

An Interview with
ANN S. KAUFMAN

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Conducted by Thomas J. Misa

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Abstract

Ann Kaufman graduated from an all-girls academic high school, then took a Bachelor's degree in math from Queens College (CUNY) with a Regent's Scholarship and then a Master's degree in math from Duke University. After teaching mathematics at a junior high school for three years, she took her first computer science courses at Staten Island College where an instructor arranged an interview with Bell Labs. Hired at Bell she took a Master's in computer science at Stevens Institute of Technology. She relates her experiences on assignment at Bell Southern, an operating company, and her subsequent Bell Labs work in programming, systems engineering, product management, and systems integration. She then traveled extensively in helping internationalize AT&T's Unix system, and then worked in different capacities for Novell and Santa Cruz Operation (SCO), after they successively bought the Unix division. She returned to Lucent Technologies then Avaya, doing project management for several data centers. Then, after a post-2001 hiatus, she returned to project-management and consulting work for Diageo (the drinks conglomerate). She offers thoughts on outsourcing and professional entrance in the IT workforce.

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Misa: My name is Tom Misa, [and] I'm talking today with Ann Kaufman. This is the 23rd of December 2015. We're doing a set of interviews for the Sloan Foundation trying to better understand the careers and experiences of women who worked in the computing industry from the 1960s through the 1990s. Ann, could you take us back and describe your childhood, or grade school, or high school years? Were there any hobbies, or activities, or classes that might have sparked your interest [or] that might have inclined you toward the later pursuit of a technical career?

Kaufman: My best memory is of my high school. I went to Hunter College High School in Manhattan, when it was an all girls' school. I started when I was 11 years old, in seventh grade. It's a public school with a very challenging entrance exam, so it's for gifted children, even if they don't know that they're gifted. What I do remember in high school was that I excelled at mathematics, even though my high school didn't push mathematics and science. They were more liberal arts. Out of 128 girls who graduated, every one went to college. Again, very small school, elite, although public school. Two girls went into computer science.

Misa: Two went into computer science.

Kaufman: Out of 128, yes. Everyone else [became] lawyers, doctors, writers, actresses or actors, you know, theater, but only two [in computer science].

Misa: Can you describe what kind of math classes you had? Were there particular instructors that might've been supportive or encouraging?

Kaufman: My best instructor was my ninth grade algebra teacher. When you did something that he thought was worthwhile, he used to give you a little wooden mouse — it's a pin. I still have it.

Misa: Oh yes?

Kaufman: And I'm 65 years old. What I did was one day in class, [I] deduce the Pythagorean Theorem. You know he was trying to lead us into the Pythagorean Theorem, and I did that. And he threw me a mouse. That's my fondest memory. As for the other teachers, they did teach accelerated classes at Hunter. I actually graduated after eleventh grade because I had enough credits to graduate then. I guess today they would be called AP. In those days I don't think they were called that. So I took the accelerated classes. But for me, [I] was eating this stuff up; it was easy. I can't say that any other teacher — they were good teachers — but he's the one that stood out.

Misa: When you were finished at Hunter High School, what options did you consider? Sounds like there was a strong emphasis on everybody going to college.

Kaufman: Right. I actually graduated in 1967. I'm the oldest of three. I have two younger brothers, and as far as my father was concerned — my Jewish parents — I was

supposed to stay home. So I actually had very limited options for colleges who would accept you after your junior year, or so I thought. I didn't have a lot of family support. My parents were okay parents, don't get me wrong. They emphasized education. They were the generation where if you came home and you had been in trouble at school, the first question was what did you do? [Laughs.] You know, guilty until proved innocent; not me, but my brothers. And my brothers' problem was that they followed me in high school and I was just a good little girl; average, not perfect. So I did not have a lot of encouragement. I went to Queens College and even though I don't look back, you know, you look back at forks in the road and that was one mistake.

Misa: That was a mistake.

Kaufman: Yes, because I went to Queens College, City University of New York, because it was free and I had a Regents Scholarship, so I actually made a little profit [that] paid for all my books. And I could work, which is what my father wanted me to do. I was bored. I was absolutely bored for four years in college.

Misa: Can you describe the Regents Scholarship? Was that connected to the Regents Exams?

Kaufman: Yes, in fact I think I went to summer school to take the Regents Exam in social studies, and I think statistics, so I'd have enough credits after eleventh grade to leave. Hunter would not award us — there were five of us who left early — they would

not award us a Hunter High School diploma. They refused. They gave us a Regents Diploma, which is a valid high school diploma in New York State.

Misa: Okay.

Kaufman: They were very snobbish about it because we didn't take Hunter senior English (this was the reason).

Misa: But it sounds like you said that Queens College was not quite as stimulating as it might've been for you.

Kaufman: Oh no. I had good math teachers. Again, I was lucky enough that I caught their eye or whatever. I had a great teacher; what was his name? Leo Zippin. He helped me get into graduate school.

Misa: Great. Was there anything like computing that you might have had contact with at Queens?

Kaufman: Didn't exist.

Misa: Didn't exist.

Kaufman: Absolutely didn't exist. I went to — tell me if I'm talking too fast — from Queens I went to — oh, let me back up to Queens just for one moment. The beginning of freshman year I thought I would major in engineering because I knew which way screws turned and I always liked figuring things out. I had to take a test to be admitted in the engineering program. I sat in the auditorium with 300 kids, it looked like everyone else was a boy, [laughs] and I decided not to major in engineering. Having come from an all-girls school, I panicked. So I did not major in engineering. I actually majored in pre-med for the first year.

Misa: Pre-med.

Kaufman: Yes. My father did a job of talking me out of that, and the reason I switched to math was it was always easy. Spanish was my best subject, but I thought that was beneath me; I didn't want to be a teacher. I didn't know what to do with Spanish. I had Spanish teachers encouraging me to go abroad. It turns out if you're mathematical, certain logical things come easy, so Spanish came very easy to me. But I stuck with the math and I switched to majoring in math my second year. I also had a great logics teacher, Eliot Mendelson, who was then world famous in logic. He was fabulous. He was also the chair of the Phi Beta Kappa Society at Queens. I made Phi Beta Kappa at Queens and I got an assistantship at Duke University in mathematics, and that's where I went.

Misa: That was for graduate school?

Kaufman: That's for grad school, \$4200 a year. I was in a Ph.D. program. I guess I've always been — well then, I used to give in too easily, that's what I would say. I was in a Ph.D. program wondering what was I going to do with math. Deciding I really should just finish and go to work, so I took a master's. And as I was taking the master's, was it Duke? Yes, Duke was starting a computer science program and one of my instructors asked to stay and join the computer science program. That would've been maybe 1973, but I went home instead. That's why I said there was no computer science. They were literally just starting. So there's another fork in the road. But daddy wanted me to come home and I went home.

Misa: So you finished a master's degree in mathematics, but there was no computing content.

Kaufman: Correct.

Misa: And it sounds like Duke was just starting.

Kaufman: Right. Wouldn't that have been fun? When I came home, I wasn't qualified to do anything. [Laughs.] With just a liberal arts degrees, an MA in mathematics, and that same teacher [Dr. Zippin] offered me a teaching assistantship at Queens and I did a little research. It paid about \$5,000 a year, but public school teaching in New York City paid double, a little over \$11,000 a year. So I took write-in exams in education. I had never taken an education course. I got a junior high school license to teach mathematics and

another one to teach bilingual mathematics. I had to go for an interview in Spanish, which I passed, and I got a job teaching at one of the worst junior high schools in Staten Island, New York, teaching math and Spanish. They really wanted me to teach Spanish, and again, I never wanted to be a teacher but I just fell into it. I'll tell you what I saw in junior high school. I saw that the girls were the better math students and that at the beginning of eighth grade they would be the stars. By the end of eighth grade they'd be taking second seat.

