Oral History of Benjamin “Ben” Rosen

Interviewed by:
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David C. Brock: I would like to begin at the beginning, as it were, and ask you about your childhood. I understand that you were born in New Orleans.

Benjamin "Ben" Rosen: That's right.

Brock: And I wondered if you could tell me a bit about your immediate family. I know that you have an older brother, Harold. But if you could tell us about the family that you grew up in, in New Orleans.

Rosen: I grew up in the Depression. In fact, the day I was born, President Roosevelt, who just had taken office a week earlier, closed the banks which I thought was in celebration or <laughs>—something to do with my birth. Anyhow, I was raised by my mother from the time I was seven years old, and my siblings, Harold, my brother, was seven years older, my sister was nine years older.

My brother was a primary influence on a large part of my early life. Essentially, what he did, I did. He studied engineering, so I studied engineering. I was always tilted toward math and science as a youth. He went to Tulane and then Caltech for his graduate study. I went to Caltech for my undergraduate. He was influential in my becoming an electrical engineer, which he was. But then after about four years of working as an engineer, I realized I could never compete with him.

He was really unusual. Among his many achievements, he's acknowledged as the father of the geostationary communication satellite, which the original name was *Syncom*, and then when it went commercial it became *Early Bird*, first satellite to transmit communications around the world on a regular basis. There were earlier communication satellites that were essentially stunts, such as AT&T's Telstar, where you could communicate for 20 minutes at a time <laughs> but that's not a very good commercial solution.

Having worked as an engineer, as I mentioned, for four years—I stayed in California for a couple of years after years of graduate school at Stanford. Was living on the beach in Malibu with my Austin-Healey and my collie. Some would say that's an idyllic life, and it was. But I felt the call for New York, and I wanted to go to Manhattan. I sold my car, and I gave away my collie, and I moved from my house on the beach in Malibu. I tell people the real reason I left is my rent was raised from $55 a month to $65. I thought that was outrageous. So I moved to a fourth floor walkup apartment in Manhattan, but I was here.

I worked a couple of years in New York for Sperry Gyroscope Company, reverse-commuted to the Island. There was something about working in a facility, a single facility in Lake Success, New York, that had 19,000 people under one roof. It was so large that they had to have three lunch shifts. Even though I was an engineer, we had 42-minute lunches. You had to listen for the whistle that began your lunch and ended your lunch and discriminate from the other four whistles for the other two lunch periods.

<laughter>

Rosen: This wasn't for me. I went to Europe for six months to decide about what I really wanted to do in life, and didn't answer the question, but came back with a wonderful tan. I stayed three months in the south of France and

three months in the south of Spain. Ran out of money and came back; went to the Columbia Business School, got an MBA; worked two summers to support myself in Utica, New York, temporarily as an engineer. But then, spent most of the next 15 years near or on Wall Street, as a technology securities analyst.

Brock: Perhaps, if I may, I'd like to ask you some questions about that sequence. One was in your youth with your older brother, following him, competing with him, sharing interest with him, did you engage in, kind of, technical hobby activities in your household? Were you into radio? Were you and your brother tinkering? That sort of—

Rosen: Well, he was—he got started when he was 14 as a ham radio operator and that's what accelerated his career path. He was seven years older, so by the time I was his age, he had already moved on. The guidance he gave me was as follows: when I was three years old, he taught me math stunts. So, he would teach me to say, "One and one is two. Two and two is four. Four and four is eight." And this goes on for a long time.

So my sister, who is then, I think in high school, took me with my stunt—I went all the way up into the millions at three years old. A million, forty eight—five thousand, forty eight thousand, five hundred, seventy six. A million forty—so forth, and so it really wasn't that much of an advanced mathematically. But to see somebody this big saying that on a stage, at a high school, gave them a big kick. So that was about the level of it.

<laughter>

Brock: In your education up until high school, was that in New Orleans?

Rosen: Yes.

Brock: And was school something that was easy for you?

Rosen: Pretty much. Pretty much. Getting into Caltech then was an achievement, but nothing like it is now. I don't know how those kids get in there. <laughs> They're some—I'm on the Caltech board, so I stay in touch with it closely.

