An Interview with

BARBARA JANI

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Conducted by Thomas J. Misa

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Barbara Jani Interview

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Abstract

Barbara Jani graduated in 1967 from Chestnut Hill College in Philadelphia (where she studied with fellow interviewee Kathy Detrano) with a math degree. Her first exposure to computing was at Burroughs Corporation's Great Valley Labs in the Philadelphia area, working on government funded research using the JOVIAL programming language and a reservation system for TWA. For experience with IBM computers, she moved to Washington, DC, and worked for a small company doing government work and then a larger company, Planning Research Corporation, doing military work; and then Boeing Corporation helping run a computing services center. At American Airlines — initially in Tulsa, OK, and later in Dallas, TX — she worked as a project leader on computing systems for personnel and retirement, scheduling, reservations and ticketing. At SABRE (American's computer division) she managed InterAAct, an early company-wide networking scheme; a test center; and company-wide computer security. She discusses changing prospects for women supervisors at American Airlines. She retired from American in 2000.

Misa: My name is Tom Misa. It's the 12th of January 2016, and I'm talking today with Barbara Jani. This is a part of the Sloan Foundation set of interviews that we're doing to try to better understand the careers and experiences of women who worked in the computer industry from the 1960s through the 1990s. Barbara, I wonder if you might take us back to your childhood or high school years, were there any hobbies, or activities, or even school classes that particularly attracted your attention and that might have paved the way for your later pursuit of a technical career?

Jani: I guess I liked mathematics and when I took the SATs I did rather well in that portion. So when you had to put down something for college, what do you want to major in, I put down mathematics and I was stubborn enough that I stuck with it, even though it was hard. [Laughs.] I didn't probably have the preparation that some of the students in my math classes had in high school.

Misa: Could you say a bit about your high school?

Jani: I grew up in Bethlehem, Pennsylvania, and I went to a parochial school. It was quite small, so limited in the number of classes that it had. It had three areas: the academic, which meant you were probably going to go to college; secretarial, which was very popular with the girls and meant that you were probably going to be a secretary, probably at Bethlehem Steel; and then there was the general coursework, those that didn't fit any of the others. So it was very small, limited curriculum, no AP courses. I mean in today's environment, oh gosh, it wouldn't make it at all. It was kind of an inner city

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school, I guess, but I was lucky enough to get a scholarship, went to college, was a math major, and had never seen a computer before in my life until I decided that's what I was going to try to do.

Misa: Where did you go to college?

Jani: I went to college at Chestnut Hill College in Philadelphia and I graduated in 1967. That's some timeline on it.

Misa: Okay. And can you say a little about your classes and your math background at Chestnut Hill College?

Jani: Well I guess they ran the gamut, you know? Initially they were hard, and I enjoyed them very much. I was in math and physics mostly but it was a liberal arts school so you had a little bit of everything, which was good, I thought. And they encouraged free thinking. My study buddy was another person in your grouping, Kathy Detrano.

Misa: Oh, right.

Jani: Yes, so we studied every night together.

Misa: I enjoyed talking with Kathy a couple weeks ago. Can you remind us, in the mid-1960s most high schools had very little contact with computing. Was that also the case for you?

Jani: My high school had no contact with computers. My college had no contact with computers.

Misa: Neither.

Jani: No. I had never seen a computer before I went interviewing. But for a math major back in 1967, there weren't a lot of options, especially for a girl. My mother thought that I should become a teacher and it was like, I had some math teachers when I was in high school and I didn't want to be like them, put it that way. [Laughs.] So I had to find something else to do, and computers were something new and something different, and that's what I pursued.

Misa: Do you remember the first time that you had some experience with computers? Was that at work?

Jani: Yes, it was at work. My first job was with Burroughs Corporation.

Misa: Oh sure.

Jani: Great Valley Labs, right outside of Philadelphia and they had a group of recent college graduates that they hired. There were quite a few in various areas. Most of them were engineers, I'd say, and it was a management training program, if you will. They spent at least a month or more, maybe all summer, showing us all the things that Burroughs did, taking us to various locations throughout the East coast. And those of us that were going on to computers, teaching us to be computer programmers.

Misa: It happens that we have the Burroughs corporate papers here at the Babbage Institute so Burroughs is a very familiar name to us.

Jani: Ah, fantastic. Most people think it's the cookie company and I have to say no, no, no, no.

Misa: No, we know exactly what this is all about. It's a storied company that had a lot of interesting activity. And of course, one of its centers was the Philadelphia area.

Jani: Yes.

Misa: So it was really that first summer, as part of this management trainee program that was your first contact with computers.

Jani: Yes.

Misa: Can you say a little bit what that contact was like, how it struck you?

Jani: Let's see, of all those people that were in these training classes, in this group, there were three women. [Laughs.]

Misa: Three women out of a couple dozen or out of 50?

Jani: Probably at least 30 to 50 people.

Misa: 30 to 50, okay.

Jani: It may have been more, it may have been less, I don't know. And then we finally got into our day-to-day work environment, and there was still the three of us female programmers. We were the first three female programmers that I know of, and there was one female engineer. So we were a minority of four. [Laughs.] And they were taking a chance. They came right out and said they were taking a chance on us [because] young women tended to come in and get married and leave, have a family. Back then, that's the way the thinking was.

Misa: Can you say what your ideas or thinking about computing may have been? I know it's a long time ago.

Jani: Yes, it was a long time ago. Most of the stuff was like a giant puzzle, it was a completely new way of thinking. You were out of school but yet you were in school because the first couple months all you learned is how to program, and we learned assembly code, and something called JOVIAL [Jules' Own Version of the original Algorithmic Language], and there's not many people in the world that know it.