Misa: Wow.

Kaufman: The difference I saw between the girls and the boys — and I'm sure you have information about this — was that girls don't raise their hands unless they're sure of the answers. Boys, on the other hand, they'll just throw it out and sooner or later; I still remember the boys going ooh, ooh, ooh! You know, they'd get it, eventually. But the girls sat back. I watched them change and it was very frustrating.

Misa: In the eighth grade you saw that?

Kaufman: Yes.

Misa: And especially for you, who was trying to encourage all students to be really engaged in math, it must have been a really frustrating thing to see.

Kaufman: Yes. And by the third year, when I was only teaching gifted courses — the way it works in the city is the longer you teach, they give the more experienced teachers the better classes and the young teachers the tough classes — that was my first year. But I wasn't making enough money because \$11,000 had been frozen. There was a strike in New York City and they froze teachers' salaries because they were in violation of the Taylor Act because they're civil servants. I wasn't making enough money, so I decided to go back to summer school to supplement my income, and I took computer science courses then. I discovered they were a lot of fun. It was Staten Island College.

Misa: Staten Island, okay.

Kaufman: Yes. It was a four-year college. I don't know if that's its name now, but it was a four-year college. But it was so much fun, and I was having so much fun. Again, one of my instructors sent me to meet the Bell Labs recruiter when he came to interview on campus. He offered me \$17,800. I was making a little over \$11,000 as a teacher. I accepted immediately, went into school a few weeks later and resigned, and never looked back.

Misa: That's not quite double, but close to doubling your salary.

Kaufman: Right. Bell Labs hired me as an Associate Member of Technical Staff. I know you talked to Kathy Detrano. I met Kathy at Bell Labs. I actually worked for her at one point. But they hired me as an Associate Member of Technical Staff, and I had a master's

in math already. When they hired men with the same credentials [it was] as a full Member of Technical Staff. After a year or so, I even mentored some of the new hires; they were a higher level than I was. They also had a program where you could go to graduate school at night, Bell Labs paid for it, you could get your master's over two years, or you could go away for a year. They would pay you, including a stipend, to get your master's, but they wouldn't allow me — I guess as already an employee — to go away for a year. But I had a manager, a man who was very supportive of women in that industry, and he helped me build a case. I had to build a case for a year and a half, go before a board of directors, to be reclassified as a full Member of Technical Staff. And then they allowed me to — the caveat was that I got promoted, but I had to go to school — get my master's. They paid for me to go to Stevens Institute of Technology for two years at night, and I completed my MS in Comp Sci. And again, it was fun and it was so easy compared to math. I know I sound like a snob, but it was easy. I did get one “B” but that's because the teacher — his name is Al Aho, he's a wonderful teacher — he was one of the authors of the language AWK, and wrote a lot of books. But he gave us a problem on our final that had never been solved. He wanted to see if we could solve it. Nobody could solve it [and] you got a “B” if you didn't solve it. That was my only “B” in grad school.

Misa: That's not so bad.

Kaufman: No. But it was also that I was a little older, I guess, and I wasn't the same type of student anymore, not just concerned about grades but concerned about life. Also,

because I was working, I was getting married, we were buying a house, I was finishing my master's [laughs] and I didn't die.

Misa: [Laughing.] Must have been a busy time.

Kaufman: There were women around me, like Kathy. I don't recall a lot of women managers. There were many more men than women at Bell Labs, many, many more. They were into Affirmative Action, those were the initials for women and for African Americans. So I ended up, I was part of special programs. They sent us to the telephone companies — those were our customers — to learn about the business. I went with, I think, 17 young men for a month to Southern Bell to work with them, which was a great experience.

Misa: To which Bell? Southern Bell?

Kaufman: It was Southern Bell at that time, before it was AT&T. When they had the baby bells I think there were seven of them. I got to do that "Operating Company Assistance Program," OCAP. That's what it was, to learn how they did business. And that was fun. That's why I asked you how much time you have because I have some stories.

Misa: Please tell us some of the stories because it's really in the details, and you know you had this amazing experience, so I wouldn't mind hearing the longer version, that'd be great.

Kaufman: Again, it was the South and I'm from New York, and when I went down, it was myself and all these young men. I was very young. I guess I started Bell Labs when I was 29 years old but I looked like I was 16. I remember the first night at dinner, the gentleman in charge pulled my seat out for me and I almost fell on the floor because I didn't expect it! I also remember one young man who was African American, and we were going to go to Aunt Pitty Pat's Porch in Atlanta. We were advised not to go, because we wouldn't be welcome unless he didn't go, so none of us went.

Misa: Oh wow.

Kaufman: I went out with a cable repairman. We were in Atlanta for several weeks and in Charleston for one week. In Charleston I went out on the rounds with a cable repairman, and one of his jobs was to retrieve phones when people didn't pay their bills. The other job was to go into the hole, you know the manhole, and work on underground cable. I had to wear a hard hat, and I remember that I was wearing jeans and work boots, and flannel shirt, and I had long, curly hair. My job was to stand near the truck, even though you didn't need to watch, it was very, very safe. But I stayed with the truck, I was not allowed to go in the manhole, I wasn't trained. He climbs out of the manhole and (I'll never forget), he rested his arms on the sidewalk and burst out laughing. I said, 'What are

you laughing about? He said, 'Turn around.' I turned around, and traffic in four directions on the four corners had stopped because they saw me, and they had never seen a woman cable repair person before!

Misa: Wow. [Laughs.]

Kaufman: That was my operating company program. I moved around in Bell Labs. I had never really programmed until I went to grad school and those were the days when you punched cards, and before you had the internet at home, and we had the Teletype Silent 700s at work. I discovered very quickly that I didn't like cutting code, I liked solving the problem, and I met a young programmer who loved cutting code, so I would give him the flow charts. In those days, we did flow charts. I liked understanding the customer's, the telephone companies' problems. We were in charge of an inventory system. They were the piece parts for large central office switches, then later became piece parts of the computers that replaced the large central office switches. So you've probably heard of 1ESS, right?

Misa: Yes.

Kaufman: And then they started using PDP-11s to replace some of these switches, and we were in charge of the parts. The computer systems were actually designed in Denver, Colorado, in concert with a lab in Freehold, and a lab in Holmdel, New Jersey. And we were the inventory system. I moved from programming to what was then called "Systems

Engineering,” which was collecting the specs, writing the requirements, documenting it from beginning to end, watching it through fruition. And I kept getting — I’m going to say — positions that were more abstract rather than hands-on. I worked for Kathy at one point and she had an idea — I don’t know if she told you — about developing a user friendly, English-like, a “script” language so that you didn’t have to write in C; the programmer could write the commands in English. But we needed somebody to translate it into C and there was a young programmer who wouldn’t talk to anybody except me. I like people; I get along with people. So he developed the translator and I worked with him on the translator with Kathy, she was top boss. What I saw then was that, even then, the ceiling was rather low for women. More and more women became supervisors, but they were largely supervisors in the soft stuff, like human factors, you know, the personnel subsystems, not the really techie stuff. Kathy’s really techie. But at one point, I had designed a system and I watched it come to life, and I stood back and watched the day that they tried this system and it worked. It was an interface — this is beyond Kathy, after I’d worked for Kathy, so I’m skipping years — and it was an interface between one of these switches called a remote maintenance and administration system [RMAT] — again, it was a computer that replaced the big switches that created private switches that buildings and offices and businesses would use, and they came in all different sizes. Then we had the inventory control and we had to establish an interface between them, and that’s what we did. I watched the day it came to life, and the next day I went to my boss and said I wanted to go back into development because I missed it. So I seesawed back and forth a little bit, and eventually I moved into product management. Bell Labs kept getting sold by AT&T. AT&T went through a lot of changes and they spun off UNIX

system organization, then it became UNIX System Labs, but it was still Bell Labs. Then they sold it to Novell. They sold the UNIX operating system. There were two versions of the UNIX operating system, I guess, in the 1980s: one was the East coast, one was the West coast. The West coast version had its roots in Berkeley on that coast [and] the East coast was at Bell Labs. It was an operating system for engineers, it really wasn't user friendly. It was used in embedded systems, you know like controllers for machines, controllers for cash registers, it wasn't a very friendly user interface. But Novell bought it, thinking they'd marry their networking system with this operating system and compete with Microsoft. Well you can imagine how that went; it didn't go very well.

