piece, as I recall], so we had a minute and thirty left. And time's running out-- January's-- and we still have this minute, thirty. Friday afternoon before the Super Bowl, and we-- you had to distribute something, I don't remember how that all worked. Jane Richardson comes up. Bill Campbell and I are sitting-- by this time I've hired Bill Campbell. And he had been at the sales meeting in October. And we're sitting in my office, and Jane said, "I've got an offer for the minute for the Super Bowl, $700,000. So we're going to have to write of $205,000." And I don't remember this exactly. Neither Bill nor I remember this, exactly. But one of us said to the other, "Did she say anything?" <laughs> And we said, "We didn't hear you, Jane. Go away."

So we sent her out of the office, obviously rejecting the thing. And, of course, the ad runs [during the Super Bowl]-- now we'd tested the ad that week, in Ft. Lauderdale, which was the headquarters of IBM PC, just for a joke-- just for laughs, okay. And the thing we knew was, the thirty didn't work. The thirty didn't tell the story well enough. You know how in advertising, they do a long ad and then they do short ones. Today they're doing even fifteens against thirties. But, so it's doing a thirty follow-up to a minute, because you kind of remember the rest if you'd run the-- if you'd seen the minute long enough. But alone the thirty didn't-- And I frankly don't remember what finally happened to the last thirty. I don't even remember what we did with that. We could have written it off. I don't know what happened. But the minute runs; the reaction is incredible. We get phone calls the next week of people who want us to run it again. We said, "You can run it again if you want to. But we ain't paying you." And so, T.V. stations around the

country ran that ad a number of times in the next week or two, not on our nickel. And by that time, the Mac had been introduced because it was introduced the Tuesday after Super Bowl. I think Super Bowl was January 21st, and the ad was for the 23rd [product announcement]. And the area where we got super lucky, to my knowledge, to this day no body ran a 1984 themed ad, but us. No body. And that-- that's hard to believe really when you think about what that was. But I think the negative connotation of 1984, I think a lot of ad agencies stayed away from it as a concept for an ad. But that was enormously lucky. We didn't know that. And imagine what that would have been like had you seen a dozen different 1984 ads before that. It wouldn't-- I don't' think it would have had the impact, even though it was a phenomenal ad.

Hollar: Oh, and of course, what you had managed to do was take the negativity of 1984 and turn it on its head.

Kvamme: That's exactly right. And that's what that ad had done. And I also-- what I'd done when I got the storyboards, before it was actually being done by Ridley Scott. Because I think he did it in, like September. We decided on it in, like June. I'm not sure of these dates, but it was around that time frame. I'd gotten the storyboards. I brought them home one night. And I had a friend who was a movie director, at that time. And who lived up toward Santa Cruz, I drove them up to his place. And said, "Is this a good story?" Because I knew nothing about advertising. And he said, "That's a sensational story." And he pleaded with me to have him do the ad. I said, no we-- and I couldn't tell him we had Ridley Scott doing it, because that was secret. I said, "That contract's already let. I'm really, really sorry." But I-- and he's a personal friend; he's a personal friend to this day. But he saw the storyboards and-- so that helped me realize that this was going to be special. And so--

Hollar: Were you and Steve-- as we now know, looking back on it, marketing and his end to end product sensibility was one of the things that made him unique. And here you were, Executive VP of Marketing, were you working together, closely? Was he really someone you were always talking to, or he was always taking to you? How did that work?

Kvamme: No, no I wouldn't say that. You know, we saw each other regularly, particularly at the product meetings, and when we were doing planning. Because, basically, how it worked was the manufacturing operations sold the product to me. I was responsible for distribution, taking them out of the manufacturing site, through the distribution channel, and getting the most I could for them from a selling standpoint, a sales standpoint, and for the outside advertising, and all that kind of stuff. But, Steve was so focused on product that he spent most of his time, most of his waking hours, worrying about that thing coming out right, you know, and being the right product. Now, we had some conversations about that. Because one of the things that Steve did that was totally unique in that day, and I always marveled at it-- You know Apple was an assembler of other people's technology, when you think about it. As a matter of fact, most systems companies were assemblers of semi-conductor, memory, display, keyboard to an extent, all of the-- when you're speaking hardware. Obviously, software was a different story.

What he did was he stayed in incredibly close touch with hardware vendors. So he knew what was coming. And he was willing to take the risk of being sole-sourced, so he could be first with new technology. If you compare that, in those days, with HP, who insisted on everything they used being second-sourced, they were always late - they were never an early adopter of technology, as a result. It was a very conservative approach, but it differentiated the companies. Now, you also knew, because we sold products to Apple, from my National days, and I stayed in touch with their design engineers at National, National screwed up on an occasion or two in selling to Apple. Man, they went in the penalty box. And it wasn't two minutes, it wasn't five minutes, it was a major-- they got blocked out of the game for a few cycles, okay. So, I mean he really understood his vendors. He was willing to take that risk, but boy, you had to perform. And it wasn't pretty if you didn't perform. But, by the way, he had very few alternatives, if you didn't all perform. And he knew that, also. And that's largely what happened with that Twiggy drive, and that's why the hard shell media was such a savior for that. But it was going to take awhile. And he made the deal with Sony to get that going. And if you recall, that set the standard for 3.5 inch [hard shell floppy disks]. Because there were 3 inch, 3.5 inch, 4 inch hard shells. And the fact that the Mac went with that 3.5 inch set that standard.

Hollar: It made the industry.

Kvamme: It made that industry and made that form factor, happen.

Hollar: So the Macintosh gets in-- sorry.

Kvamme: But, now having said that, I mean, I remember being up at Steve's house when he lived in Los Gatos one day and we were going over some stuff, and he then said, by the way, Floyd, I'm dating a new girl tonight. And I want to play for her-- and sing this song to her. And he goes to the piano, and he-- he was a very accomplished pianist, by the way. And he sings this song to me. And he says, "What do you think she'll think of it?" And I said, "Steve, I really don't know." But he would do those kinds of things. He would show-- you know talk to me about-- So, I mean, I always thought that was kind of special. Again, I didn't go camping with him. I didn't have many dinners-- I had dinner with him, I think, once or twice in the house out in Woodside. But, I mean, in '83-- many people think the iPhone idea was a revelation that came in the late '90s. He took me to a skunkworks in Los Gatos where they had the skunkworks for a phone that-- what was it called? Frog Design was working on. Now, they were working on another product for him, but he wanted to-- he was into the phone thing. But, he didn't like what it would look like, so he wasn't going to introduce a kludgy thing. Matter of fact, my first mobile to mobile phone call that I ever had with anybody was with Steve Jobs. He called me, and I'll never forget his reaction, he says, "Are you driving?" I said, "Yeah." He says, "I'm driving, too." He says, "This is really groovy." You know, and it was, like, 1983, or something like that. But, he had that in his mind, because he saw communications as being a really key thing. But he wanted it to be special. And it took, what, fourteen years for that idea to gel into something that could be done. But you can't say that Steve wasn't thinking phones, because I

saw it in, like ’83, maybe it was early ’84. Because I left the company in mid-’84, so. You know, that’s what he was like.

Hollar: So let’s cover that period from the introduction of the Mac until you left Apple. The introduction happens after the commercial. What kind of success does it see, at that point?