Misa: I don't know JOVIAL but I'm working on a paper that cites JOVIAL, so I actually might know more than you imagine.

Jani: I'm one of the few people in the world that knew JOVIAL.

Misa: Well maybe if I have some questions I could give you a second call, we can have a second conversation about that.

Jani: [Laughing.] Sure, I'll dig out some of my old books and maybe it makes sense anymore because that's like 50 years ago.

Misa: I have a very specific reason why I'm interested in it, so I'm serious, I may well appreciate doing a follow-up on that.

Jani: Yes.

Misa: It's not one of the FORTRANs or COBOLs of the world but it has a very specific relationship to Burroughs, and to the System Development Corporation, and to time-shared computing that I'm trying to understand.

Jani: Exactly. And I worked in all those areas. [Laughs.]

Misa: Please tell me about each one of those. This is really a pleasant coincidence here.

Jani: In Great Valley Labs, they were doing an awful lot of work for the government and most of it was secret, and we had small computers — you look now at the computers and you go oh my gosh! — very, very archaic, and made out of tubes and everything else. That's what I think we learned on. Punch cards, I can remember running around with trays of punched cards and everything like that. The first project was working on a JOVIAL compiler and it was partially developed but not completely, so we were working on the JOVIAL compiler in assembly language.

Misa: In assembly, okay.

Jani: Octal code. So what you couldn't fit in any other way, you hand coded in octal. It was a giant puzzle, so it was very, very interesting. I had access to the telephone number of a gentleman, and I don't remember his name I'm sorry, but he was one of the originators of the JOVIAL language, or the JOVIAL compiler we were working on, I'm not sure which. But he did know Jules. [Laughs.]

Misa: Jules Schwartz was the inventor, or at least the namesake; there's a funny story. Don't want to detract, but [laughs] it's a curious story about how it became Jules' own version of that.

Jani: [Laughing] I've heard the story from a lot of different angles and I forget most of it but yes, it's very interesting. I left Burroughs and got a job with a small company, and the guy hired me because I knew JOVIAL. He was working on JOVIAL language and he knew Jules as well.

Misa: Kind of a small world.

Jani: Everybody wanted IBM at the time and Burroughs didn't do IBM. And then having JOVIAL — in addition to *not* COBOL — was an added attraction, so having this gentleman hire me, and then we learned COBOL, and stuff like that. So it was interesting that one went to the other.

Misa: Burroughs was really doing in-house training. They weren't assuming you had programming experience, let along specific languages. It sounds like they did programming courses, is that accurate?

Jani: Yes, I believe they were very small classes, and not formal, just done for us so that they could train us in what they wanted us to learn. The man who taught it was the man

who interviewed me for the job initially. He was brilliant, I really enjoyed working with him, and he was a good teacher. It was so long ago I don't remember any of the details of it. I do know that I enjoyed it and picked up on it.

Misa: You mentioned several times that this was like solving a big puzzle and that was something that attracted you, that was an exciting thing to be working.

Jani: Yes, I like to be challenged, always have; learn new things.

Misa: How long did you work for Burroughs then?

Jani: I think I worked for Burroughs about three years, I want to say. The actual project that I was hired to do — like I said, they were doing mostly government work, and that was mostly assembly, so what I knew we did on that as well. But the project was TWA reservation system. There was a name they gave to that [George], but the story goes that the people came and were doing a tour and they had some boxes stuck in the hallway that they hadn't completed. These people said oh, this is what we want, so this is what we were developing. And so I worked on that for about three years on mostly the compiler part but then [also] in some of the application areas. [We] helped to install the computer. There was a whole crew of us living in hotels in Nyack, New York.

Misa: That's where the TWA facility was in Nyack?

Jani: Yes. Right by the Tappan Zee Bridge. [Actually, TWA was in Rockleigh, NJ, nearby.]

Misa: Right.

Jani: But then I realized that to further my career I needed to get some IBM experience. Also that's one way to get a little bit more money.

Misa: The idea of computer programming was quite new, and the idea of there being a career track in being a computer programmer is probably not very accurate or helpful, but do you recall, you said that there were three other women. Did they also leave after roughly a relatively short period of time? Did they stay with Burroughs? Do you recall anything about your initial colleagues' experiences?

Jani: They were on different projects. I was the only one on the TWA project, so I'm not sure what happened to them. It was so long ago.

Misa: Sure. I just thought because once in a while somebody stays in touch.

Jani: I hadn't. The one woman had gone to Drexel. You know Drexel does work/study program, and she had done her work/study at Burroughs so she sort of had a leg up on everybody. So she stayed in the area, I believe that she had done work there before. And

the third woman, she was about the same age, she had just graduated. She was married so I don't know if she was going to continue just using that as a job.

Misa: You said that you thought that you needed some IBM experience. Can you narrate your career forward from there?

Jani: Everybody used IBM computers, and we're talking about not desktops, this was pre-desktop, but everybody was using IBM computers. Everything was IBM everywhere and without having that, you were kind of pigeonholed and your chances for any other jobs in the marketplace were very, very limited to expand that. Also I was having fun going down to Washington, D.C., going down for the weekend and partying, and everything like that, so I thought I might as well move down there. I was young, what can you say? [Laughs.]

Misa: What kind of employment options did you see in Washington at the time?