Misa: Novell had this whole idea for doing networking different from anybody else. For a time it was successful and then basically, they just got clobbered.

Kaufman: Right. But I skipped a couple years. Let me make sure which years I skipped.

Misa: You're telling a UNIX story, but were under the head really of your time doing product management and doing more development work, I think.

Kaufman: Right. I came back from a business trip and my job had been eliminated. It was just before Novell bought us. But my boss had already found me another job. Again, I worked for a man at that time, didn't work for Kathy anymore, and he found me a job with the C++ people, some of the most brilliant people in the world. I became their

system integrator. They just decided to make C++ a binary product. It had never been done.

Misa: Great, wow.

Kaufman: So it was chicken and egg, because a lot of it is based on C, but not all. You have libraries calling library functions, calling themselves, and I remember locking myself in my office with my officemate for a couple of weeks trying to figure out how we were going to build this monster. And we did. I succeeded in making it a binary product. But it was around that time — and my remembrance may be a little covered with spider webs — that Novell came in. I'm trying to think of whether I was Novell or in between. In that timeframe, in 1986, I had a son. Okay, so it's prior to Novell. Prior to Novell I had a son, and my son was born with congenital heart defects, which he conquered. He was not allowed to go to day care initially because the doctors wanted to keep him really healthy before he had to have his first surgery at the age of one. I walked into my director at the time and told him I was going to quit. I had a better job than my husband, my husband didn't like his job as much as I liked mine. He worked for a drug company. Yet I was ready to leave my job, I didn't even think about it twice. I had never been raised thinking, 'oh, I'm going to be a mother.' The marriage and kid were a surprise to me. I was married in 1982, had a kid in 1986, so I was almost 36 when he was born. My first thought was I was going to quit, but my director, a man — I only remember his first name was Gene — had five children and he refused to let me quit. He

figured out a way to keep me as a part-timer, two days a week. I was one of the few, and one of the first part timers at Bell Labs.

Misa: At Bell, it wasn't common to be doing part-time work.

Kaufman: No. I would say at that time in most technical businesses it probably wasn't. So two days a week, my son did go to private care. Two days a week barely paid for the babysitting. At one point, I was driving 50 miles each way to work because the location had changed. It kept me working, and it enabled me to keep a foothold. I progressed in that job, even though I was not fulltime. Remember, I said I worked with C++, I knew the language folks, and there were a lot of standards bodies in the industry that were developing then. X/Open invented its own reason for being. You can tell from my tone what I think about standards bodies. I became AT&T's representative for internationalizing the UNIX operating system, and I got to travel. I got to travel a lot because our customers for the UNIX operating system were the large source code companies, Hitachi, Fujitsu, NEC. They would put our operating system on their computers and there were many standards bodies trying to figure out how to make the operating systems speak different languages, what library changes were required, etcetera, — this is when I was working with the C++, C people — what library changes they were going to put in, what calls they were going to put in. Remember I said there was the East coast UNIX, there was the West coast UNIX, those libraries were never exactly the same, they didn't get along.

Misa: Never the same.

Kaufman: No, enough to drive you crazy. But I got to travel. I went to Japan four times, I went to California a great deal because that was halfway, sort of, between the Far East and U.S., and Europe, so we would meet in California. When I went to Japan, except for the ladies — and a lot of them were engineers, but you didn't know it — I was one of the few women in the group. There was another lady from Taiwan. The Japanese women, I thought they were office girls, pardon the expression. Then there was me and a whole bunch of men. At one point, I asked our manager in the Tokyo office why they seemed to accept me but the other women sat in the back. He said because I took the time to come out there, and because I was representing the East coast. But the biggest thing was, he said, because I took the time to travel that far. And I had a little boy. By that time — I remember when I went to Taiwan he was five and they couldn't find his soccer shoes, I remember that. I even reread one of his books recently where he wrote, 'My mommy travels,' that he started writing in first grade. My son passed away, but that's another story.

Misa: Oh, sorry to hear that.

Kaufman: No, that's okay. You don't have to put that in your interview. But he knew that mommy traveled, and actually, he became a world traveler, more than I was. [He was] also a mathematician, spoke fluent French, spoke gorgeous French, same reason because it was easy. [He] majored in economics and music. That's the other thing about

mathematicians; I'm not a musical mathematician, but my son was. But anyway, I traveled a lot. I traveled in Europe, and California, and the Far East.

Misa: You said that there were Japanese women who were technical, they were engineers, but you assumed that they were clerical. Why did you have that impression?

Kaufman: Because they sat in back, they never had any input, and they served people. If you wanted tea or water or something, they would serve.

Misa: So despite their being technical, they could've had technical contributions but they were really treated as though they were clerical staff?

Kaufman: Right, at that time.

Misa: At that time, yes okay.

Kaufman: That was my view.

Misa: You were respected even by the Japanese counterparts, in part because you were representing a big American company, you had a position of some authority, and were accepted within that realm?

Kaufman: Yes, that's right. And then I got a boss who decided he wanted to travel, so he took that job away from me. And then we went to work for Novell. Novell came in and had bought the Labs, and the first thing they asked was how many part timers there were. By then, I was working roughly 35 hours a week. I mean, I didn't punch a clock, but 35 hours a week. And when I heard they asked that question, I went into my boss, who was a woman at the time, and told her that I was coming back to work fulltime. My son was old enough to go to after school day care, healthy enough to hold his own with colds and things like that — he was not a sickly child — and so I went back to work fulltime. That was, let's see, if he was in first grade he was eight, so 1994, I guess. And again, they relegated me to Tier Three engineering.

Misa: When you heard they were trying to count the number of part timers, you inferred that they would be terminating, firing the part time workers?

Kaufman: Absolutely. I also knew that you worked a certain number of hours, you were eligible for pension benefits — even though we lost it at Novell — pension and health and things like that. But that's exactly what I thought. I didn't even blink an eye, I went in and said I was going back full time, and she was happy. Then I moved to Tier Three engineering, which was the highest level of customer support, it was for the UNIX Core operating system that Bell was trying to sell. At that time in my career, I distinctly remember that the finest engineer I knew, was a woman and a consultant. The woman I knew was hired from the outside. [She] was absolutely brilliant. At one point, we had a problem with our operating system, it was used for point of sale cash registers. I get a call

one day, and I heard the man say, ‘You have to help me, the lines are backing up out of the store.’ And I thought it was a wrong number. I said, ‘What do you mean?’ He said, ‘Well the cash registers are shutting down.’ I said, ‘And?’ ‘Well, we use UNIXware to run these cash registers.’ He said, ‘We have a server in the back office and the server is freezing, and the cash registers don’t work, we can’t check people out.’ It was called Big Stores, I remember — not Giant — but Big Stores. B-I-G, somewhere in Texas. I could not figure out what was happening, over the phone, so I asked him to ship me one of the cash registers and PCs. You know women are really good shoppers. One thing I’ll say about women — you’ve probably heard it — we multi-task.