Kvamme: It was a little slow, but what we did was, we introduced the college program. And a guy named, Dan’l Lewin, was responsible for that. He works for Microsoft now. But Dan’l and I introduced the college program. And we got-- the deal was that we’d sell to colleges at a special price, 1000 bucks. And we closed the deal with Drexel University, that was the first one, for-- I forget how many-- it was in the thousand, or so machines. And then another big university deal. Then we got another big deal based on that introduction with the Research Board from DuPont. I think that was 6000 machines; I’m not sure. It was a big deal. But, you know, there wasn’t a lot of software. So the early sales were a little slow during that early period. And then I left shortly after that-- after intro, so. Not shortly, but awhile after intro. And he-- you know, so, like anything else, it took off a little slowly, but then it just-- suddenly just up ticked. It got to a-- some magic point and suddenly everybody-- it became what Apple already was, the thing to have. And I think, frankly, the ’84 ad helped that. On the whole, people were real excited about those products.

Hollar: So what took you from Apple to Kleiner, and to venture capital? How did that happen?

Kvamme: Well, I guess one way to answer the question is, they made me a deal I couldn’t refuse. But, I don’t talk about this a lot, but John Sculley was not my favorite guy. I wasn’t very impressed with him. I think he almost killed the company, ultimately. He was not a product guy. He was a marketing guy. And we were a products company. And it was-- I mean, think about it. When I was there, if you wanted to walk into a store and buy an Apple computer, we had a solution for you, as I recall, at $995, $1295, $1495, $1795, $2195, $2495, $2995. We had a solution all the way up to 10 grand for the LISA, by the time that all happened. There’s no question that the higher end of that range was the most profitable. Because the amount of real cost for those increments of a few hundred dollars was de minimis. But you got people in. By the time John was there a couple years, the first offering was $2995. And, yeah, they were looking more profitable, but I don’t think it was any way to run a railroad. Nobody was developing software for them. And-- because there was no volume. There was a few high end users who were nuts about it. And I’m somewhat reticent because I don’t like to criticize people. But John was the wrong guy for Apple. And he proved it when he let go of Steve.

Hollar: As you look back on it now, sort of seeing Apple before, and then inside, and then afterwards-- what’s the explanation for that moment in Apple’s history, John coming in and doing what he did?

Kvamme: Well, exactly as has been reported, the-- I mean-- Steve was of the opinion, and there was nobody to-- I mean, I think everybody in the company was kind of on the same page, that this was going to be a consumer products play. Now it didn't turn into a consumer products play for a long time. We had to figure out how to get-- and we therefore aimed, while I was there, at marketing departments in large corporations. Because there ware things that you could do-- I mean, just Steve's whole thing about fonts. He was so right, it was incredible. Things printed off computers, until Macintosh-- until the LISA and Macintosh, were dull. They were awful. You know, single font and a few dots--

Hollar: It was the IBM Selectric typeface, just--

Kvamme: That was it.

Hollar: transferred to--

Kvamme: Yeah, you know. And so, marketing departments loved the Mac. They could do things that looked like they'd done something original. And they choose a font-- and there wasn't a lot of fonts in the early 80s, but that lady that did all the font development also, she was-- I don't remember her name. She was terrific. And so, it was possible to sell through those things. And the consumer thing, of course, happened in time.

But it wasn't all about just the marketing. It wasn't all about the pizzazz. It was, you know, the product had to have value. And Steve understood that and liked that about it. I mean-- and Steve just really rebelled. Let me tell you a story that I don't think I've ever told anybody in any setting like this. I've never done it in a conference. Just before the Mac was introduced, I believe it was just before, but a very short time before-- It may have been in January. It may have been just after it was introduced. I'm not really sure, but it was a very tight time. We get a call from AT&T. And they wanted to make a deal. And sales were crappy at that time. So we said, "Hey, let's listen." What are they talking about? And they wanted to come out, and they wanted to make a deal. I don't remember whether it was going to be a private label deal, or just tying together the two companies, this kind of stuff. They send out an entourage for a secret meeting about some sort of an arrangement with Apple. And so we sat the key guy, who was the product-planning guy for AT&T's computers, down at the-- at a Mac. And, I mean it's funny if it wasn't so tragic. Here's the guy who's doing the product planning for personal computers for AT&T, Steve sits him down and says, "By the way, what kind of computer do you use?" "I don't use a computer." Well, Steve shows him how to mouse and then, Steve basically turned over to someone else, as I recall, even how to run the thing. Here was a company that had marketing guys that had no knowledge of the product at all, from a personal experience, doing the product planning. Steve's interest in doing that deal with AT&T was zero because of that. I mean he loved the products.

And we were all product people. I mean, take Mike Markkula. Mike Markkula's a products guy. He loved the products. And, I mean, in the early days of Apple the product-- some of the software was written by Johnny Appleseed. Do you remember that? That's Mike Markkula. That was his pseudonym for-- because he didn't want to put his name on it. But, so the fact that we were product-- Steve was a product guy, and all of us were product guys. We loved-- we really did maybe believe that if you build a better product, the world would beat a path to your door. But, my role, therefore, was trying to find places to sell all these things, giving the-- And see the advert-- some of the advertising, and some of the marketing materials were really what we used to call "push pull", namely, we'd push them to the dealer, then we had to pull people in to the dealer. Because the dealers didn't do a lot of going out and selling. We had to bring people to their store. And so, just developing all that was keeping us busy, and trying to keep the stores busy, and getting them the volume. I don't know if that answers your question. That's what we did.

Hollar: Well, and it sounds like there were increasingly differences of opinion between product people like you and John's orientation as a CEO and what he wanted to do.

Kvamme: Yeah, well because he was very much a marketing kind of guy. I mean, if you look at the ads that he did for the Apple II for that Christmas, those lifestyle ads, I mean they are very non-memorable, in my mind. Because they weren't really-- they were saying that you have to have one of these to be a hip person. And I, for sure, am not a hip person. And, I mean, I wanted to see value for this thing. And going out and shooting basketball hoops with my computer screen running there, I never got the connection, frankly. I mean, it was-- a lot of people are into lifestyle things. They buy certain brands because that kind of stuff. That's just not who I am. Now, Steve drove Porsches because he felt they were fine products, not because they were Porsches. They were fine products. And he liked, you know, -- there was some music thing he liked because they were finely designed things. And so he was a products guy.

Hollar: Yeah. Yeah. So, through a combination of your not being completely happy with that situation, and then being approached, I take it, from Kleiner, you decide to make the change to venture capital.

Kvamme: Yeah.

Hollar: So how did that work?

Kvamme: Well, Apple-- excuse me, KP had just raised the first mega fund, the first greater than 100 million dollar fund. And they had committed to adding general partners to do that. And this was KPCB III. And so, John Doerr called me. He had learned of me. And he knew that I had semiconductor background, mainframe computer background, and now personal computer background, which was a nice triangle. Matter of fact, he told me one time, he didn't know of anybody else on the planet who had all three, at that time. And I wouldn't doubt that's probably true, at an executive level. So he asked me to come over. I was not an active investor. I've never played the stock market. I've never done much of that kind of stuff. I'd

always been heads down in the job of mostly product-oriented kinds of things. And how do you sell it? How do you market it? What's the messaging? And that kind of stuff. But, the variety opportunity with what was happening in personal computers was terrific. And the first thing they-- so I joined them. And then they made me a fabulous deal.