Jani: There were a lot of companies down there, most of them doing work for the government. As I said, I got a job with a small company down there, called EDP Technology, which is long gone. They had contacts in the government through people in the Kennedy-Johnson administration, if I remember; that's how long ago that was. We did work for HUD, Department of Housing and Urban Development. They had contacts out all over the place. I can't even remember what the exact projects were that we were working on, but I know that they were working on IBM computers.

Misa: Were these IBM 360s?

Jani: Yes.

Misa: That was kind of the mainstay of IBM in the late 1960s.

Jani: Yes it was.

Misa: Became something of an industry standard.

Jani: Exactly. As opposed to Burroughs computers, which were not. Lot of the people

that I knew from Burroughs that were working on the same project as I was, most of the

work that they had done — and they had been with Burroughs for a number of years,

these were all guys — they had worked on like all military-type computers, SAC, stuff

like that.

Misa: Right.

Jani: So I was one of those working on the commercial area.

Misa: When you were working on the IBM computers, what languages did you use?

Jani: Mainly in COBOL, some FORTRAN. This next company that I worked with had some teaching machines. It was quite interesting, teaching students how to fix cars or washing machines. Those were DEC computers that we used in those, and they were punched tapes. Do you remember those? Or have you heard of those.

Misa: The paper tape.

Jani: Yes.

Misa: I'm a historian, none of this phases me at all. [Laughs.]

Jani: That was an interesting thing; okay, I ripped my tape, what do I do now? [Laughs.] Go back to step one. Repunch it.

Misa: Right. But it was the same company, EDP Technology that was also doing contract work for somebody that was using the DEC punch tape computers?

Jani: I think one portion of the company had developed their own teaching machines. They were based down in Florida so I got to go down there and work with them on that. It was interesting. Another puzzle. [Laughs.]

Misa: One question — that you addressed directly — is what did you find attractive about computing? What was it that was fun, or interesting, or compelling? This was good

work, interesting work, but you're talking about a kind of intellectual experience of solving problems, of being challenged, other things like that.

Jani: Expanding your mind, constantly.

Misa: Yes. With the second company you worked for, EDP, do you recall roughly speaking what proportion of the technical staff that you worked with were women? Was it about the same as Burroughs or did you see any notable differences?

Jani: Oh, it was way different.

Misa: Way different. Can you say a little bit about the differences?

Jani: It was a tiny, tiny, tiny company. Upper management, of course, was all male. In those days, that was a given, an accepted given, I guess. And then the next level of management was all male, as well. At my level, there were a lot of women programmers. When I say a lot, there weren't that many programmers. [Laughs.] There were about maybe five or six of us; the whole company was maybe 50 people. So very, very small. They were in Washington, D. C., and then they had this other branch in Florida that did different things. I transitioned between the two of them when they needed help down there, and they needed somebody that could figure out what to do, they sent me. It was right about the time that Disney World was opening in Orlando, to give you a time frame. [Laughs.]

Misa: Oh yes. But it was the case that women were reasonably well represented, although the numbers were small, in the programming staff?

Jani: Well the programming and the support staff, there were a number of people that were doing data entry, but it was the type of data entry that we were doing they had to go through documents and pull out the relevant facts to enter. So that's the support staff that I'm talking about, so it wasn't something that you could pull a kid off the street and have them do it. It had some intellectual thought behind it. I didn't do that; these other people did that.

Misa: I suppose your supervisor then was a man.

Jani: Yes, he was the guy who knew JOVIAL. [Laughs.]

Misa: Okay, so the small world of JOVIAL continues, then.

Jani: I do remember his name — it just hit me — Bill Landetta. I have no idea what became of him but a very, very nice man, as were all the people there.

Misa: That sounds like an interesting experience.

Jani: It was because they didn't treat you any differently than anybody else. As a small company often is, it was very easy working together and treated you very well.

Misa: Do you remember thinking at all about the character of people who went into programming? Some people said at the time that there was some kind of types that somebody who was hiring programmers may have looked for, somebody with certain intellectual skills, or habits, or ways of thinking.

Jani: Back in the day, they didn't have many, if any, colleges that taught that, so they looked for people that could logically think and that they could teach programming to. That's why they said that they used a lot of math majors and stuff like that.

Misa: Yes. And how long did you work for EDP Technology?

Jani: Until they went out of business. We had a very sad last party, yes. [Laughs.] So they disappeared from the scene so I had to go looking for a job. I think I worked for them no more than about three years. This three year thing is going to come back. [Laughs.]

Misa: Oh, okay.

Jani: So they went under, I had no choice. My next job was with a company almost across the street from them, called PRC, Planning Research Corporation. I got hired and

most of the people were programmers in the area that I was working in. We were doing government work, we were working on a computer system for attack submarines, or something like that. Again, I got to work on one of the compiler areas. Most of the programming staff were male. There were a handful of women and I had experience by that point, so they brought me in at a higher level than a lot of the other women were brought in, and the other women looked up to me. It's like I could break the ice, as it were, for them. And a couple times they asked me to, because I was rather pushy, I guess.

Misa: What would you mean by breaking the ice?

Jani: Because some of the women were there much longer than I was; I was not the first one brought in. I was brought in at a decent level, I guess, probably a little bit more senior to some of the people that were there for a while. And they felt that the men were getting all the breaks and not the women, that was my take on it. I liked what I was doing, it was kind of interesting, but the politics and everything at PRC were not to my liking so I didn't stay there all that long. I don't remember how long; it probably was at least two to three years.

Misa: Okay.

Jani: But maybe not even three years.

Misa: I take it, is this correct, that PRC was somewhat larger than EDP had been?

Jani: PRC was very large, yes. And they do mostly government work.

Misa: And even the division you were in was much larger?