Misa: Okay.

Kaufman: And we kind of see the broad picture. Men, I think — I’m not a psychologist — but I think they tend to be more focused and single stream, women are multi-stream.

Misa: I’ve heard that.

Kaufman: I asked him if he would ship me a cash register with one of the PCs that was running it. And he did, and we brought it to our lab, and set it up. And before I know it, I’ve got five guys pounding away on this machine, trying this, trying that. And I got so mad because I was trying to control the situation, that I changed the code on the lab door and I locked everybody out. I let the woman engineer in because I wanted one expert at a time; I was going to let different people in. I wanted to track the changes and she was a

kernel expert, and she actually — this is magic to me — she took the application, the operating system, and she unraveled it to find the code. She disassembled it and she found a bug in the code that had been introduced by another woman programmer, by the way, who was a really mediocre programmer, who I think was actually there for affirmative action reasons, but anyway, terrible programmer. So the excellent engineer found the problem. But I still remember these guys — remember when I said eighth grade math? They raised their hands even if they didn't know the answer.

Misa: Oh right, just to close in.

Kaufman: They'd throw it up against the wall, maybe they'll get the right answers, that's exactly how they attacked this. Even the most brilliant man — who is still one of the most brilliant men — that's how they attacked it; they started throwing things at it. And she found an error in the code. It was a loop that made the PC freeze. So, I'm not at that detailed level of technical expertise; I tend to be broader, I guess. And what I love more than anything is working with brilliant engineers. I love working with people, but I really, I love understanding the problem and working with engineers. So here we are with Novell, and Novell decides to sell us, again, because UNIX was not taking off against Microsoft. And Hewlett Packard and SCO, the West Coast company that had the Berkeley UNIX, came in to interview. I wasn't so crazy about Hewlett Packard; SCO, a little weird, because they were going to be California-based, they were going to start a lab in New Jersey, and they had a lab in England, and I remember asking the guy interviewing me if he would let me keep my login! At that point you know, e-mail was

just taking off and we had logins at Bell Labs, and my login was my initials, ASK, which I thought was really cute. I asked if I could keep it and he said, 'no'. And I said, 'Well then I can't go to work for you.' He said, 'Well let me find out.'

Misa: Okay.

Kaufman: I wanted to be ask@sco.com and they agreed, so I took the job. I worked there for a while. I can't even remember what I did exactly at the beginning, but they wanted to start a system test group. They had a small one in California, and they wanted a multinational one. One in England, a bigger lab in the U.S., - New Jersey, and then one in California. I got called in one day by my department head asking me if I would like to take a promotion and become the supervisor of this SCO system test group. I looked him straight in the eye and said, 'My son's having surgery in a few days, my answer has to be no.' My son had heart condition and sometimes they did invasive tests.

Misa: Yes.

Kaufman: So that was number one in my life. I looked him straight in the eye and said, 'Can't do it.' I remember two of them interviewing me, because one was a department head from California, and one was a department head from New Jersey, and they looked at me dumbfounded. The one from California, whose name was Charlie, said 'How about we come back and ask you again in a couple of weeks? We'll hold the job.' I said yes, and my son was fine. I came back — I even remember it was a rainy day when the two of

them were interviewing me — and they put me in charge of this system test group. So one of my first trips flying to California to meet my two assistant testers, I find them — it's noon — and they're surfing.

Misa: Surfing! [Laughs.]

Kaufman: Off the Santa Cruz pier. [Laughing.] But they always got their work done so I never noticed, you know? But when I went to look for them everybody said go to the pier, and they were surfing, that's what they were doing. One was German American. One was American. They were very, very bright. And then in New York, we established a much bigger lab. We had to pull the equipment together. In London, I had one system tester work for me, a young man. Did that for a couple years.

Misa: So this is all distributed, then?

Kaufman: Yes.

Misa: And you had supervisory responsibilities in a bunch of different time zones?

Kaufman: Yes. But you'll learn about me in less than an hour, I've always done that. Remember that I traveled for AT&T and we didn't have the communications that we have now, I've always been a very early riser. My last job, I was accused of never sleeping, which is not a good thing, not a good thing. But I was always available for the

people, if it was important for the people and reasonable. If it was not reasonable, I would say so. Some people have early morning meetings because they want to make a show out of it, and I think that's wrong, if it can be done other ways. But yes, I managed three groups. And one day the human resources director from California comes to see me — and we had offices in those days, private offices — and she asked to come into my office and I said okay, and I'm thinking, 'I'm gonna be fired.' Why else would the human resources director come to see me, right? Except to fire me. She sat down and told me there was something going on with my tester in the London office. I struggle [because] I don't want to say names. But they had had meetings in London, and they had people go in to see everyone in the London office, and the issue was that the young man in my London office had decided to become a woman.

Misa: Oh.

Kaufman: As part of the transition, was going to start living as a woman first, changing his name, coming in in dresses, and everyone in London was prepared, and she wanted me to be aware. I looked at her and I said, 'oh good!' She said, 'What?!' I said, 'I thought you were going to fire me.' [Laughter.] I had met this young person once. We flew him into New Jersey, when he was a he, to meet me and meet us, but I'd never gone to London. And lived through it, we lived through the transition. And then as my son grew older, and my husband's job became more tenuous, I got a little worried and I thought I wanted a more secure job, so I went to interview with Lucent, down the street. And when I went to interview with Lucent I bumped into friends who worked for IBM,

guys who had worked for me in the past. They wanted to hire me. So I went to interview with IBM and Lucent. Don't remember the time, but it was just when Lucent was starting. IBM sent me to interview with one of their women vice presidents, and she turned me off so much. She was like a man in a dress. I don't mean to say she was masculine, because she wasn't, but she was dry. I mean, I've since learned there were cultures in different IBM businesses. I had come from SCO in California; they go surfing, whatever, but they meet their deadlines. I am pretty rigid but there was something about her; I couldn't see myself being she in a couple years.

Misa: Different companies have profoundly different cultures; that's an important thing for all of us to remember. People think of their own company as being sort of the universal, and if it's the case that your values and your own sense fits, then that's fine. But they are not the same.

Kaufman: No. And again, I never had guidance, do you know what I mean? I had mentors, you know, some of the supervisors I had at Bell Labs. But my parents never mentored me, my teachers, hardly. So you know I kind of learn things by accident. But I didn't feel comfortable with her so I took the job with Lucent, and watched my stock go downhill. [Laughs.] And I was one of two engineers, a Distinguished Member of Technical Staff, hired by Lucent, that was the highest level they had for engineers, and one of two in this CIO organization and I was square peg in a round hole because I was with CIO people, and business people. Even though they were technical, but [they were] not OS technical and I wasn't focused that way, so it wasn't the greatest for me. I did

have some fun. I mean, my job was — I don't know if I said this before — when I worked on that inventory control system, I think I told you that they moved things to minicomputers, they moved things from the big switches to PDP-11.

Misa: Right, yes.