Hollar: Let's talk for a moment about just the nature of venture capital, itself, in the early 1980s. So, it had been launched. It had been launched here in the Valley. And was it doing well? Now, looking on 25 years later--

Kvamme: Yeah, I would say it was doing well. I mean KP was doing well because KP-- in their first fund, in '72, had launched Tandem Computers and Genentech, I mean. And the other six investments hadn't done that well. But these two had done so well. And the formula was so well set, that a few good ones really would rescue a fund. And then the second fund had had a number of real big successes, both on the drug side, Hybritech and those, and on the computing side. They'd done Compaq. They'd done Lotus, which was a software entity of some fame, at that time. As a matter of fact, as soon as I joined, I was asked to join the Lotus board, to be KP's person on the Lotus board. So, and because I'd sold in Boston [when working for Fairchild Semiconductor in the early 1960s], I knew a lot of people in Boston. And so that was kind of natural. So I was the Boston partner for a little while, actually also. Commuting out there to go on Lotus board meetings. And we did a thing called Bachman Systems, which was out there. And all-- and the firm had done some other things, also, in Boston.

But as far as analyzing things from a investor's point of view, I was, again, a products kind of guy. And, frankly, I made a number of early, just really bad investments. And the one I'm most embarrassed by, because this guy Chaz Haba I mentioned earlier, had gone into the software business with a group of products that were on the market. And I knew Chaz. I knew his ability to sell. I knew his ability to market. And so I was drawn to that. And we invested in it. Fortunately, we didn't invest very much. But the products were lousy. And since I wasn't a software guy, I didn't see through that. And so I went away from my strength of understanding product and talking about product. And so-- and software was a big area of investment at that time. And sitting on the Lotus board, I saw the value of software, but I later got involved in a couple of other software investments that turned out pretty well. But that first one was an example of, hey you've got to stay to your roots. What do I know? And I knew products. And I had to admit; I knew mostly hardware products and hardware things. Because I also made an investment in a deal that I'd make along side Tom Perkins. We both got involved in a semiconductor capital equipment deal. And because I'd talked to the guys in the industry, and we had a leading guy from the industry proposing this thing, and it turned out that it was way ahead of its time. So that was also an issue. I knew the application.

But those two examples were examples of things that I realized that I had defied Jobs's law. The product has to be insanely great. And you have to know that. And that's hard to do when it's out of your area of expertise. So-- and the other thing that was really hard for me in the early days is, I'd run development

programs. I'd run a lot of development programs. And when you're there every day, you know what's going on in development programs. When you're there, even once a week, or once a month, it's a lot different. And so you had to really transfer the vision that you saw in a product, and make sure that that person had it; matter of fact, I invented a term for my companies. There had to be one guy in the company, didn't necessarily have to be the CEO, who was the Keeper of the Vision. Because that's what Steve was. That's what Bob Widlar had been, in earlier days. There was always a keeper of the vision. I didn't call it that back then, but that was what I did. So it took me probably a year and half, or so, to really understand how the business really worked. And how we would make the kinds of returns that we needed to make.

Hollar: And did you have a specific portfolio going into it that you wanted to try to build? You talked about these three areas that you were working on

Kvamme: No, because in those days we were being approached by entrepreneurs. And we'd all talk about them. Fortunately, we had a uniform thing. Everybody had to agree on every investment. And then, somebody went on the board. That was 80% the case. If it was an East Coast investment we always had to have a co-investor back east that was our guy, you might say.

Hollar: And so you're joining a partnership where there are people who'd been there and who are well established and know the process.

Kvamme: Yeah, but it's very small. Kleiner Perkins-- Kleiner was phasing out. Perkins, Caufield, Byers, John Doerr, Jim Lally and their secretaries. Period. Oh, and Mike Curry the finance guy. So there were-- I mean the thing that was surprising to me is there were ten people in the whole company. It was tiny. Maybe fifteen people by the time you counted executive assistants, what we called secretaries in those days. So it was tiny. And when you wanted advice on something, you called in a few experts. Let them be VCs for a day. And you learned that with time. But then the other thing is you also learned that the business was not primarily investing, it was working with the entrepreneurs to help them develop the company. And since I'd had a lot of VPs and Exec VPs, and-- I once counted that of the people who worked for me at National and Apple, something like 26 of them became CEOs in the Valley. And so I'd worked with a lot of guys that knew how to run things. But you had to keep that going.

Hollar: Can you name some names of people who were in that 26?

Kvamme: Well, Mike Markkula would be--

Hollar: Mike Markkula's one.

Kvamme: …certainly one. Bob Swanson. Jim Diller in the semiconductor side. There's so many of them that went out-- I mean, I'm on the board of Balu Balakrishnan's Power Integrations. He worked-- Mostly in the semiconductor field, most of the guys. The-- and a lot of them with smaller companies. But I'm forgetting a lot of major ones, I know.

Hollar: I didn't mean to put you on the spot.

Kvamme: Jack Gifford.

Hollar: Oh, sure.

Kvamme: Jack Gifford worked for my organization. Obviously, Bill Campbell, now ran into it later. Ron Conway, I hired Ron Conway into his first job in the Valley. I'd have to look at the list. I don't think about those things that often.

Hollar: It's a great alumni group. So, back to this, what you were talking about. Tom Perkins, I've heard him describe this as the KP way. It's what you said, it wasn't just, "We're going to invest in your company." It was, "We don't invest unless we think you're a company we can get in there and really help with and turn into a great enterprise." Was that important to you, that approach?

Kvamme: That was very important because that said that products mattered. It wasn't only about making money, it was also-- Yes, making money was important because that's what your customer wanted, your investor wanted. But it was about the thrill of having a variety of things to work with, and to develop people. And that was exciting. And, I mean, you look at how Tom had developed Jimmy Treybig. It was-- that was terrific. And that was very, very important to me. And I really enjoyed it.

Hollar: And Herb Boyer.

Kvamme: Yeah, Herb Boyer was another example, yeah.

Hollar: So how did you-- How does one, from a historical perspective because it's part of what we're interested in, how does one make that transition to become a venture investor?

Kvamme: Well, in those days, almost everyone came out of an operating role in industry. There was no school that taught you how to be a venture capitalist. There wasn't-- that wasn't an elective in an MBA school. So virtually everybody in the business was an engineer who had been in a product development

phase-- And at KP you could argue that only Frank Caufield had not had a formal, you know, engineering position. I believe he has an engineering degree. I don't remember right now. But he had never actually managed the development of products. Jim, John, Tom, everybody had. So it was very technical kind of thing. And that was what was important at that time. And you-- putting a few dollars into this thing, you could also see with a very few dollars - See, the big deal with bringing-- what the firm and what Tom called "bringing the risk up front". The story you tell is, if you came in and said that you have the cure to cancer. I don't need a sales organization now. I don't need a marketing organization right now. I don't need a manufacturing-- I only need to know whether you have the cure to cancer. So you put all the money on that. So, a lot of these companies were really development things, and then, if it worked, then you poured money in the second round. And actually, we did a study one time and we actually made more money in second round investments than in first round investments because they were larger. And they were backing the ones that the first round had shown that this guy has the cure to cancer, or has something that's workable. So the logic of the business is very straightforward.

Hollar: And that also minimizes the amount of risk you're putting in up front.

Kvamme: Oh, of course, yeah because you're doing the right-- you're doing the right stuff. You don't need a whole team to do that. Now, what happened in the late 90s, of course, was that-- and virtually all investment was in technological capability. They were tech risks. Can they, in fact, build a chip that's this fast? Can they build a drug that really does this? Can you build a system that does this communications thing with those parameters that are being promised? In a world where everything was improving by a factor of two every couple of years, anyway, or eighteen months if you used Moore's law, or that kind of thing. So the idea was, usually, does this person's suggestion that they can build something today-- that they can start building something today that's going to be ten times better when it's introduced two years from now, is that possible? Because those are the kind of numbers-- because the world was getting better. So if somebody came to you with an idea that was twice as good as what was on the market, that wasn't good enough. It had to be way more than that. And so you had to kind of test the credibility of that.