Jani: Oh yes. Along with all the big politics, and everything else. [Laughs.] And again, the work there was mostly in assembly. It was all in assembly language, I believe, and it was on IBM computers.

Misa: Again on IBM.

Jani: Yes, see why I made the jump from Burroughs?

Misa: Well, there are like these ecosystems, and if you want to be able to move to Florida to Washington, you have to be able to figure out someplace that needs to employ you.

Jani: Yes. But since I did have IBM experience by that point, it was easier to get a job and you had a lot more options. So from there I got a job with Boeing computer system.

Misa: Boeing.

Jani: Yes, the airplane people. Again in Washington D.C., they had a big presence in Washington D.C. And they had time-sharing option. That was the big thing that they offered there because a lot of the government and private companies, they needed access to computers and time-sharing was just coming up. So you take your phone, and you dial a number, and put it in a little cradle, and work on your computer. I did a variety of things there, I believe, and a good deal of it was customer interface. We had clients and we'd work with them, show them how to do things, how to use time-sharing, help them solve their problems, answer phones, talk with them on computer things.

Misa: This was being set up almost like a data center or a service bureau, then?

Jani: Yes.

Misa: So people would come in and be able to run a job, not necessarily a long term client.

Jani: Oh they were long term clients for the most part.

Misa: Oh they were?

Jani: Oh yes they were, we had Amtrak, and a couple big restaurant chains, you know when they were just starting to computerize in restaurants. It was interesting, it was never

dull. And some of them had a lot of things that they had to figure out. Again, a lot of their staff, you know, how do you use a big computer without buying one? Use time-sharing.

Misa: My understanding is that for years, IBM was offering a time-sharing option and it was pretty difficult to get a time-sharing option to work really well. Do you recall any challenges that you had to deal with, with the IBM computers doing time-sharing?

Jani: Hmm. Not really, I don't believe. Again, it was so long ago, I've done so many things since.

Misa: The 360s were the ones that had a time-sharing option but it was pretty weak, and I think by the time the IBM 370s rolled around the time-sharing was much better on them.

Jani: And I don't remember exactly what we were working on then, to be perfectly honest. I do know that we had our own staff at Boeing Computer Services, that really they took the IBM option and they made it work.

Misa: You said Burroughs, but did you mean Boeing?

Jani: I mean Boeing, sorry, yes. Too many "B" words. [Laughs.] Yes, they had a whole staff there in D.C. that was working on making it, you know, doing the interfaces and everything. They were really good guys; and I said guys, remember that. [Laughs.]

Misa: Guys, okay.

Jani: I don't remember any women working; we had a bunch of women working in my area but we were definitely a minority. But that's just the way it was.

Misa: Do you recall any interesting anecdotes or experiences in interfacing with the customer? You said Amtrak or restaurant chains, were there others?

Jani: Those are the ones that mostly I remember. But it's sort of like they'd call with an issue and you had to a lot of times come up with a solution over the phone, which is difficult to do.

Misa: Yes.

Jani: Or you'd have to do some research to find out what was going on, talk to the people in the back rooms, make sure that the customer was able to do what they needed to do.

Misa: So was most of the consultation and interfacing done on the phone rather than being there in person?

Jani: Both. We'd go to the customer's site, work [with] them onsite, [and] they'd come to our site, we'd work with them onsite. But there was also the phone aspect.

Misa: Do you remember anything about your supervisor and how work went for Boeing computer systems?

Jani: No, too long ago.

Misa: Too long ago, okay.

Jani: We had a fun little group. It was a big room with a bunch of desks in there. I think there were possibly 10 of us, and no real partitions or anything and if you ran into too bad of a problem somebody else would come over and help you. There was a lot of back and forth.

Misa: It sounds like that could be a fun, team-oriented work environment.

Jani: It was very team oriented. You could go down the hall and find people who were experts in this area or that area, and work a problem out with them. So that was interesting. And you had multiple projects, not just one.

Misa: Correct me if I'm wrong, that was not working on a compiler then, that was really more on the applications side.

Jani: That was not working on a compiler at all, no. I don't think I did all that much programming at that time but probably some. And you had to understand it to be able to solve the problem.

Misa: Sure, doing that kind of trouble shooting requires a certain amount of ability to think about what the customer is having problems with, and then being able to implement that, however it works out.

Jani: Right.

Misa: Sounds like an interesting job.

Jani: Yes. But then I decided it was about time to get out of D.C. [It] must've been three years. [Laughs.] I don't remember. One of the people I worked with there, or a couple people, had gone to work for American Airlines. American was in the process of moving all their computer systems from locations up in New York to Tulsa, Oklahoma. I really wanted to go to the West coast, but this was halfway there so I ended up in Tulsa, Oklahoma, working on an IBM 7090. There were already 7090s in the Smithsonian at that time. [Laughs.]

Misa: That is to say it wasn't a state of the art machine.

Jani: Right.

Misa: First generation of the transistorized mainframes, if I'm decoding it correctly.

Jani: I think so. So we went from, let's see, the machine that I worked with at Burroughs had this swimming pool underneath to cool it, or whatever, and you were in there twirling the tapes and stuff like that. And you went to the 7090, and then they also had the reservation system and everything else, so they had the whole gamut. But there were transitioning from 7090 and had a few old systems. My assignment was to get the retirement system off of the 7090 onto the IBM 360, and also updated because ERISA had just come into effect.

Misa: And so that was American Airlines, the computing —

Jani: Yes, I was working on commercial systems initially for them.

Misa: So that would be the retirement fund, so personnel essentially, is that right?