Kaufman: Eventually they moved to 3B2s, which were even smaller, and when I was at Lucent, by then, I was there through the Y2K panic and I did two major things in the CIO organization. One, when they were in trouble for money, I had to oversee every technical acquisition that Lucent labs wanted to make. So I got to know engineers on other projects that way, and I would make evaluations, a recommendation, and then give it to the vice president, and then he would sign off, or reject it and then he wouldn't sign off. The other thing I did around the Year 2000 was to retire the 3B2s in the company. I retired the last 3B2 in the company, and I actually had it delivered to one of my vice presidents and had it put on his desk— we had a friendly relationship — so he could see it. But I remember my director passing by one day when I was on the phone telling someone at the other end of the phone — I'm very matter of fact — if they're not going to shut that computer down, I was going to pull the plug! My director was not pleased with my saying that. Remember, we were told that the 3B2s couldn't roll over into 2000?

Misa: So that's the urgency about 2000.

Kaufman: They didn't know what would happen. Right. She actually heard me say, if they're not going to retire the computer, unplug it. And she was like ARRR-G-H!! And I said, 'There's no other solution, you told me to retire it.' The other thing I did was work with Fujitsu, one of the old source code customers. I had to work with lawyers on an intellectual property agreement. There was one programmer in the world who knew how to support the code that ran, I think it's the 1ESS, which was manufactured by Fujitsu and they thought it had a 2000 vulnerability. And I had to, from an engineering perspective, write the intellectual property agreement, which I thought was fascinating, it was something I had never done before. I got to work with lawyers, and I loved being out of my comfort zone on some things, but still technical. When Lucent was going downhill, (in 2000 I turned 50), and Lucent was spinning off Avaya. I'm in the CIO organization, nobody's paying attention to me. I get a call from my manager at the time, who told me 'You know they're sending engineers to Avaya.' I said, 'Yes.' And he said, 'Well, the new CTO of Avaya wants you.' And I'm like, 'Who is he? I don't know him.' Remember I told you I got to oversee all the acquisitions engineers wanted to make?

Misa: Right, and you had all sorts of contacts across the . . .

Kaufman: Right. And one thing I oversaw was Lucent going into SAP big time; that's where they spent a lot of money and maybe lost a lot of money. I don't mean that SAP was bad, but they didn't have the money, and they spent a lot. So I got to know the SAP engineers, and this guy, who became CTO of Avaya, was their director. They kept giving him the names of engineers to take, he had to take some, and he kept saying no. And then

he saw my name — didn't know me from Adam — recognized my name, and said yes. So I had a choice, go with Avaya or you find another job at Lucent, which was failing, or you quit. So I went to Avaya, and one of the first things they asked me to do was go to Denver, Colorado, where they made the software for these same old switches, these private switches, things like that. They invented — I don't know if you ever heard of Dimension PBX? It was invented in Colorado. And Avaya was in the process of consolidating and one thing they wanted to do was to move from their customized, personalized computer system that supported all the software, and standardize on Sun Microsystem on the Solaris operating system, so that everything would be standard. And in order to do that, you first have to analyze everything you have. They also wanted to standardize their storage solution, and they were moving to NetAppliance. They wanted to retire their computers; that were older than dirt. In doing that, they retired one or two programmers whose only reason for being was to support those computers. But they'd been around a long time. They asked me to go to Denver — this director, and we've become lifelong friends, he's a curious fellow, not a micromanager. He trusted his people and I love people like that, brilliant fellow. My immediate supervisor was a woman and she was afraid to go to Colorado because she didn't know how to talk to these people because they were developers, so she asked the CTO, the guy, to send me. She didn't have the nerve to ask me, so he asked me. He remembered that I came from R&D in Bell Labs [and] wouldn't I like to go meet some geeks? So me being fat, dumb, and happy, I said okay I'll go. And I only had to go once a month to work with them — well, it turned out to be more than once a month — and they ship me off to Colorado. I get to meet all these developers, and I get to work with them on analyzing what is it that we have to do?

What is that we have to move from one computer system to another? They actually published reams and reams of paper showing all their files, papered the walls. They had three terabytes of data they had to move and they had to standardize. It was NetAppliance and Solara and these were literally people who hugged their computers. And they carry guns in Colorado!

Misa: [Laughing.]

Kaufman: I got to visit — there was a former AT&T data center. It was supreme. It was a Level Five data center, which is the ‘hardest’ one you can build and absolutely gorgeous. They rented space there, it was AT&Ts, then Lucent’s, then it was Avaya. In the middle of this while we’re doing this transformation of moving from old computers to the new computers, I’m working with the developers. We had to change the code, so it’s a lot of analysis. Then Avaya decides to sell part of their facilities in Colorado and it’s so big that they gave the mail people tricycles to ride to deliver the mail. I think the building was a mile long, something like that. But they decide to sell the building that has two data centers in it, so the next assignment I get is to [laughs] decommission those data centers and find them places for a new one, because they had built a new structure and they had not included a data center in it. So we ended up putting one in the basement, which is not perfect [but] better than not having one, and we made it as hardened as we could. So that was the other part of my encounter. I mean, it was an incredible building in Colorado, it was older than dirt. Some of the computers were so big that they had moved in the

computers, then they built the walls. So we had to have the walls taken down to take the computers out because they didn't fit through the doors.

Misa: What vintage computers were these large ones, do you recall?

Kaufman: They were NECs. But they also had roof drains — it's Colorado, right? They always have snow — the roof drains ran under the data center, you hear rushing water under the tiles. The tiles in these two old data centers started to warp, and of course I tripped and went flying, my claim to fame — didn't hurt myself, just got really embarrassed. We built a new data center and standardized everything, and when the project was done the people in Colorado took me out to lunch and they had made me a mixed CD of all like Southwestern music and stuff like that, that I still have. And we're sitting there, and there was a gentleman from IBM — he was a security expert — but we had to bring him in as part of the transition just because of the quality of the information that we were moving, you know, to make sure we did it right. We're sitting down and he says to me, so how many years have you worked at IBM and it was like [laughs] we had never said anything. You know I introduced myself, I know I said Avaya, and I guess it went in one ear and out the other. We just worked really hard together. I remember his first name, too, but I don't want to repeat names. So I go back, and then part of Avaya was in Bell Labs building in Holmdel; it's Lucent Holmdel, and they decide to kick Avaya out. So they gave us notice and we found — an old AT&T building in Lincroft, New Jersey. I know you're not in the New York/New Jersey area but they're about a mile apart. Bell Labs Holmdel was this icon. I think it's been sold. And we get this AT&T

building. My next new job is now to oversee the movement of 1,000 people from the Holmdel facility to the new Lincroft facility while we're renovating it, because we had to get out by a certain time, and we also had millions of dollars' worth of labs that we had to move. We actually put them on tractor trailer trucks, and moved them and stored them in the trailers while new labs were being built. The labs were not working at the beginning. My job was to be the IT project manager overseeing the renovation of the new Avaya facility in Lincroft.

Misa: How many different pieces could go wrong? About a million.

Kaufman: Yes. Again, I could write a book about how we had one company coming in at night, decommissioning all the old cable, cutting it out and pulling it, right? Then we hired a local low voltage company, they're electricians but they're not, they're better. They specialize in low voltage cabling, to work on the build — we had architects, etcetera — working on the build out of the new data center and the cabling. One night, the decommissioning company decommissioned an entire quarter of the building that had just had new cable installed that day. They cut out all the new cable. [Sigh.] Things happen. So we built the data center, I was the project manager. Remember I told you I looked very young? And here I am, lady in charge, and the GM comes to me and says, 'You have to talk to the electrical union workers' shop steward.' And I go, 'Why?' 'Because they're bidding on your job. They want the work that the local engineers are doing.'