Anyhow, in terms of—he gave me books. I still remember two books, *Men of Mathematics*,[1] about the great mathematicians in history, and *Mathematics and the Imagination*.[2] And the highlight of *Mathematics and the Imagination* today, is that there's one chapter that—where a mathematician named [Edward] Kasner, I believe, was teaching his nephew about large numbers. And he told him about large numbers, one followed by a million zeroes. He asked his nephew to name it. And the nephew named it, I think after the comic strip at the time, "Barney Google." And that's the origin of the name googol, spelled differently from today's Google. Those were a couple—so he was influencing me in this field when I was young.

[1] Bell, Eric Temple. 1937. *Men of Mathematics: The Lives and Achievements of the Great Mathematicians from Zeno to Poincaré*. New York City: Simon & Schuster. Added by Frances Corry on August 10, 2018.
[2] Kasner, Edward and James R. Newman. 1940. *Mathematics and the Imagination.* New York City: Simon & Schuster. Added by Frances Corry on August 10, 2018.

Brock: Was education a real theme of your household? Was that something that your mother was strongly encouraging?

Rosen: Oh, yes.

Brock: And you went away for high school, is that—?

Rosen: No. I stayed in New Orleans. My siblings went to the public high schools, and I went to public K-8, to three different ones as it turned out. But for the baby of the family, it wasn't good enough. <laughs> So I went to a private school, a very fine school. The school where Walter Isaacson went, and the Manning brothers, and—anyway, it's the best school in New Orleans.

Brock: What is it called?

Rosen: Newman—Isidore Newman School.

Brock: Okay. Had anyone from the school gone to Caltech or was that an unusual—

Rosen: I don't think anybody. No. Nobody. Before my brother did. He went to graduate, and I went to undergraduate school.

Brock: Was he in graduate school while you were there as an undergraduate?

Rosen: He was. He was getting his PhD during the first year I was there.

Brock: In double E [electrical engineering]?

Rosen: Double E in aeronautical engineering. He was working at Raytheon at the time, and then later left to go to Hughes [Aircraft Company] where he started the communication satellite business.

Brock: Okay. Caltech in the first half of the 1950s, I would be interested to hear your impressions of it. Quite a cast of characters on the campus in terms of faculty. Impressive characters. What was your experience like of Caltech?

Rosen: Well, I like to say that the year I matriculated, 1950 was a highlight year, because that year, Richard Feynman joined Caltech. Gordon Moore joined Caltech as a first-year chemistry grad student, and I joined as a lonely undergraduate. <laughs> The big three.

Brock: Was Carver Mead there yet? Or did he come after? I can't remember.

Rosen: He came after.

Brock: Oh, okay.

Rosen: He's a youngster.

Brock: <laughs> A young upstart. Well, we were talking earlier, you had Gordon Moore as your teaching assistant for [Linus] Pauling's *Intro to Chemistry*.

Rosen: Right, for *Intro Chemistry*. Yes, Pauling taught the—there were 180 freshmen. He taught the lectures. I think there were two lectures a week. One—I think two, and we had three lab and tutorial section—anyway, Gordon was my instructor when I was a freshman. He was first year.

Brock: Was he good?

Rosen: He was good, he was good! I didn't know he was going to turn out the way he turned out. <laughs> But, yes, all the people there are terrific. I mean, it's a special place.

Brock: Gordon Moore's description of that course and that teaching experience was that Pauling would—his recollection was Pauling would come in and lecture about whatever happened to be of interest to Pauling at the moment. Was that your experience?

Rosen: <laughs> That's an overstatement. Overstatement. But he was unusual. I remember in one lecture he caught me looking at my watch and asked me if I would like him to wait until I was…

Another time, he was so distraught about the writing capability of the students—he would actually grade papers of 180 students. He made us write one paper, not on anything to do with chemistry, but anything we wanted to, and the entire grade would be on our English. He was unusual.

Brock: You were gravitating toward electrical engineering throughout the entire—

Rosen: No, I was—I went to electrical engineering because Harold did. My brother did. No, really. I mean—there was a strong gravitational pull. My first year after school, I worked for him for a couple years at Raytheon.

Brock: Okay.

Rosen: No, it was a very strong pull. It wasn't until about 40 or 50 years later that we worked together. That's a later story.

Brock: I hope we can get to that story because I think that's very interesting also.

Rosen: We started a hybrid electric, power plant project.

Brock: Extremely interesting. In light of your later experience, I wondered to what extent electronic computing was in your frame during those Caltech years. Was that—

Rosen: No.

Brock: —at all part of the scene?