Jani: Retirement Benefits Program. And they had different systems for each of the unions — pilots had their own, flight attendants had their own, the various unions had theirs, management specialists, and then the executives. And all of those had to be put in compliance with ERISA. And when I first went to American, being a woman was not an issue for being a programmer. Most of the people, of course, were guys but there was a

fairly large number of women programmers, but all at very low levels, presumably. I think I was one of the higher level.

Misa: Can you zero in about what the lower level programmers compared with the higher level programmers, what their job responsibilities might have been?

Jani: I was brought in as more of a project leader and the others were more coders. They'd be given a specific job and like I'd be given the retirement system. It was a big system. I had to interface with the customers, the analysts that were responsible for running the system, I had to make sure that all their requirements were met, do any of that interface. And then the other people would actually do more of the coding; I did a lot of the coding myself, as well.

Misa: But your job there really was, in essence, a project moving retirement, and then also standardizing or centralizing retirement on the IBM 360.

Jani: Yes. The 7090 was going nowhere. I think they were worried that the little tubes would break and they wouldn't be able to replace them. And we went from, I guess, punch cards to actually using the CRTs to input data at some point. And I believe most of the work there was done in COBOL.

Misa: In COBOL. Barbara, were you involved with hiring programmers, or promoting, doing kind of the HR side? Or were your responsibilities more technical, with somebody handling the hiring and promotion?

Jani: Let me think. When I first started, I think yes, right from the beginning if you had openings and you needed some people to help out, and got that approved, of course you had to put together a case for hiring anybody and have that approved, and then you went out there. HR actually did the probably the initial. You gave them the requirements that you needed, they did the initial screening, and then you had the yea or nay portion.

Misa: Would you be hiring people from within American or would these be recent graduates from some educational institution?

Jani: Mostly we would be hiring probably from the outside. I mean there were a number of people within the company but they were doing their job, and it seemed the jobs were endless, they just kept on and on and on. And with the reservation system, and all — I mean we did everything to run the company. And the company grew, and grew, and grew.

Misa: American, of course, was one of the world leaders with using computing in reservation. SABRE is quite famous.

Jani: Yes it is.

Misa: Did you end up contributing to SABRE as well?

Misa: I worked on all kinds of stuff with American Airlines. I started out with the retirement benefits program. I worked in ticketing. I worked in scheduling. I worked with revenue management. I worked with reservation system, portions of it. I got to know lots of stuff there. I used to get to go to lots of meetings with various outside companies and stuff, and that's where I found myself as the lone woman.

Misa: What was that like?

Jani: Like Gartner Group Conferences and stuff, I'd be representing American a lot of times at some of those, and I was one of the few women. It was interesting because at American there were a fair amount, you weren't the lone person there. But in management jobs, there weren't all that many women. There were a few, but not that many.

Misa: Could you make any observations about the climate for women who were moving into more responsible positions, as you were? Do you think there was good support, kind of patchy support? Within American, I'm thinking.

Jani: It was the old boy network.

Misa: Yes?

Jani: Yes.

Misa: Can you give me any anecdotes or examples of an old boy network?

Jani: When management jobs came open it seemed that mostly the guys got them. Like I said, there were one or two women who were in management positions but that was it, for the longest time. Then somehow, somebody flipped a switch and said oh, we have to get more women involved. And suddenly, it was like they were getting more women involved.

Misa: But for a number of years, it felt that women were not being actively sought for management positions?

Jani: True.

Misa: Do you recall any discussion among the women about that phenomenon? Talk among yourselves or try to figure out strategies to confront the pattern?

Jani: It was hard. There were some male programmers. They had these levels: level one, level two, level three, level four type of thing, and it was hard to jump between the levels. Most of the programmers were — the most you could be was a level three, it seemed.

And there were a lot of good male programmers that never got out of the level three, so it wasn't just females it was hard to jump. Level five was management. It also was a super programmer type of thing, because level fours they just ran out of where you could go from there. I was hired in as a level four, so at that time there weren't that many females in level four. Then they hired a few level fives as well that were female. And some people are not good at management. I don't know if I was but I eventually became one.

Misa: This is a circumstance where it does make some sense to talk about a career path or career track. Level one, level two, level three, level four is a very formal structure rather than people just doing work.

Jani: Right. So if you were a level four, you probably were a project leader and you had more responsibility, and maybe you get a little bit better pay, and then prestige.

Misa: Were there any expectations about having a bachelor's degree, or a master's degree, or MBA, or any kind of more formal management training?

Jani: They would take some people and send them out to get an MBA on the company. As far as I can think, I don't remember any females [having] that being done for them. And beyond the managers, then they had directors, and vice presidents, and whatever. It took a while for there to be any female directors, even. It was hard to get from one area to the other.

Misa: Do you remember any contact with affirmative action policies?

Jani: I'm sure that's what drove the opening up of managers for females. I know at one point I was a manager, it was a very, very technical group. I had an opening and it was like you better hire a female, because I think I had all guys working for me, which is ironic. [Laughs.] It was a very, very technical group and we put together a project called InterAAct, with two "A"s. Everything had two "A"s in it at American.

Misa: American Airlines, right.

Jani: InterAAct, was a Max Hopper idea, I believe. It was an idea to put a computer on the desk of every person who needed a computer. Obviously a flight attendant didn't, but a flight attendant supervisor did to access data. The way they were getting data out into the field, to the different stations and everything, was to print it out in Tulsa, put it on a plane and fly it there — reams and reams and boxes of paper. So our job was to automate all of this. I mean this is the 1980s, late 1980s, mid-1980s, and to do that to the extent that we were trying to do it, Max Hopper would come back and say what does Gartner Group have to say about that? So I'd get on the phone to Gartner Group and say hey, this is what we're going to do. What do you think? And there'd be silence on that end. And then they'd come back and say hmm, interesting, let me know how it works. Then I'd go back to Max Hopper and I'd say, Gartner thought it was a good idea, let's go for it. [Laughs.]