Misa: Oh.

Kaufman: That's what I said. Now we were moving from Holmdel, not too far to Lincroft. We were moving out of a data center, moving very expensive computers. So I go to meet the shop steward and I'm this little bit of a thing and he's this gnarly old guy. What I didn't tell you was my dad, who had a lot of businesses, ended up working for an electrical supply company. He was a counter man before he finally retired. He used to come home and tell me all these electrician stories. When I got married and when we owned a home, he brought me all these sockets, all these Dacor, you know, the receptacles with the nice flat toggle switch?

Misa: Yes.

Kaufman: [Laughs.] So we had tons. But he would tell me all these electrician stories and all their "characteristics." So anyway, I go to meet the shop steward — and I'm totally naïve — and the GM is standing outside the door in case I run into trouble. He's watching over me, actually making sure the shop steward doesn't yell at me, or whatever. So I meet this old guy, and he said to me because they were union, 'We have a right to your job.' And I go, 'Okay, which part of the job?' Because the low voltage cablers were union as well, so he wouldn't take that away. He said, 'We have a right to move your computers, anything with wires, circuits' — I forget the characteristics — 'those are your computers. We have a right to move them. We want to move them from Holmdel to Lincroft.' I produced my paperwork. I have millions of dollars of insurance on these

computers, and I show it to him and I go, ‘Okay, can you match that insurance?’ Because we had paid companies that move computers that probably weren’t union, whatever. So he backed off; he said, ‘No, we can’t do that.’ But he said, ‘We want the right to move your ladder racks off the truck and into the data center.’ Ladder racks are just like they sound; they actually look like ladders. It was raised tile in those days, they go under the floor and then the low voltage cable sits in it. It gets run along these racks so it doesn’t touch the ground. So they demanded the right to unload our trucks, to move our racks. So I agreed. And we had to hire two electricians. Why did we have to hire two electricians? Well, we had to hire porters — that’s not a problem — and we had to hire two electricians. Why did we have to hire two? What my dad explained to me was electricians in those days always worked in pairs, and one of them was called the “hank,” and you could tell he was the hank because he had a handkerchief hanging out of his rear pocket. And his job was to do nothing. I said to my dad, ‘What do you mean ‘Do nothing?’’ Well, it wasn’t just do nothing, if the other electrician stuck his finger in a socket and was getting electrocuted, the hank’s responsibility was to hold a 2x4 and knock him loose.

Misa: Oh, because you get frozen.

Kaufman: Yes. My dad also explained electricians have very thick thumbs because they’re constantly testing circuits. They lick their finger, get a little shock, they know that the circuit’s live, but they would get calluses, and could not always tell if a circuit was live or not. So you always hired a hank and the hank would literally do nothing, and I

watched him do nothing. And notice, I haven't mentioned women — well, there weren't women in the trades, then.

Misa: Right.

Kaufman: I recall. And I actually had an interaction when I was walking into the building, and there were a bunch of workers and they were doing something, and — how can I say this — I wasn't just young looking, you know I wore jeans, same long hair, I used to look cute, whatever. One of the workers made a fresh remark to me. I don't remember what he said. I remember I ran back to the data center in tears and one of the low voltage technicians was there working on the fiber. He looks at me and says, 'What's the matter?' I said oh, somebody said something to me and I told him a little. The next thing I know, all the low voltage guys have left the data center, work had stopped, they were hunting this guy to make sure I never had problems again. I don't know what happened, [I] asked them, you know, but they were protecting me.

Misa: Wow.

Kaufman: A month before we were supposed to get out of the building, we get a letter from a vice president of Lucent saying, 'We changed our minds, you have a week to get your equipment out.' It wasn't a problem getting our people out, but we had one of these — I keep going back — we had a central system that controlled all the phones in the Holmdel building, it belonged to Avaya. It was seven cabinets [that] looked like seven

huge refrigerators, and it had wires on the top and wires on the bottom, and they were all attached to each other, and they were worth a lot of money, you know, like millions. They told us, ‘You have a week to get out or we keep them.’ So I went to my CTO and I said, ‘Okay, I have a week to get it out, can I do anything I want?’ So I told the vice president of Lucent I can get them out, but I can’t guarantee what the effect will be on the building because I don’t have time to test the circuits, trace the circuits, see whose phones are whose. ‘Have you moved them to another service?’ I have no idea. He told me get them out. So I had two technicians — I’ll never forget — I was nervous as hell because they were taking their time. They were union too — it was an old guy and a young guy. I remember the young guy looked like Schwarzenegger, and the old guy was just an old guy who smoked. They went in for a few days and they started working, but they hadn’t done [anything]. I’m looking, I’m looking, nothing’s happening. And Friday comes, Friday’s the last day and they tell me not to worry about it. They go in early Friday morning and they come to me Friday night and everything’s done. I go to check and not only had they cut the wires, they piled them neatly in the dumpster — immaculate garbage — piled them in dumpsters, separated the cabinets, and I watched as the young guy wheeled the cabinets that had to weigh hundreds of pounds, out on dollies and got them out of the building. Monday morning, none of the phones in Holmdel worked.

Misa: [Laughing.] Oh no. You were doing the job but somebody should’ve done this in an orderly fashion.

Kaufman: But he wouldn’t let us.

Misa: Yes.

Kaufman: Okay, so we got out of Holmdel. I moved on into other positions. I always had men working for me. At Avaya, I don't think I had any women.

Misa: You said, no women working for you?

Kaufman: No women working for me, only men. They were engineers, senior engineers, and I had no women working for me. There were women scientists in the building, but I wasn't in that organization. The technicians were union, they were men; it could've been the times. But then, remember I said I was 50 at some point, and Avaya offered a package, and if you were old enough, they would add five years to your service, five years to your age, and if it added up you could retire. I forget what the magic number had to be. When I went to Novell, and then again SCO, I lost pension benefits, you know I wasn't vesting. So this five plus five eventually helped me bridge it and I ended up with I think 20 years was my magic pension number. Loved my job, loved my boss, I was going on vacation at the time, and I wrote a note saying, I retire, I take the package. So I took the package and left. I didn't leave right away. They kept me hanging on for a time, but it was the right thing to do for my family. I locked in health benefits but Avaya has since changed that and they became very costly for retirees, so I opted out of that. But that's why I did it. I had a young son and a husband, and I get a very small pension out of the deal, so I left. And then 9/11 struck, and the IT industry in New Jersey where I lived

bottomed out. I don't know if you know other people in that position, but it basically bottomed out and I could not find a job in IT. I went into real estate for a few years, which I can skip. That had a lot of women in it, and men, and it's a very challenging profession. I did that for about three years and was just coming into my own when the guy who was the CTO of Avaya had moved around, he had moved to a marketing company. He contacted me and asked if I'd come in for an interview. They were building their North American headquarters in Connecticut. They were closing down five buildings and moving 1300 people to the North American headquarters, would I like the project management job?

Misa: You'd had some experience doing this.

Kaufman: Yes. So I went for the interview. I got lost [because] I just have no sense of direction [laughs]. I ended up along the wrong side of the highway, forced to make a right, you know I was so lost, it was before I had a Garmin. But I made it 95 miles from my house and I accepted the role because it was really exciting. I went to work for Diageo, D-I-A-G-E-O, which is Guinness, Seagram's, Bushmills, Johnny Walker, Crown Royal, you name it.

Misa: Oh right, they're big brands.