Hollar: What was one of the first investments where you felt your background and experience, your knowledge all came together with your partner's to really make something great happen?

Kvamme: Well, the one that I worked on that was handed to me very shortly after the investment was made, and I helped build the team, was Xilinx. Scott Brown, I helped them recruit him because he had worked for me at National as the sales manager. And he did a great job over there. Now that was John Doerr's original idea to invest in it. But John asked me to sit in on those board meetings before it was public. And I never formally went on the board because-- and John never formally went on the board, but Bernie [Vonderschmitt] was a great guy to work with. And bringing Scotty in there-- Scotty actually asked me to be the speaker at their first sales meeting. But, that was a fun project because it was moving away-- You see, people were doing that [using programmable arrays] for just mock-ups. And we had to convince them that this was the right product to stay with in the manufacturing stage. And so through that

transition, that was kind of a fun marketing and selling kind of exercise while that project was going up. And then, obviously, sitting on the Lotus board was also very, very informative. Because I replaced Ben Rosen because IBM was starting to use a lot of Lotus products and Ben was the chairman of Compaq. And they basically came to him and said, “Lotus or Compaq?” And they expected him to pick Lotus. And he picked Compaq. So he dropped off the board. And we had done that investment jointly with Sevin Rosen, KP had, again, just before my time, but I was asked to go back and sit on that board. And, like I say, that was a very good investment. So I immersed myself very early, except for things like the Haba mistake, in some existing companies that they basically handed to me. That first semiconductor capital equipment company, also was actually already invested in. And I was asked to join the board with Tom, so that I could introduce it to the semiconductor companies and understand that whole thing. There were actually two companies in that. So I phased in by doing work on, probably, four companies that they had already made decisions to invest in, but they hadn’t developed yet. And then, a couple of my own-- ones that I took over and introduced later on.

Hollar: And how did you find this? Was this satisfying? Was this a phase of your career you really--

Kvamme: Yes because people development I’ve always loved. And you know you get to work with exciting people. And I’d worked-- let’s face it, I mean when you’ve worked with Steve, when you’ve worked with Bob Widlar, when you’ve worked with some of those kind of characters in your past, that’s exciting. Seeing people develop is exciting to me. And I always loved it. I mean I had this practice way back at National. They’d say, “Floyd, you’ve got to help us talk somebody out of leaving our company, because they’re going over to do something else.” I used to say, “Why should we talk him out of it? I mean, if that’s better for them, why should we talk them out--?” We better find somebody-- if they’re that good that they’re being asked to something out here, we better find something for them to do with us that takes that talent and puts it to use. I mean, that’s the way I feel about folks. That’s why I’m proud of the fact that so many people became CEOs. I mean I had some small say-- and some its larger, in some cases smaller in others, but that’s fun, developing people.

Hollar: That’s a side of venture capital I expect many people don’t get to see, that you-- and maybe it’s because not everyone focuses on that. But certainly you did, and have and do.

Kvamme: Yeah, I mean, going into a board meeting-- this idea was given to me very early on by a guy on a board of a company-- We’d invested in a company called Gazelle in the early days of gallium arsenide. It was struggling. And we ended up putting three companies together, and it formed TriQuint, which is a very successful company up in Oregon, now, in the gallium arsenide field. Proving that you can tie three rocks together and they will float was our analogy there. But there’s a guy up there, and he gave me this idea. And I've used it ever since. And that is that before every board meeting you’ve got to ask yourself two questions. Number one, “Should we fire the CEO?” Because that’s the one person in the company-- you are not responsible for the management of the company, you’re responsible to have hired a management under a CEO. You always pray the answer to that question is, “NO”, that you got the right

person, but you've got to face, that's your principle responsibility as far as managing the entity. And the second questions is-- hoping the first question, the answer is no, is, "How can I help?" If you can't help, you shouldn't be there, I don't believe, on a board. And that's-- help means helping to develop the CEO, helping him pick the right folks, helping them wherever you can. Not that they're going to take all your ideas. You're not there every day. You don't know the thing that well. And that's why things like, for example, I stayed on the Lotus board for only a couple years, and then I got off. Because, you know, Jim Manzey, he wasn't looking for a board. To have a board approve leases on buildings and do nothing-- that was waste of time. So, you know, that wasn't what I wanted to do. So I always, now, try to make sure that I understand, at the founding-- or for the period where I was actively doing new investments. You know, what role do you want me to play on a board? If you don't really want a board, that's-- A, I'm not going to do the investment. But B, I'm certainly not going to sit on the board.

Hollar: How did you get involved in Washington and science and technology policy? What did you find, or what have you found attractive about that?

Kvamme: Well, you know, in 1992-- Let's face it, the Valley had nothing to do with Washington for all of the '60s, '70s, '80s, you could say into the '90s. Because, I mean, what we did overseas-- You know Fred Bielek rewrote portions of the Korean Constitution so that they could have duty-free kinds of things. So we knew a lot about those countries but Washington was a long way away. The only thing in Washington was, was they put out contracts and people bought things from us. But we didn't do any contracting. There was no ARPA contracts generally in the early days. We didn't know our congressmen and that kind of stuff. Had no involvement.

In '92 Clinton did something really interesting He realized that the Valley was different than San Francisco. Everybody used to come to-- politicians came to San Francisco, and you'd get the odd invite to attend something up there, but it was in San Francisco. They never came here. And, as I've said in the past, he proved something about a vacuum. Nature abhors it. He filled that vacuum, and the Valley got launched in that direction. In '96, when he was running for reelection, if you recall, tort reform was a big deal. And we did not like all the [law] suits that we were starting to get. And the Valley had been discovered by the politicians. And '96 is coming on. And Clinton's coming back. Clinton had vetoed a very important bill to us. And we were not happy. And we had helped a lot of people overcome that veto. The only override in his time is on tort reform. And so <laughs> my wife sees an article in the paper that says that the Valley was backing Clinton again in '96. Well, she didn't like Bill Clinton. She didn't like him in '92. She just thought he was a fast talker. <laughs> And so she calls me at work. Now you got to understand, the previous time she'd called me at work was like 1985 when my dad had died. She never interrupted me at the office ever. Probably I could count on the fingers of one hand, the number of times she interrupted me. She talks to my assistant. She says, "He's in a meeting." "Would you mind interrupting him?" I get to the phone <laughs> and she says, "They're doing it again." And I said, "Who are they? And what are they doing?" <laughs> I'll never forget this conservation. She says, "Have you seen the front page of the Mercury News? They're saying that the whole Valley is for Clinton. And you

know that's not true." And it was largely not true, not because of anything but tort reform. We were really ticked that he'd come up with backing the tort lawyers on this thing. And then the magic words came out, "Floyd, you have got to do something." And Bob Dole, who I didn't know from a rock, was the candidate. Jack Kemp, who I had met and knew. I was a member of a thing called "Empower America," which I'd been talked into by Tom Weisel, which really means you wrote a check to have Jack Kemp and Bill Bennett do their thing on Capitol Hill. But I wasn't that involved really at that time. I later became chairman of it. So that just happened earlier in '96, but I'd met Jack Kemp. And so we arranged to have-- I found out that Jim Barksdale [CEO of Netscape] was a strong Republican and we arranged to have a Jack Kemp thing at Netscape for the '96 election. This happened in, like, September of '96. And, of course, the election didn't go our way.