Misa: Oh, okay. [Laughs.] So that was kind of a mechanism for not exactly sharing ideas, but kind of staying abreast of what other people were doing.

Jani: Gartner Group?

Misa: Yes, interactions with the Gartner Group.

Jani: Yes. Like I said, I'd go to a lot of their various meetings and everything, representing either what we were doing at American — I usually wasn't the only person from American — but a lot of times I was the only female in the group, and these were groups of 30, 40, 50 people.

Misa: So that's a good size.

Jani: It was a larger group, yes. And usually they had four different size companies and you'd share groups; I know, I think it was Aetna and large, large corporations that were there, and you'd share what you were doing. Lot of times.

Misa: Barbara, I wonder if I could go back to affirmative action, you said that that seemed to be a moment when there was explicit encouragement to be actively considering women for different kinds of positions. Without trying to pin down a particular date, it sounds like that was in the 1980s for American Airlines?

Jani: Probably so. Yes.

Misa: Would you hazard a guess whether it would be earlier, middle part of the 1980s, or a little hard to tell?

Jani: [Pause] I'm trying to think of when; I just don't remember exactly, I'm sorry.

Misa: But the 1980s?

Jani: Probably yes. I know when I was faced with the oh, you really have to be a woman; and the area that I was looking into was communication and it's like oh, there just aren't any. [Laughs.] But my guys went out and they found one, and she was a good fit.

Misa: Sounds like that worked well.

Jani: Yes.

Misa: It seems like a lot of companies, when affirmative action came through, they really had to spend extra time on hiring, and oftentimes spend extra effort to find somebody who would meet the affirmative action guidelines but then also be able to do a really good job with the work.

Jani: Right. And that was something that I found a bit disconcerting because a lot of times they just hired to meet the numbers, whether the person had a good background or not.

Misa: Yes.

Jani: Or met your qualifications.

Misa: You're suggesting [that] to meet their affirmative action guidelines, or target, they would just hire somebody. That's not necessarily a great service for the person, let along for the organization.

Jani: Right.

Misa: It sounds like it was the 1980s that American Airlines —

Jani: I'm thinking actually it was late, late 1980s when that happened.

Misa: Late 1980s.

Jani: Yes. I was trying to put a timeframe on it in my mind and it was probably later in the 1980s.

Misa: Later in the 1980s.

Jani: Yes. Because I moved down to Dallas from Tulsa I think right around 1990 and took a manager's job there. That's when I had been told, okay, you have to make this quota, or whatever.

Misa: Can you say a little bit about your responsibilities with the Dallas manager's job?

Jani: Okay, I was manager of the technical group for this InterAAct project, which was my first management job. Most of the people had already been hired before I came on board so I had my grouping ready, taken care of, my boss did that. My boss, I had worked for him prior to this, in another capacity in Tulsa. So he knew me and I knew him; that was not an issue. He was very good, and I think out of his four managers, two of them were women. So think that was enough. [Laughs.] Our whole project, his whole project was this InterAAct he headed. All of the project was his responsibility. And he worked for a woman VP. He was a director and he worked for a woman VP, the first woman VP in the computer area. She was brought in from IBM. Didn't like her for a number of reasons. [Laughs.] She had no respect I think for anybody else. I'm sure it was hard for her, in a way, but she was like IBM is everything and she didn't try to understand, or anything like that. She was a bit older. I was not the only one that didn't like her.

Misa: The people that I've talked to have said that IBM had really a distinctive company culture. They sort of looked outward from there. And especially during these years when

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they were so dominant in computing, they may have been forgiven the conceit for thinking that there was no other way of doing business, which of course, is a pretty strong statement that many people could find a bit off-putting.

Jani: Right. Well this InterAAct project that I've mentioned many, many times, we were using the desktop computers. First it was desktop, and then we immediately introduced laptops, as well, because we had people on the road. Integrating software from HP, Microsoft; I mean before Windows 1.0. I mean we were on the bleeding edge, trying Windows, Excel, PowerPoint, all of those things on the desktop computer. You had Novell, you had Cisco, you had all these vendors, some of which have bit the dust, some of them are still around. You were integrating all of this stuff. Pretty interesting.

Misa: You were building really an American Airlines computing network. Some version of what we take for granted today, but this was not in any way something you could take for granted.

Jani: Yes. That's what I said, I'd call Gartner Group and say what do you think? And they'd say hmm, let us know.

Misa: Yes.

Jani: But that was interesting, doing that. But here's this lady from IBM. When something goes wrong on that, and you have anything that could go wrong, she was, 'Get the people from IBM in here, they'll fix it.'

Misa: They'll fix it. [Laughs.] No, that might've worked for IBM, it doesn't sound like quite the right mix.

Jani: And get everybody in. I mean I had to call people just the level under Bill Gates to come in from Microsoft. We find all kinds of things that could go wrong, and they did! And then you had to make it right.

Misa: Besides this contact with the Gartner Group, were there any other external sources of inspiration or ideas, or things that you were trying to adapt and make useful, with InterAAct, the networking project?

Jani: We worked with all kinds of people within Microsoft, within HP, I mean I'd be back and forth to England once a month or something like that because we were using an e-mail system — that's the other thing that we were introducing there, too, is e-mail. The early days. [Laughs.]