Kaufman: Yes. They had merged UDV, which owns Guinness, and Grand Metropolitan. Two European conglomerates merged to form Diageo, which is a made up name;

marketing made up the name. It was at the time the largest premium liquor company in the world. It has since fallen, number one, two, three, four, whatever; you know times change. They recently divested of all their vineyards in California that they acquired within the last 10 years, but now they got rid of them and they're concentrating on spirits, which is what the management really wanted to do. In fact, I think they're setting themselves up for the possibilities. But I ended up as a consultant. I went to work as a consultant. I ran that project, again, closing down five buildings, building a new building. I was responsible for the IT infrastructure including the data center. All the technology that went into that building was mine. And then midway we also decided to standardize their laptops to move from one type to another. I don't do laptops. I'm not a laptop person but I oversaw that project as well. So I became the technical project manager. I'd never studied project management but remember earlier I said I think women are just multi-taskers? I think women are natural project managers, especially mothers.

Misa: Multi-tasking is exactly what project management is about. You're not doing one thing toward one goal, but you're keeping 101 things on track and you need to think in a parallel fashion. Interesting thought.

Kaufman: Yes. And that was probably the most fun project of my life, more fun than the Avaya move because it was huge. And it was a marketing company filled with women. My role at the beginning was to engage all the administrative assistants to get them excited about this move so that they would get everybody else excited about the move, not technical people. I was project manager so I really wasn't part of the organization and

I was a consultant for three years. I worked on different projects for the same guy, always network related, and had a lot of adventures behind the scene. Some of the greatest engineers. I still know an excellent engineer in the U.K., a woman. I never really worked with — I'm thinking hard — a woman engineer in the U.S. There are a lot of women in Diageo because it's a marketing company. There's also a lot of project managers so they come in that way. There are women who — they're not highly technical people to begin with. They think they are. Even the IT department, some of the guys are. But I did consulting for three years, and they had a policy where they had to get rid of consultants, so I left. I was fine, I was going to start a job in Florida. I actually lived full time in Florida and I used to commute to Connecticut every month. Eventually my company rented an apartment, so I lived part-time in Connecticut, part-time in Florida, so I could build this building. Same thing: lots of fun adventures, got to know everybody. I liked knowing the whole team, all the trades. I'd get in early with the painters and stay late, somebody else was there and they'd ask me, 'You coming back over the weekend?' Nine times out of 10 I did because I lived next door. And by then I was no longer married. I still had my son who lived with me on school vacations. He went to school in Connecticut. I used to say he went to a small liberal arts school in Connecticut because I wasn't allowed to say he went to Yale.

Misa: Oh, okay. [Laughs.]

Kaufman: [Laughs.] So he graduated from Yale. But he lived with me summer vacations, and when he was working in Manhattan he lived in my apartment in

Connecticut. Other than that, he'd spend time in Florida with me and with his friends. But I was closer to him because he was in New Haven, and I was in Norwalk.

Misa: Norwalk.

Kaufman: Yes, headquarters. I did that, and I left and a week later, of course, the same boss calls and said would you like to be an employee? It was half the money that I was making, almost exactly half the money that I'd been making as a consultant. But I had a young boy, I wasn't sure of his relationship with his dad. My son was about to start college, and I thought I could use coverage myself. Although part of our separation agreement was I got access to his health insurance. But I said yes, I took the job and became an employee. They hired me as a director. They hired me as an architect first, and again, I moved around a little bit, went from architecture to engineering, because I sort of had my feet stuck in the mud but I always got to work with engineers. One thing I'd say — and I remember you said this about why are things changing — why was there a surge of women, then a lack of women. What stuck my head — and I could be totally wrong, you can write it on a napkin — is outsourcing.

Misa: Outsourcing.

Kaufman: You know outsourcing has taken over in IT, and I think in that regard it takes out the entry level possibilities for women. If you look in the United States, I'm assuming our study is the Americans?

Misa: There's parallel studies, there's a couple of exceptions, but across Western Europe more or less the trends are similar, not the numbers but the trends. Go ahead and continue with your comment about outsourcing because that's something I hadn't thought about before.

Kaufman: I think it takes away the opportunities for women. Diageo has women in marketing. Diageo has women — I'm going to say they're not as techie as I am — you know they've got different backgrounds, they've got multiple degrees, they're smart, they're finance, but they're not the nuts and bolts kinds of engineers. And those engineers, remember I said I know a superb person who happens to be a woman. She's not with Verizon anymore, she's moved to another company. I got to know her when we outsourced to Verizon. First we outsourced to IBM [and] I would say they were 99½ percent guys. No offense to them, they were guys, and I was surrounded by guys again, just like I was when I went to Bell Labs, pretty much at the beginning. But outsourcing has taken on a life where they do look for cheap first; it's a lie that they look for expertise first. They look for companies like Diageo, they look for cost effectiveness first, cost savings, so they outsource and I think it takes away entry level opportunities for women. We even outsourced things like SAP. A lot of the SAP people were women, but they're not employees, they're contractors. And I just think that's different, it's a different mindset. Not that women can't go into that, but it's a different avenue for your career.

Misa: Right. I think there's been quite a discussion about outsourcing having a negative impact on entry level positions, but I'm trying to understand the possible differential impact on women.

Kaufman: It's not just that. I did say entry level, but it's also an entrance into the profession. When they outsource, they outsource to all different levels of engineering, so they take those jobs away. They take away those jobs, they don't belong to the company anymore. So unless you're going to go to the outsourcer, unless you're going to go to Verizon and maybe find the opportunity — but again, remember they talk about cost so it's likely it's not going to be a place where you live that you find that opportunity. I just have a feeling that there's no channel for women now.

Misa: I see.

Kaufman: I meant the *entrance*. I shouldn't have said entry because I wasn't entry level, I mean I had a master's. But even [at] that level the job's not there, they're outsourced. I don't think very highly of outsourcing in general. I'm not saying people aren't great, I mean I worked with wonderful teams of engineers at Verizon and some of them are still my close friends today, you know like family friends. It's how you decide. You don't go to work to develop friends, you're lucky if you find a friend. But I loved working with them because I understood the issues, even if I couldn't speak their language, and I understood their passion. It's the same thing with our vendors. We had vendors in video conferencing. Again, vendors in networking, vendors in telephony — telephony is now a

shared service, everything runs on the network now — and there are always women. But Diageo is a great example, the opportunities are not in Diageo. The IT department has shrunk to begin with [and] men have a better foothold to begin with because they have the history, so they'll find the jobs, I think, before a woman will find the job. And I'd say most of the managers who were left were not what you'd call technical. Even if they managed technical groups, they were managers first, it didn't matter. They could call Tata, that's who they outsourced to last go round for the data centers. They could call Tata and say, 'You go do it.' I'm not saying they don't have women engineers, I have no idea. I'm saying most of the engineers I met were men. You only meet them on the phone. But I just think it's taken that opportunity away for women coming out of universities, with certain credentials. I could be wrong. Like I say, write it on a paper napkin, but I've thought about it from the beginning of our conversation and I didn't want to forget it.

Misa: This is a new wrinkle. Outsourcing has of course been very controversial and a huge movement in company management. It is the case that outsourcing was very strong in the 1990s and that correlates exactly with this diminution, the dampening of women coming into the IT workforce.

Kaufman: Right.

Misa: So that's something definitely we should follow up on, see if we can figure out a bit more.