Rosen: I don't think so.

Brock: Well, from Caltech, did you go then straight to Stanford for your master's?

Rosen: Yes.

Brock: Okay. Could you talk about why you chose Stanford?

Rosen: Stanford was appealing for a lot of reasons beyond the academic attraction. At that time, Caltech was men only. It had students that were primarily interested in science and technology. Stanford has this astonishingly beautiful campus, it has lots of women <laughs>, and it has people interested in everything in the world. I was ready for that.

Brock: And you were in the electrical engineering department?

Rosen: Yes, getting—

Brock: Was there a person in particular who you enjoyed working with, who was influential on you at this time?

Rosen: The only one I remember is Bill [William] Perry, who later went on to other things and became Secretary of Defense and is one of the—I think heroes of our country. But no, my relationship with Stanford was much different from that of Caltech. I feel that Caltech is where I learned, if you will, learned how to think. Pedagogy was done differently at the two. I learned electrical engineering at Stanford. I learned science and how to think at Caltech. Different type of—Caltech at the time, didn't have very much engineering at all for undergrads. It was mainly, you learned the basics, and you would learn engineering later in your life.

Brock: What was the nature of your thesis work? What interested you in electrical engineering at this time?

Rosen: I didn't have a particular interest at the time. I was just—not focused on anything.

Brock: I was interested in your impressions of Stanford and its surroundings. Stanford Industrial Park is starting to happen. Shockley Semiconductor Laboratories—

Rosen: They were invisible.

Brock: Pops up.

Rosen: Invisible to me.

Brock: Was any of that, or Varian, HP, were any of those—

Rosen: They were there, but it was not explosive the way it became later. Wasn't part of my life. There were startups starting, but remember, this is all pre-Internet. And startups start slowly over a period of time. They take lots of money and time. It's different now.

Brock: As your time at Stanford came to a close, could you just talk about that your next step? I guess that was to go to Southern California—oh, I'm sorry.

Rosen: No, I went from there to—oh, I'm sorry, I went to Stanford right after Cal—I went to Southern California to Malibu.

Brock: Right.

Rosen: Right. Then I came back after a couple of years in Southern California to Stanford. Again, for a year, and I thought I might get an engineer's degree at the time. After a year I decided —I could feel my whole interests changing. I was more interested in not just the business world versus engineering, but the whole world versus engineering. I had this real interest to go to New York and participate in a different world which it took me about 50 years to get in completely, but I finally did. So, I then went to the Business School and then into becoming an analyst.

Brock: An interesting time for—for certain in New York City, 1960, 1961 while you're at Columbia. Could you tell us a little bit about your experiences at the Business School there? The sorts of things you encounter, was this your first real engagement with the world of business, your time in Columbia? How would you characterize it?

Rosen: Unexciting. It really was. I thought it was easy. I didn't think it was intellectually stimulating. I mean, I later went on to become the chairman of the Business School Board of Overseers. But that was years later. I really didn't blossom either in my interest or accomplishments 'til late in life. I think my first years to, I don't know, middle of my analytical career, I'd give myself a C. Just average, another person out there.

Then when I became an analyst and I think having been an engineer previously was helpful. It wasn't common then, it's almost de rigueur now that you have to have worked in the field you're covering as an analyst, but then it was unusual. And also discovered that I was innovative in a way that differentiated me. I got the idea to write a newsletter when I was in the '70s sometime. And I also started conferences. Technology conferences. Now there are zillions of conferences, many zillions of tech conferences. But somebody had to be first. <laughs>

Brock: I was wondering about that. The Semiconductor Forum first, correct? And then, later also—

Rosen: Personal Computer Forum, before there was an industry. The first one was in '69. And we had I think we had six companies: RadioShack and Apple, and—can't remember the rest of them—and about 50 people.

Brock: '79.

Rosen: Did I say '60? '79 I meant.

Brock: Yes. Right, okay.

Rosen: Right. And the Semiconductor is a little before, but then…only did them a few years, and then I sold the business when I went into the venture capital business. Those were good. They had good side effects for me when I went to venture capital. Because the letter and the conferences, sort of put me at the nexus of those two industries. So I got to know everybody in the industry. It gave me a lot of name recognition, if you will.