Misa: Yes.

Jani: And eventually, internet. Not day one, but right after. So it was pretty heavy stuff. It was a lot of fun. It meant for a lot of sleepless nights. [Laughs.] But you were coordinating all of that and working with these groups, it didn't matter that you were a woman or anything like that. You were the contact point.

Misa: So you felt pretty well supported, that was part of your work nobody paid a moment's attention?

Jani: No, like I said, for a long time I had all guys working for me. I think I had a group of about 15 or so and they ran the gamut. They had airline experience. They had computer experience in various areas. And back then, everybody in America was working on mainframes, nobody knew much about PCs. This was the start of it.

Misa: Right, yes. Barbara, you said you had a couple of management jobs. InterAAct was the first of those?

Jani: Yes.

Misa: Can we move on to some of the others?

Jani: The next one was putting together a communication group, a test center. We were doing all kinds of stuff there. I was also in charge of computer security for American

Airlines, that was just part of it. I'm glad that's gone away; in this day and age, can you imagine? I had two people working on it for me.

Misa: For the entire American Airlines?

Jani: Yes.

Misa: Wow.

Jani: Yes. And we also were putting together a system that would basically keep track of everything that was going on within the communications area. I had that job for a while; it was less than satisfying, it was one of those things that I was assigned to. From there I found a job in consulting. It was a brand new group that this guy was putting together.

Misa: Still within American Airlines?

Jani: Oh, this was Sabre, not American. It was before they were officially split, but they were now calling the computer side Sabre, but it was still part of American Airlines. And Sabre, that was anything to do with computers.

Misa: Not merely the original reservation system.

Jani: No, there was an area called STIN that was — they had developed some smaller systems, like revenue management, which American or Sabre was the first to deploy; and other systems like that, that were airline based. The idea was if we had this consulting group within Sabre we could go out and consult with other airlines, and tell them how to run their business better. We weren't looking at the Uniteds, or the Deltas, or anything like that, but there's the next tier of airlines that are fine airlines, but needed some help in integrating some of their diverse systems. Because airlines tended to have one-off systems for everything and they didn't talk to each other so they'd have multiple points of entry of data, sometimes not accurate and wasn't working very well for many of them. So the first airline I worked for was Cyprus Airways, which no longer exists.

Misa: Cyprus.

Jani: Yes, on the Island of Cyprus in the Mediterranean. [We] worked with the whole company from the top guy on down, we had meetings and we looked at what they were doing and told them how they could do it better, came up with action plans, and helped them. Worked with them for about three years trying to get their IT department up to snuff and get their systems integrated, and everything like that. Think it worked fairly well. But I mean different countries have different environments for their employees. For instance, Cyprus Airways had two different unions for their engineers, I believe it was. One could go out on strike and the other one wouldn't, and they could strike for any reason that they wanted. It was like OH-KAY. [Laughs.] It was interesting, put it that

way. I got to learn different cultures and the way different cultures worked, and learned a little bit about different languages.

Misa: You must have spent quite some time in Cyprus.

Jani: Yes, but on and off. I think I was there for at least three or four years.

Misa: Three or four years.

Jani: Yes. Lovely place. Worked with Pakistan Airways. Luckily it was before the various wars over there, but we were there — I wasn't there personally but we had a project going on — I was on vacation at the time that they had a big military coup. That wasn't very nice; we left very much out after that. Even though I was on vacation I was working to try to get the team out of the country alive. That was also interesting.

Misa: Doesn't sound like the sort of thing you learn about when you're learning COBOL.

Jani: No.

Misa: How to extract your people from a war zone.

Jani: By the time I got to the consulting bit I wasn't doing any programming at all anymore, and was just doing project — well, I shouldn't say that — we were helping them out a little bit but mostly they were doing their own thing. But you had to know that because you had to know how different systems integrate, or not. So I did consulting for probably about four or five years — beyond the three [laughs] — and all of a sudden one day, I was working on a project for Singapore Airlines. I was supposed to go over there and I was called into an office and they said we're doing away with your job! It's like okay. What they had was they had to get rid of some staff, and I worked for a guy — not directly, he was a couple levels up — who was Australian, who didn't really care for women and didn't see any value that they brought to anything. Although any time that he needed work done on projects he'd throw it my way. So I could do all of his work and he took all the credit for it. Anyway, I was let go. I was told to look for another job within the company but the package was too good to do that and I was just turning 55 in another month or so.

Misa: The package in the sense of a severance package?

Jani: Yes.

Misa: Okay. So you decided to take the severance package?

Jani: Yes. You knew that the severance package that they were giving was not going to last forever, and it was lucrative. And I'm single, [I] don't have family that depends on me, so I retired.

Misa: At 55. Well?

Jani: At 55. I was going to do consulting, that was in the year 2000, and the bottom dropped out of the market. Everybody was having a hard time and the couple of consulting gigs that I did get offered, they were for very low — not the kind of money that they would offer a guy. And I also knew how the person that offered it — how I would be used. I would be paid for 40 hours and expected to work 80.

Misa: Oh, well that's a nice way of halving your pay. [Laughs.]

Jani: Yes, and it was low to begin with because I knew what a lot of the guys were getting for consulting gigs. And they were not offering it to me. It was like, I don't need this.

Misa: So you had some friends or colleagues that were doing similar work that you could compare notes and get a general sense of what the appropriate pay would be.

Jani: I was doing the consulting myself, you know I was running projects or else working on various aspects of it, and a lot of times we'd bring consultants in from other

companies, or just independent consultants who had knowledge of a particular area that we needed. I knew what they were getting, and it was a lot more than they were offering me. You know, they were getting hundreds of dollars and they were offering me less than $50 an hour.