Kaufman: Okay. What else about Diageo? I retired last December, not out of choice, they eliminated my position. They actually eliminated most senior positions as a cost cutting exercise. They created two new positions lower than mine, which, if you added them up together they didn't make as money as I did. It's not that I made much money. Diageo had great benefits, amazing benefits. I thought the pay was *ehh*, but I never had the get up and go to got out and look, or whatever, and kind of 'head down' kept working. So when they told me, six months before December, that my position had been eliminated, I was not even considered for either of the other two jobs that I could do. I thanked my ex Department Head. I will say that my son had died just before that, and prior to that I had been run over by a car. I mean I had a helluva year one year, but the only thing I think about is my son, so I didn't care anymore. It was a good opportunity, they gave me a severance because I was a director, which is the lowest of the executives, so I had good benefits. I spent this year, [and I'm still] trying to figure out what I'm going to do. I just took a part-time assignment at a grad school in New York. It's a small grad school, a nonprofit, where I had been on the board. And I had been redesigning and managing their web and communications because it kept me out of trouble and they offered to pay me a stipend this coming year to really rev it up and get it on the right track. I said 'yes' because it gets me out of the house. I have a lot of reasons not to get out of the house. I compete in Pro Figure competitions at the few rungs below bodybuilding. I am a small person and the gym has given me focus. I go to the gym. I've been training for six years, so I started late in life because I'm 65, and I love it. But to me, nothing else is important. I'm lucky. I like to say I'm the luckiest unlucky woman in

the world. I could stay retired, I just don't have the brain to stay retired yet, I have to do something else and be with people.

Misa: You need something to do, that's right. It may take a bit of time to sort that all out but you've got just an amazing varied career. These are skills that somebody will need.

Kaufman: Yes. There were jobs. I look on LinkedIn and stuff and think I could apply for that job — if they don't care about the age, because I'm not looking for benefits but the experience — and take it away from somebody who really wants the job. And I don't really want it now.

Misa: Right.

Kaufman: That's the truth. So I traveled the first month of the year. Then I had jet lag the second month of the year. Then I spent months getting all my funds in order and stuff like that, and really struggling to get out of the house. I'll do it. I have just become more and more focused on training; I don't have just one trainer, I have two because I train for different things. But it's fun, I do it because I get those endorphins after the first five minutes, my trainer always says, 'Take it out on the weights.' And he's absolutely right. And he's become, again, another friend. All of 31 years old and I'm going to his wedding, when and if he gets married. He's become just a great friend and I'm very lucky to have met him. So now here we are this year. I was lucky, my Cobra ended September 30th and Medicare started October 1st, how's that?

Misa: That sounds like a lucky stroke.

Kaufman: I'm very lucky. Diageo did right by me. I can't complain about that. People are under a lot of pressure. They're all under cost cutting pressure, and IT is a cost. It's never a profit. And it's a challenge to manage an organization like that. So what have I told you about women? Do we like to talk? I like to talk.

Misa: I wonder if we could just circle back to pick up one topic. You talked about your work in the 1970s and your connection to a certain number of women like Kathy. But I'm wondering if you had any contact or inspiration from the 1970s women's movement?

Kaufman: No, because at Bell Labs, I think, at a certain point, Kathy had it harder. You know, she started when she was told, 'You won't go any farther than you are now.' I started when Affirmative Action kicked in — they were the famous words — and I had this manager who was married three times, for all I know he'd been married four times, mild mannered reporter; you'd never think. [This manager, "S",] he promoted women, meaning he encouraged women. So I think I felt sheltered or whatever. I mean, there was no question about the men I worked with, bunch of geeks, lot of them hadn't seen women. They were ultra polite, so if there was sexism in my area... But Kathy was more, I'm going to say the — not that she started blue collar — but I think she might've known more about it. Her dad was in the telephone company, I think, something like that. So mine was white collar, and I want to say it was I think a little divorced from the real

world. As I said, my director who wanted to keep me, who did everything to keep me when I was pregnant, they gave me my own office because they didn't want me exposed to second hand smoke. [Laughs.]

Misa: Oh really? Okay.

Kaufman: Yes. That's pretty funny. It was like no question. And then I had a complicated pregnancy, I had to leave when I was seven months pregnant, it was no issue. AT&T gave me tons of maternity benefits. I had maternity benefits for eight months, no questions asked. And the part-time [schedule] was after I had the baby, so I'm bouncing back and forth but even when I was pregnant, no question. And my manager at the time was not Kathy, a very fine manager, a woman, but she was a human factors kind of person, the soft science.

Misa: You mean human factors or human relations, HR?

Kaufman: No, human factors.

Misa: Human factors, that's a separate field.

Kaufman: I think it's figuring out how do you develop the interfaces, how do you interface to humans? What should it look like and how should the systems work? But she was also the right-hand person for a man who was a senior manager. He was very strong

promoting her — when I say promoting, I don't mean promoting her job, but encouraging her like a godfather — I don't mean it in a bad way, but there was clearly a man helping her. And I had a manager helping me. He didn't baby me, don't get me wrong, I worked really hard. But if I hadn't had him, I don't know how long it would've taken for me to get promoted. As it was, it took an extra year and a half to get promoted. But because I went to an all-girls school, we were kind of oblivious to boys. We just thought we could do what we wanted to do. We didn't know we lived in an ivory tower or anything like that. And we were encouraged to be smart. There was no issue in high school. College was worse for me because I didn't know how to deal with boys, but I buckled down and looked at the grades. But no, I didn't feel the women's movement.

Misa: What about affirmative action? Some people have said they spent a lot of time assisting with the affirmative action meetings and the process. Was that something that you did?

Kaufman: Nope. I think — and Kathy might remember it better than I — I remember very few women. I can remember the women around me so there couldn't have been many if I remember them. My first office mate and I are old friends; my very first office mate was a woman. I'm trying to remember who else. Kathy was later in my career. When I moved to the C++ people, I had a woman supervisor as well. I remember her name was Carol. The department head was a woman who is a World Champion champion bridge player. She went to work on the stock exchange after the company

broke up, got sold, or whatever, she left and went to work for some big house like Goldman Sachs. She was a brilliant bridge player but I guess that works in stocks.

Misa: Which involves strategy and again thinking towards making the right bids, and I suppose that's the stock market. [Laughs.]

Kaufman: Right. So I've worked for women along the way. Now I'm remembering them, pretty strong women. But no, I don't remember doing anything.

Misa: Well Ann, we've covered a tremendous amount, and this variety is just staggering to me. It's been a real pleasure to have this conversation. I mentioned that if there's anything else that'd be helpful to include in this conversation, now would be a good time to do that. We did cover quite a lot of territory.

Kaufman: Yes. I think in part, again, I was lucky with certain people, because I'm not really great at promoting myself, I will say that. I started to mumble that I'm a good mentor. I'm good at encouraging other people, know what I mean? I tend to be a heads-down, so unfortunately you're talking to somebody who's kind of a heads-down type of person which is probably why I'm not aware of these other activities going on. I worked really hard. If I said anything inappropriate, you'll tell me, but all the stories are true. I keep saying I should write a book, all the stories are hysterical, but only IT people would think they were funny.

Misa: There's a lot of IT people these days, so that might be a retirement project to do some thinking about.

Kaufman: If I could learn to write a book, you know I'm a technical persona! I don't do blogs. I promise you it's true, it's not exaggerated. I can't think of anything else and if you do, pop me a question and I'll be happy to think about it. I hope it helped you. I know we talked for a while, that's why I was asking. But I've been around for a long time, Tom, it's a long career.

Misa: Yes. Well, Ann, thank you so much for your time. I've enjoyed our conversation.

Kaufman: I'll look forward to seeing the transcript, I hope this helps.

Misa: It sure did. Thank you so much.

Kaufman: And thank you for your time today, Tom.