But what I did was, I got about 50 leading CEOs in the Valley that backed the Dole/Kemp group. Actually, John Doerr put together a group for about a dozen from the Valley for their [Clinton] thing. Actually, we ended up with five times as many as that. Because later then, our group grew to about 150-200 and their group grew to about 40. So the election happens. We win the Proposition - what was it? Seventy? Whatever it was. Tort reform for California. And John comes into my office one day and says, "You know, we got to face the fact that we haven't been politically involved at all. But the politicians are starting to find us. And they're going to screw us up, if we're not careful. Do you think your Republican group would join the Democrat group that we put together and form an organization to at least have our ideas-- and keeping this tort reform thing alive was a principle thing. And attacking the education issue. Do you think they'd do that?" And that's how TechNet was born. It was going to be bipartisan, Republicans and Democrats. And there would be a Democrat arm for fundraisers and Republican person for fundraisers, kind of thing. And so it got formed in the fall of '96, but didn't have its first meeting until the spring of '97.

The first meeting had to do with education, and I attracted Bill Bennett, who I'd worked with in Empower America, to come out and talk about it. <laughs> [John Boehner, then a Congressman, was also there.] And I'll never forget what he said, because we were then pushing for a national test for student education so you could monitor-- because Jim Barksdale was big on, "You can't manage what you don't measure." That was his big thing at the time. And Bill, I'll never forget this, he gets up. He says, "You guys are pushing for a national test. Let me tell you what your problem is. The Republicans hate the word “national”. The Democrats hate the word “test”. <laughs> You got a problem. It's just never going to work." But that's how TechNet got started. And as a result of that, we had our beginning-- the whole idea was to have limited number of issues. We went back to Washington and talked about education and we talked about tort reform. And none of the companies had Washington offices, except HP, at that time. So it was a new experience for basically everybody in the Valley. Then 1998 rolls around-- and by this time, I'm the guy that briefs a lot of the congressmen coming through on the R-side. Other guys did it on the D-side. And 1998 comes around and George W. Bush is running for reelection as governor of Texas. And so he comes out here, and I-- it falls on my responsibility to fill him in on the issues. Then we're up at Quadrus [a Sand Hill Road meeting center], and he says, "So what are the issues?" And I told him about the education thing, told him about the tort reform. By that time, a good thing had happened on the tort reform thing. So that was falling away as an issue. And I don't frankly remember what our other two or

three key issues were at that time. And he says, "Is that it?" after I've kind of briefly briefed him. We had 10 minutes before the meeting. And I said, "Well, no. Not exactly, sir." I said, "You know, there's a lot of rumor of you running for president. You're going to get that question today." And he looks at me kind of wistfully and says, "Yeah, I don't know what I'm going to do about that. But you're right, it's being talked about and I'm starting to think about it." And as a result of that, his being wistful-- oh, and then he goes on to tell me, he says, "You know, I know what this [serving as President] does to a family. My daughters' are 16, and this is going to be hard for them because they'll be 18 when I'm in the White House," or whatever it was. I don't remember the exact times.

Hollar: Exactly right.

Kvamme: Yeah.

Hollar: They were going to college.

Kvamme: Yeah, they were going off to college. And as a result of that, I bet John Chambers a case of wine that George W. Bush would not run <laughs> and I bet somebody else a bottle of some fancy champagne that he would not run. And so obviously that was wrong. So the spring comes around and he's [George W. Bush is] starting to have these luncheons in Austin. He was inviting down 20-25 people. So I get invited to one of these because he remembers me from Silicon Valley. And he talked about his campaign. He talked about the "No Child Left Behind" idea. I don't think it was called that at that time. He talks about some other things that he's thinking about doing. And he's thinking about running, but he wanted to get the feel for people from various sectors. And the luncheon I went to, I think there were 20 people. We sat in a very small room in the Governor's mansion. And he actually, he sat me right next to him, which I found interesting at the time.

So he talked policy and the meeting ended and nothing more came of it. But at that moment-- and then he formally announces and I get a call and asked if I would set up, or help set up, a technology advisory board. And many people don't know this, but Bush never set up Greek-Americans for Bush. Italian-Americans, Jewish-Americans for Bush. Black-Americans for Bush. He hated hyphenated. He just hated it. He didn't want any of that. So the only advisory board he had was the tech advisory board. And that was his thing. And actually, he asked me to do it with Michael Dell, who I saw the other night at Steve's thing [memorial], by the way. I hadn't seen him for a long time. And so Michael was very busy with Dell. But Michael had done a wonderful thing before that. He had spent hours with Bush telling him that this tech thing is real and it's going to change the world. Because he was right there in Austin, and they'd become friends. And so Bush was really into it. So then he asked me to set up a thing out here and then he asked me to set up a thing in Austin, and we brought in 400 CEOs from around the country for a big meeting on what are the issues. We did big papers, and then he joined the meeting. And then this is after now, he had introduced the thing, and Michael and I ran the meeting for him and I did most of

the legwork of getting guys there. Because the tech thing was just huge. It was on the way up to what was the bubble, but the bubble hadn't burst yet.

Well, right about this time, we're now into 2000, and the bubble is moving. And it's peaking in that April, March/April timeframe. And so he was very-- as a matter of fact, the last time he came here, he wanted to have one of those "Thousand Points of Light" like his dad had had. One of those faith-based things here. He didn't want to do tech, but he wanted to meet the tech guys. So I arranged for him to meet John Chambers again. And Scott McNealy had not met him yet. And those two. Scott had just returned from a sales trip to Detroit and told him that-- and this is, like, a week before the election. And told him, "It isn't good. Things are heading right into the toilet." And, of course, the NASDAQ is going from 5,000 and right now it's-- by that time, it's probably 2,500. It is falling a lot in that timeframe. So he said, "Well, those are going to be mine if we win this thing. And so I'm going to depend on you guys to help me." Some words to that effect. And actually I helped arrange the things over at the San Jose Rescue Mission [CitiTeam Ministries] because he was doing that faith-based thing. <laughs> And he was late because he was meeting with these guys who were trying to get off alcohol. And since he had been going through the exact same thing personally, he really related to that program over there. As a matter of fact, he talked about it for a long time after that and was happy that he'd seen that. So the election happens, and if you recall, the election took forever. <laughs> And so it's early-- very late December or January,

I get a phone call and it's from his buddy, [Brad] Freeman, in Southern California, who he'd gone to college with. It's funny, I can't think of his first name right now. But he said, "Would you be interested in ambassadorship? Is that why you did that?" I said, "No. You know, I didn't do it for that. I just think he's the right guy for the country right now. No, I don't need to have anything." And that was that. About a week goes by, I get another phone call. Oh, no. What I said was, "I don't think you have ambassadorships for Silicon Valley, so I don't think I'm interested. <laughs> I don't think I want to do this." And Jean wasn't interested in going overseas and I wasn't particularly interested in doing an ambassador thing either. I'd one time talked about being an ambassador in Japan when I was going to Japan so much. I've been to Japan about 70 times because of the Hitachi thing and selling semiconductors when they were a big market in the '70s. We didn't go into that. Anyway, so this next call comes back and said, "There is an advisory board for the President. It's in the White House. It's been created, in one form or another, since Truman and would you be open to co-chairing that?" Now, by this time, there's rumors I'm being considered Secretary of Commerce. And I knew they were false because nobody talked to me. And that was logically going to somebody that had been heavy in the campaign and Don Evans, of course, took that role. So I get this call.