Misa: Oh, okay.

Jani: So it's like no, I don't think so.

Misa: It doesn't sound like the right thing to do.

Jani: Yes. So thus ended my computer career.

Misa: Barbara, I wonder if you could maybe step back a little bit and reflect on some broader themes. Did you have much contact or draw inspiration from the 1970s women's movement?

Jani: How do you mean?

Misa: Some people found that there were strategies, skills, awareness, idea of women banding together, that was all supported by the wider women's movement and they brought that into their workplace.

Jani: Maybe a little. I met Gloria Steinem once.

Misa: Yes?

Jani: And liked Bella Abzug, and all of those people. I was aware of all of that and I was maybe on the fringes of it, but I wasn't actively involved I don't think.

Misa: Were there any women's networks within American Airlines?

Jani: No, not that I was aware of at the time. You know there was a group of us that would go out. I have a bunch of friends still that get together and go out, and we complain a lot. But what could you do?

Misa: Then a second question, and it's really maybe a more subtle one but it bears on the question of the climate for women and how that might've changed in the 1980s and 1990s. You discussed and described a very specific set of experiences connected to affirmative action, but did you see anything that we might look for in the culture of computing, and specifically the climate for women that might be worth us following up on?

Jani: Thinking back, I don't know. As both project leader and then as a manager, I'd interview people and usually I was looking for a skill. But I also hired women and if they had the qualifications I'd hire them over; you know, give them a break.

Misa: Sure.

Jani: I can remember, I met this one woman who was in a wheelchair and she was an excellent programmer. This was when I was still up in Tulsa. She had broken her neck years before in a diving accident, and very, very good mind, and everything like that. A very, very good programmer but because of her physical limitations — I assume it was that — and it could have been also because she was a woman. I would like to think it wasn't but it could've been. She had a hard time interviewing and getting a job within American. I know I went to bat for her a couple of times with a couple different males there, and one guy, he was just a bit of a pain in the butt, he wouldn't hire her. I'm not sure if it was a physical thing or the fact that she was a woman, or the combination of the two. But you know, I felt really bad for her and I did everything I could for her to get her hired. As far as I remember, she did get on and she made a great employee.

Misa: Really. Okay.

Jani: Yes.

Misa: Well, that's a success story then.

Jani: Yes. But you know in Dallas, I ran into the same thing with some gay guys; nobody wanted to hire them, and I did. They had the same stigma, or worse, than women did.

Misa: Yes.

Jani: So anyway, it depends on the person's ability, not what they look like, or who they are.

Misa: Right. And workplace culture has changed over the years, too. An interesting thing to try to understand better.

Jani: It is. But like I said, some of the gays had just as hard a time or harder than women had, and then others too, so go figure.

Misa: So Barbara, this has been a wide ranging interview. You had your three to four year period, and then your slightly longer four to five year periods.

Jani: [Laughing.] Interestingly, after all my three-year stints, when I finally left American Airlines, I had almost 26 years with them. I had a variety of jobs and that's why I stayed with them for so long because I went from one thing to the other, to the other. You know, you got bored with one you could find another job in another area and learn that. None of it was boring and all of it was challenging.

Misa: Yes. That way you racked up some seniority in the American Airlines organization, too.

Jani: Yes, but that didn't matter as much, I think, as I wasn't bored. There was always plenty to do there and lots of puzzles to solve.

Misa: What do you think was your favorite project or work assignment?

Jani: I loved the InterAAct project because it was a groundbreaking thing, it was written up, my boss got written up in various journals and stuff like that. I dealt with so many fantastic people. I did get to meet Bill Gates more than once.

Misa: Oh really? Interesting.

Jani: Yes, he did come down to meet with us on a regular basis.

Misa: Well you were doing interesting work, and American was a big client, so I'm not surprised.

Jani: Yes, American was a big client for everybody. I can remember one of the guys that worked for me, and we used to sit around, it was a Friday afternoon, I think; you know, Friday afternoons are kind of dead. He found a little app, you'd call it now, that some little tiny company had developed and he thought it would be great on our computers, it would help out. So he had me make the call to the company, tried to find out if they'd be interested in selling it to us. They usually sold it for a couple hundred dollars, and it's

like, well I don't think you understand the quantities that I'm talking about. [Laughs.] You could blow their minds. This was a small company and you're talking about tens of thousands.

Misa: Tens of thousands,

Jani: Yes. [Laughs.] It's like, okay; I got off the phone and just cracked up laughing. And we were serious about what we were doing. We'd go to these shows and you'd talk to some of these vendors, and you're like yes, but I want to put it on thousands of computers in my company and you have to give me a deal on the price. [Laughs.] So I kind of got good at that, and I used to do it and just watch peoples' jaw drop.

Misa: Must have been fun.

Jani: Yes.

Misa: Well, Barbara, are there any other topics or questions or things that you might like to speak to, just to make sure they're included in our conversation?

Jani: Think I've talked myself out.

Misa: We covered a lot of territory.

Jani: We have. And if you ever want me to get out my Burroughs books and talk about JOVIAL, give me some advance warning.

Misa: I've actually been puzzled about JOVIAL now for about six years, and I'm not just making this up.

Jani: [Laughs.] If I could remember some of these things; it's been so long ago, there's been so much since.

Misa: Yes. Well, Barbara, thanks so much for your time this afternoon. [I] really enjoyed our conversation. Thanks so much.

Jani: Good talking to you.