I didn't set out to do that–I set out, because I really got bored of having been an analyst for 15 years, and I wasn't going to write another report about another company saying you should buy this stock or sell this, which–I didn't know if you should buy them or sell them <laughs> as it turned out. So I was really more involved in the marketing aspect of it then in the analytical aspect.

Brock: When you worked as an analyst, was that at Morgan Stanley for the entire time?

Rosen: No, that was five years. I did 10 years earlier at a tiny firm, a boutique.

Brock: What was that?

Rosen: Named Coleman and Company. It's a name not well known then or now, but we had a half dozen analysts and had a nice reputation as solid analytical firm. And that's when I started these new products.

Brock: How did you gravitate—

Rosen: I did lunches too. That's right, I'd have "Tuesdays at Coleman." And every Tuesday, I'd have Zabar's cater—Delicatessen, from upper Broadway—actually lower Broadway where our office was, and I'd get a CEO to come and talk to about 15 clients. And so, that was another product. The lunches, the conferences, the newsletters, anything not to write a report.

<laughter>

Brock: When—

Rosen: In the newsletter, I used humor a lot.

Brock: I've read them.

Rosen: Well, what I thought was humor. <laughs>

Brock: It is humorous, yes. It's unexpectedly funny, I think. Having read some other offerings in the genre, it does stand out. I was interested in how you gravitated toward becoming an analyst for semiconductor companies. What was behind that? What was—

Rosen: I was an electronics analyst. It was called electronics analyst. But semiconductors were a very active area. I mean, instruments was part of it, and electrical equipment, although that was boring. It was semiconductors that were the hot thing. Where the startups were, and the younger people. New technologies.

Brock: Was that then the same sort of reasoning that drew you into personal computing, same sense of excitement?

Rosen: It started with the earlier products of semiconductors which were handheld—handheld calculators and watches. Those were big deals then. It turned out I became an avid hobbyist. Whatever the newest product was coming, I'd play with it. Part of the marketing is you got to go to a financial clientele and why they should buy a stock and—so you could tell, "Well this, when it came to these devices, they're going to sell millions of these, and this is hot." And I liked to demonstrate them. I'd make up all sorts of little demos for these things. And I carry that on when it came to personal computers.

But the link to personal computers is that—is really Mike Markkula, whom I'm sure you know. I became friendly with him when I was analyst following Intel and he was a marketing manager. We used to share this interest in calculators, and so that developed. Then, I got to know Apple very well from the time that started, but shortly after that through Mike.

I got one of the earliest Apple IIs. I think they gave me a loaner. I didn't buy that one. I became a big evangelist of personal computers because it was fun. I taught myself BASIC, so I could do some progr—because there was no programming. There were games, and there were—word processing was started then.

But I would like to go around clients and tell them how even though Apple was still a private company, they'd go public someday, but there are other companies. All the companies were going to come in it. It was going to be a major industry, and it met with a lot of skepticism, as it should. It was still early. This was '78, '79.

Typically, what an analyst does is a lot of firms that, the brokerage firms, you go selling to institutions. You'd go with an institutional salesman, you'd schlep around to all the institutions. You'd fly to Boston, you'd go to all of them, you'd go all around the country. I used to take an Apple II computer, but you needed a display and we used small televisions as our monitors for displays. The salesman are usually bigger, stronger guys. <laughs> Get on a plane, and I had this Apple II, and the salesman had to carry this big monitor.

But we had set it up in a client's office. So instead of talking about stocks, I would just demonstrate how you could do things. I used to put earnings models of companies on the computer in this program I wrote. Wasn't a very good program, but it could demonstrate how you could change an estimate, and the earnings, you'd change the sales estimate or a margin estimate, lo and behold, the earnings would change. I mean, the numbers were absurd that I put in. <laughs>

Brock: This was a program that you wrote yourself in BASIC?

Rosen: I did. I didn't know BASIC, so I'd get as far as I could, and I would call up either Mike or Steve at the time. It's funny now, thinking about calling Steve Jobs for help, turns out Steve didn't know programming either. <laughs>

Brock: <cross-talk> …Wozniak.

Rosen: But what he knew, he knew more than I knew <laughs> how to do it.

Brock: Did that really set the stage, having written this program to do these calculations of earnings estimates and where you had changed the scenarios—

Rosen: Right.

Brock: That, I can see why once you saw *VisiCalc*, it would seem so useful to you.

Rosen: *VisiCalc* was a revelation. It was—

Brock: Can you tell me about that?