Well, fortunately, the current guy chairing that was John Young from HP, for Clinton. He'd done it for eight years. So I call John because I knew John well and said, "John, talk to me about this PCAST [President's Council of Advisors in Science and Technology] thing." And I'd never heard of PCAST at that time. And by now, we're-- I guess we're through the inauguration by this time. That has just happened. And so I call John and John's answer was, "Only do it if you think they care," because he said, "I don't

know if you know this, Floyd, but the President assigns thousands of people to build an administration and never meets with most of them." And so I tried to figure out how am I going to get the answer to that question. It's a little hard to say, "Well, if you appoint me, do you care?" <laughs> So I met with Karl [Rove], who I'd gotten to know well in the thing. He said, "No, tech's a big deal for the President and he wants to really understand what tech's going to mean." Because obviously by now, the bubble has burst for sure. We're in recession. And he thinks tech's going to be-- it was a tech bubble and tech's down, and so we got to figure out what to do about this. And so long story short, I accepted the job and in March was named co-chair of PCAST. And they hadn't picked the Science Advisor, so I was "the guy" in the White House. I actually had an office in the EEOB, Eisenhower Executive Office Building, which is on the White House grounds, that big concrete building next to it [the White House]. And so I was going back there once a month and helped them on Cheney's Energy Plan and started the role out. And what they asked me to do was to meet with each of the Cabinet secretaries and say, "What tech areas would they like advising on?" And I kind of asked to do that because I said, "The concept of giving advice in the areas that people don't want it in, doesn't appeal to me." I said, "Let's at least find out what they want advice in."

Hollar: So this a fully engaged job?

Kvamme: This is fully engaged.

Hollar: This is not window dressing..

Kvamme: No. I am up to my eyeballs at this time. And I'm the tech guy at the White House for months because Jack Marburger doesn't get appointed until November. Or no, he gets appointed in, like, August. But Congressional, Senate approval takes forever. And my job did not require Senate approval. At first, they thought it was going to. But then it didn't. So March/April/May. May we have a big energy conference out here in L.A. because California's going through that big energy thing. Gray Davis is there. [Richard] Riordan, the Mayor of L.A. and the President comes out. He asked me to put together a thing. I bring a bunch of the guys from here down, and then they also brought people in from stores. That's where I learned that Wal-Mart controls the temperature in all other stores centrally in Bentonville, Arkansas. And he agreed to turn the degrees up two degrees to lower their air conditioning costs at the meeting. You know, kind of a deal?

Hollar: I didn't know that.

Kvamme: Yeah. But anyway, it's kind of fascinating. The White House was starting to be like an office. And I have an office there, and I'm getting asked all these questions. Finally, Jack-- well, matter of fact, I was in Washington, walking toward the White House on 9/11 when all hell breaks loose. And I see people running out of the White House building. I'm still Chairman of Empower America at that time. We

have an office right kitty-corner from the White House. I go up the elevator. I get in the lobby, and there stands Bill Bennett pushing the button to get down the elevator. And I say, "Bill,"-- I didn't exactly know what was going on at that time. And Bill says, "When I was in the Cabinet, they told us, get as far away from the city as possible. If there's ever an event like this" He said, "You're in a war zone." And I go back down the elevator, start walking back toward my office, and there's this guy with a bunch of hash on his shoulders, talking to a guy next to him and I'm eavesdropping. He says, "My God, I thought I'd never see this - air cover over Washington." And there's these low-flying jets. And he explains to this guy, "Those guys are at 2,000 feet. There's another set of them at 40,000 feet and if anything gets in between, they ain't going to be there very long." And the city is just nutso, people running away. And I go back to my hotel and I find out I don't have my phone charger. I can't make connection with Jean here because the phone lines were all jammed up. And I've realized I'd forgotten my phone charger, I go out in the town at two o'clock in the afternoon to try to find a store open to buy a phone charger. There are none open. I hear that the President's coming in. I fortunately stayed at the Jefferson instead of the Hay-Adams. They were booked up that time. And so everything was blocked off up into K Street.

And I watched the helicopters come in, watched the President land. He was joking with me about that just recently. He says, "I thought there was one guy I saw out there." <laughs> It was deserted. He has a sense of humor that was incredible. But that was an exciting day. And we were having a TechNet meeting that day, or the next day. I guess we were planning on it. Because I worked with a gal that had been the Republican head of TechNet out here, and she got the job of being head of Domestic Liaison, Lezlee Westine. I don't know if you ever heard her name. But Lezlee was in the White House, working for Karl. And we'd worked together on all the Republican deals out here. So that was a relationship back there that was perfect. So she set up all the conferences. And so she always asked me who to invite and so I got involved. And then I tried to stay on top of what policy issues are you guys really worried about. And the big job there was, everybody goes into those things with biases. You're not going to recommend a policy that's going to hurt their company. So you have to figure out, "Okay, is this good for Sun, or is it good for America? Or is it good for both?" And you try to find the ones that were good for both.

Hollar: And how do you feel that process works? Can it work pretty well?

Kvamme: I thought it worked very well. Now again, we had tremendous access to the President. But the thing he called on us, is that, "I know that this hasn't been PCAST's responsibility generally, but if we accept one of your ideas, I want you on the Hill selling it. You have to go up there and meet with the Congress, meet with the Senators, etc." And two things happened early on in the administration, they had a thing called PITAC, which was the President's Information Technology Advisory Council, which had been developed in the H.W. Bush days. That came up for renewal. Bush didn't want a separate head of that, so he tucked that under us. But that responsibility was also to the Congress that reported to the Science and Tech Committee in the Congress. And then they wanted to do a similar thing, because they really liked the PITAC work, on nanotechnology. We had started a report on nanotechnology at PCAST

because that was starting to be a big deal, and we were starting to get some of these folks who were in to the precautionary principle, if you're familiar with that, were wanting to stop a lot of the nanotech. We didn't think that was wise from a scientific development standpoint. So instead of that-- and that was in the early years when the Democrats were in control of the Senate. So Ron Wyden [Senator from Oregon]] was the key guy. So I got to know Ron, and I talked him into allowing that to also report in the PCAST, or be part of PCAST, and I would chair that as well. So I formally really chaired three things. PCAST, PITAC, and the National Nanotech Advisory Panel (NNAP). So we had touched with the Congress also on those things. And I don't think many Americans know how close we came to nanotech being really stopped in this country.

Hollar: Why would that have happened?

Kvamme: Because these precautionary principle people were really getting into it. And it was the Green Movement. It was the GMO Movement. They felt that nanotech wasn't properly understood. And you can't say that it is properly, 100 percent understood. But the thing that technology implies is risk. You got to face the fact, it implies risk. Everything we do, particularly in a drug delivery area-- yes, you try to go through phase one, two, three clinicals to try to eliminate the risk, but you know and I know, that there's many examples where drugs, after they got to the market, had to be taken from the market. Does that mean we shut down all drug things until we're absolutely certain? I just didn't feel that was the right thing to do. And sunscreens, for example, were starting to be, essentially all of them, were nanotech based items. And they were worried about penetrations through the dermal layer, and we had to address that. And, yeah, we worked closely with the FDA on that, on that report on nanotech. But we concluded that the evidence just didn't support the “fact” that these were dangerous kinds of things, from a policy point of view. And therefore, yes, we had to use a certain-- and they wanted to legislate the percentage of the funds that were for health and safety-- what was it called? There was a word that was the front word. So the Environment, Health, Safety, and Advocacy. Those words were worked into a word. I'm having a senior moment.

Hollar: <laughs>

Kvamme: On what that was. But that was there. And then energy was a big thing. And I ran into the President. This wasn't in a formal meeting. But it was about 2003 or 2004 in a thing in L.A. and he said, "How's it going?" I said, "It's going great. But by the way, we're thinking about starting a study, if you guys want us to, on entrepreneurs are really getting involved in energy." He says, "They are?" He says, "You mean your crowd of guys out west are getting involved in energy?" I said, "Yeah," and I said, "I think some exciting things might come of that." And he said, "Boy, I want to see that report."

Hollar: Because that's something else he's very personally involved?

Kvamme: Yeah, that he was very personally in. And he loved the word entrepreneur. He just really loved it. If you wanted to get something from him, tell him entrepreneurs were involved. And that was going to be a sales point. So we start on this study, and we soon see, that we got to take a look at the whole thing. And we find that those charts at Livermore that show the flow diagram, and I think we made those famous because now everybody wants to look at the flow diagram of energy in the country, but we showed how the various sectors and how there's really two pieces, transportation and electricity generation. And, of course, carbon is becoming an issue. And you talk about where the carbon's coming from and all. So we talked about solar, we talked about wind. But we faced the fact that, these things are a small percentage of our energy, I think. And at that time, now we're getting close to 2005, we're using 100 quadrillion BTUs of energy in the country as a whole. Projections are 150 by 2030 with current deal. So we came on very strong for energy efficiency move. Really pushed EnergyStar and all those kinds of programs, that they should be more broadly applied so consumers knew what energy impacts things were having. And at first, the first thing we did in the early thing that was a takeoff on that thing I'd done in May for energy out here. He asked me to repeat that in Washington at the Department of Energy. And they showed him hydrogen cars, and by that time, I was meeting with the energy guy in Cheney's group. I can't remember his name. I said, "You know, that ain't going to fly <laughs> guys. Let's not get the President involved." I had them withdraw the hydrogen car. There are so many problems there. That transition isn't going to take place for a long time. So I became a big promotor of biofuels as a result of our report. Efficiency, biofuels, more domestic supply as a way to get at the- both the carbon cycle issue and the efficiency issue and supply issue. And many Americans don't know that in 2005-- and so I have an Oval Office presentation with Bush, Cheney, the Secretary of Energy, the Secretary of Agriculture. A standup meeting only. You got to have studied your subject before you <laughs>..

Hollar: Standup meeting meaning everyone comes in and stands?

Kvamme: Well most of the guys are standing. I'm sitting on one of those couches next to Sam Bodman, who's Secretary of Energy. The President's sitting in that chair just in front of the fireplace. The Vice President is sitting there. Very rare that you get both of them, but this is a big deal, energy, because he was going to do a big State of the Union thing. And we gave him our pitch, and he was going into a Cabinet meeting right after that. He bought into it, and that's when they did the thing for the mandates for ethanol. And nobody thought ethanol would be able to produce the volume that it did, but it did. As a matter of fact, today about nine percent of our fuel supply is coming from ethanol. And they bought it, and I predicted to the President-- after the meeting, I shook his hand. I said, "You know, Mr. President, if you do this, you know what year will be the peak year for American imports of foreign oil?" He said, "No, which one?" I said, "The one we're in, 2005." And I don't know if you know, but we imported 12.5 million barrels a day in 2005. It went down in '06. It went down in '07. It went down in '08. And today we import 9.4 million barrels a day. We're down 25 percent in oil imports from foreign sources. And we've switched, Canada is now our largest supplier. Mexico is either second or third, Saudi being the other second or third. So our demand for foreign oil-- most Americans don't know this, but it worked. And it was those three things that we pushed. Ethanol, 10 percent of the supply. More domestic production. It's up about 10 percent. And efficiency. And they finally changed the law to where the head-- that the CAFE

standards and fuel standards could be run by the administration, not by the Congress. Because the Congress was run-- what's the famous Michigan Congressman?

Hollar: John Dingell?

Kvamme: John Dingell. He kept efficiency standards from going up for 20 years. He just fought every time they wanted to raise them. And so it stuck at wherever the number was, and it didn't need to be stuck. And so that bill went through. Many people say, "Are you proud of what you did back there?" And some of the stuff they didn't agree with, nothing happened. But I think of energy. I think of nanotech. I think what we did in personalized medicine. I think of the HHS going on understanding that drugs are not a one-size-fits-all phenomenon. Our bodies, while 98 percent the same, are different. And things like Herceptin for breast cancer, if you don't have the HERS, that gene, it's not going to help you. If you do, it's a miracle drug. You just don't get your way every time with these deals, but I felt we made a lot of progress, and I enjoyed it immensely. The President was terrific to us, and like I say, most of the time agreed with. If he went with something, he pushed it on the Hill. He pushed it in his budget things, and we got a chance to fight for it on the Hill. They didn't always agree.

Hollar: So those are all examples of somebody from the private sector with a deep technological background and real credibility in the industry, coming into Washington and really making a difference.

Kvamme: Well, trying to, for sure.

Hollar: Trying to. Does that give you hope when you look at the way these things sometimes work well together and they sometimes don't?

Kvamme: Yeah, it does in one respect. I had been dipped into the feeling that the bureaucrats are a bunch of bumbling boobs. There's a lot of very smart people in Washington. Unfortunately, they can't know everything that's going on in the economy and they get assigned responsibilities to do things with legislation that is formed because of six different entities of maybe a half dozen companies that are in that area, and it affects everybody in that industry. That's not good. <laughs> We've got to learn to differentiate legislation from General Electric and General Motors to Mother Fletcher's Screen Door and Rocket Factory [this is my favorite name for a small company; it doesn't exist]. It's just there are different ways to do things. And I got very active-- I'll tell you one funny story actually. This is the funniest thing I ever did in Washington. When Sarbanes-Oxley was going through and they were going to change stock option pricing. Stock options had been part of the Valley since 1960, if not before. And I really thought they were making a major mistake on this. And so the guy heading the budget committee was Richard Shelby [Senator from Alabama]. This is now probably 2006, 2005. Somewhere in there. I didn't know Richard Shelby from a rock, but I knew that Jack Kemp knew him well. I said, "Jack, you got to get me an appointment with Richard Shelby." Yeah, I was from the President's office and all. I just didn't feel that

my title would move him, particularly since I didn't want to talk about technology. I wanted to talk about the impact on technology of a piece of legislation.

So we walk into Shelby's office and I brought Kip Hagopian and Ed Zschau with me because the three of us had been working on how to change the logic of the accounting that they were going for in this stuff. So it was an accounting issue, but it was going to affect the earnings reports of tech companies. And we knew that he was dead set against what we were asking for, but we wanted to at least have a chance to make our pitch. <laughs> And so, without telling Kip or Ed, I start off the meeting when Shelby shows up. And you know that Shelby has agreed to this meeting, he's agreed for it to be 15 minutes long <laughs> and then he walks out of there. And he was putting up with these guys. I just could tell by the look on his face. For 15 minutes, because of his good friend, Jack Kemp. That was the deal, and I knew it. So I start off the meeting. I said, "Senator, we're here to talk about something that we know you're not very big on, and we feel a little like the three Hebrew children in the fiery furnace" <laughs> and I said, "I don't know if we're going to get out of this alive." But I was trying to get a rise out of him. He didn't even break a smile. <laughs> It was terrible. His aid is sitting there, saying, "What the hell did you do that for?" But we then made our pitch. We walked out of that room and Kip-- do you know Kip Hagopian?

Hollar: No, I don't. I know who you're talking about, but..

Kvamme: Yeah, he's a venture capitalist. Very smart guy in Southern California. And he's chairman of Jack Gifford's company. Jack, of course, passed away. Maxim. But we walk out and Kip turns to me and says, "Where the hell did you come up with <laughs> three Hebrew children?" But it just struck me as I sat there. This is not going to go well. I just know it. And when he walked in with that look on his face, I just knew it. And we didn't get our way on that. Today, think about the situation today. We announce and we are allowed to use non-GAAP numbers for announcements. Just talk yourselves through what that says. We're allowed to use non-generally accepted accounting principles for our numbers. Come on, that's crazy. So accounting, in my view, is so broken. And that's one that we didn't get a chance to change. And it has impact on the tech companies. It's certainly has had impact on their ability to access public funds in an IPO way. I'm saddened by that. So some things we weren't able to get done.

Hollar: You started out talking about how little the Valley understood Washington, and probably vice versa. Where do you feel that stands now given how you've seen it up close and personal, in both places?

Kvamme: Well, I think TechNet was a very effective entity, particularly in its early days because Washington wanted to hear from the tech leaders because the tech leaders were having increasing impact on the national economy. So they needed to understand that. Of course, since then, virtually every major company and a lot of small companies, have gotten together with Washington offices. And if

anything, today there's almost too much tech in Washington. And there's so many associations now that they have to come together because we don't have the equivalent of the business roundtable in tech. We don't have the equivalent of NAM, the National Association of Manufacturers, in tech. We have, I think, somebody once told me this, 14 of them. And there was even a funny situation at one time, early on in my career back there, where we learned that HP was a member of 10 of them. Four of them were for a certain piece of legislation, six of them were against it. So what good was it doing HP? They were saying, "Run, out that way." So I think there's a lot now. I think the question that I was always wrestling with is probably more alive today than it was then of, is this good for HP? Or is it good for America? Or is it good for both? And that's a hard question to dig into and really totally understand, but we certainly tried. When you have your own office, that office has its assignment. It's got to be good for Cisco. It's got to be good for Google. It's got to be good for HP. It's got to be good for Apple. It's got to be good for whoever's there. And that's what they're supposed to do for a living, and so somebody, hopefully, in some congressional committee, is saying, "Okay, we've got the opinion of boom, boom, boom." I met with the head of the-- what was his name? The guy who replaced the short guy, who was the movie industry guy?

Hollar: Jack Valenti [ph?]...

Kvamme: Valenti.

Hollar: ...and then a Congressman Dan..

Kvamme: I met with him, Dan.

Hollar: The guy from Missouri.

Kvamme: That's right, yeah. When they were trying to figure out this whole thing about movies. I said, "Hey," I pointed to Steve and said, "He did something to music and you may not like what he did with music, but at least the issue got settled. I think you and the industry have got to bar yourself in a room and figure out how you're going to divide this pie because the pie doesn't have 150 percent of pieces. It has 100 percent of pieces, and you got to sort that out." And Dan Golden, or something like that, he never necessarily went along with that. But to me, it'd be awfully nice if those opinions could come up with a common opinion and not have some staffer who's 22 years old recommending what the final legislation's going to look like. Because I think we know, that that doesn't always work very well.

Hollar: That's right. Dan Glickman, I think was his name.

Kvamme: Yes. That's exactly right. Very nice guy. Very good guy. Very concerned guy. And I think he moved on, and I don't know who's there now, but those kinds of issues-- although when you take all this thing that even the Valley companies were fighting about in this issue about on the net, open access.

Hollar: Net neutrality?

Kvamme: Net neutrality. That's an issue that should be solved in the industry, in my view. And I really encourage people to do that. Because if you're a guy laying out wire or optical cable and all, if you're not going to get any benefit for having better performance. Let's face it, we have FirstClass and AirMail for a long time in this country because there was some benefit for that. You got to sort that kind of stuff out so that the investments will be made and so that this stuff is credible. Fortunately for us, our ability to DWDM, Dense wave distribution-- they're now putting what? Eighty different optical signals on a given fiber have saved the necessity of doing some of this stuff. But sooner or later, there's going to have to be new infrastructure. And those infrastructure companies better get paid other than being just dumb pipes. And so those kind of things, I was always trying to get industry to sort it out, or at least come to some logical conclusion, before some piece of legislation came in and just screwed the whole thing up.

Hollar: Would you do it again?

Kvamme: Oh, yeah. I would absolutely do it, particularly under the circumstances. Because like I told John Young a year after I was there-- I ran into him. He says, "Floyd, how's it going?" I said, "John, they care." <laughs>

Hollar: The very thing he had said you should watch out for.

Kvamme: The thing to watch out for, yeah. No, they didn't care about some things. There were certain things we were legislating to do, that the administration wasn't particularly interested in. But we had to do them, so we did. But we didn't spend our time on that. We spent most of our time on doing reports of things that they had said, "Hey, we'd like to have you look at that." That certainly was the nano case. It certainly was the energy case. It certainly was the personalized medicine case. It certainly was the case when we set up the Department of Homeland Security. We made some recommendations because we had a number of guys that had been following along, from both the Bush 41 and the Clinton Administration's, on our PCAST. We kept a train of people. There was one guy who had been on the Reagan PCAST, one guy who'd been on the H. W. Bush PCAST, two guys that had been on the Clinton PCAST in our PCAST. So we had some continuity as well.

Hollar: Well, do you feel at this point, now in your career, does this seem like a logical progression to you, Floyd? Or have you wound up in places now where you think, "Yeah, this feels good. This is what I should be doing at this point."

Kvamme: I don't think I look at it that way. I have had a wonderful run, and I haven't had to do it with a lot of public light. There was a book I read many years ago, something like, "Reflections of a Bystander." It was by a famous guy. I can't even think who it was, but it was talking about how he, as a young kid, he'd been raised in a family and saw all these people, watched things go on. And so he saw how they developed. I've always been a bit of a history nut and I'm actually reading a book, "Citizens of London." I don't know if you've…

Hollar: I love that book.

Kvamme: Yeah, wasn't that a great book?

Hollar: It's an amazing book.

Kvamme: That's the kind of stuff I really like. I kind of feel like I've been a citizen of the Valley and had a chance to work with some incredible people, know some incredible people, have some influence on what the Valley's done in Washington, watched from the early days the evolution of the whole thing, and it's been a lot of fun. And see people develop. I have a very, the way I like to say it is, I have a very high view of people. I don't think people are dumb. I was talking to Governor Brown night before last at the Steve Jobs memorial, and we got to talking about plebiscites and taking things to the folks. I said, "Well, you know, I don't have a problem with that because I think people are smart. Yes, they like to be self-gratified, but that's important. If 80 percent of the people, 51 percent of the people, want to see things run a certain way, you don't denigrate the other 49. You don't hurt them in the process. But right things can come out of that. All the way back to when we had those plants in Southeast Asia that I was mentioning, it just amazed me at the ideas that came out of people that were on those lines. In Malacca, Malaysia, the previous job of most of our workers was tapping rubber trees. And yet they came to those plants, and within a period of a few years in our meritocracy promotion system, they were vying for major jobs in a high-tech industry. Because people are smart. You just got to keep that in mind. I always hated those books, "Such and Such for Dummies"--I don't like that title. Like that follow-on ad in 1984, that Lemming's ad, terrible. It implied your customers were dumb. Whoever buys from me who's dumb? That's a crazy idea. <laughs> You got to have the respect for folks. It served me extremely well.

Hollar: Well, it's been a privilege to take your oral history, and I'm so glad that you agreed to sit for this because I know you're not someone in the public eye. And that's not what this is intended to be, but it is intended to be part of the historical record.

Kvamme: Well, thank you. Again, I hope it's useful.

Hollar: Absolutely. It will be, so thank you.

Kvamme: Good.

END OF INTERVIEW