Rosen: Yes. I met…think about where it started first. I met Mitch [Mitchell] Kapor early because he had developed this program, *Tiny Troll*. I was looking for programs that I could that I could do my snake oil act with. <laughs> It actually could do some useful calculations. So I got to know Mitch. Mitch had gone to work for Dan Fylstra at Personal Software for a while developing Visi—VisiSoft—Visi?

Brock: *VisiPlot*.

Rosen: *VisiPlot*.

Brock: *VisiTrend*, *VisiPlot*.

Rosen: *VisiTrend* and *VisiPlot*, right. So I got to know him, and I played with those programs too. He went back East. In the meantime, Fylstra and [Dan] Bricklin got in touch with me, I think when they—or was it Dan Fylstra? One of them got in touch, anyway. They offered me a play with an early version of *VisiCalc*. It just blew my mind, and I really could see all the business applications on this. But what this had which nothing else had—as much as I tried to demonstrate that you could do things with a PC that big computers could use, the only thing clients could understand—even the Morgan Stanley computing department could understand. They didn't want anything—they didn't want to hear—they didn't—they had these mainframe computers that worked and that was it.

But with *VisiCalc*, there was finally something that a personal computer could do that a mainframe computer couldn't do because there were no spreadsheets really for mainframes yet. This got their attention. It was just—I could see how personal computers now could become a really major thing. Just a matter of the very little time as it turned out. The final straw was when IBM came out in '81 with their PC. It gave it the "Good Housekeeping Seal." It's okay to touch a personal computer, even if you're with a big corporation.

By this time, Mitch Kapor had—with Johnathon Sachs—had developed 1-2-3. This took it up another level, because it was sort of an order magnitude better in many respects—function, speed—from *VisiCalc*. Now I got myself into a little bit of a pain because—trouble—not trouble, but just alienation of a friend. Dan Fylstra, had offered me stock, a

little stock, I think, $20,000 of stock in *VisiCalc* early on. When it turns out that our venture firm funded Lotus Development, he was not happy. Fylstra wasn't. He made me sell my *VisiCalc* stock, which I did. We may never have talked again. I don't know, which I feel bad about.

Anyway, so that—I did something that sort of convinced me that when Apple had offered to—Mike had offered to sell me a million dollars of Apple stock while they were still private, and dumb me, said, "No, I don't think I should do that. I don't think that would be right."

Brock: Because you're covering the—

Rosen: Even though it was a private company, I said, "Well, there were going to be other companies, and some are public now. And I want to appear pure." Pure. But that was probably hundreds of millions of dollars. Lots of money.

Brock: However—

Rosen: But look how pure I am! <laughs>

Brock: But don't you think it was true? I mean, this was the time when you had Rosen Research, right?

Rosen: Yes.

Brock: And you were doing the meetings and doing the—

Rosen: Well, what they say is that it's not a conflict if you disclose. That's what people—it's probably true. But to use the word "ethics" today in the same sentence as Wall Street is hilarious. I mean, it's the—don't get me started, as they say. But I rarely tell people I used to work on Wall Street now.

Brock: But do you think the norms however were different at that time—when you were, for example, making that decision to forego that opportunity?

Rosen: Yes, I think they were. I think they were. Now the norms have changed because of legislation and opprobrium from others. There's something inside me saying, "No, do you really want to get in this whirlpool of right and wrong." So, I didn't do it.

Brock: You had started the fora, I suppose, at Morgan Stanley. Is that right?

Rosen: Started before that, started when it's at Coleman Company.

Brock: Okay, and when you went to Morgan Stanley, you brought that with you.

Rosen: Yes, and the letter.

Brock: And then at a certain point, you say, "I'm going to just do this on my own." And you created Rosen Research.

Rosen: Research. That was for about a year and a half.

Brock: Oh, okay. I didn't realize that.

Rosen: Short time. Then I realized I had to do the venture full time. And also, that would start getting into conflicts. So, just got rid of it. Sold it to Esther [Dyson], and we each went our own ways. Until she went into venture.

Brock: Well, it was interesting for me in preparing for this because it seemed like an evolution of, "Why am I doing these analyses for someone else, when I could be doing that into my own firm." And then I also understand, like for example in VisiCorp, you were making investments in this period. Of your own. And then, it seems like I was interested in this idea of, well, "Instead of being an analyst why don't I become a full participant," or something.

Rosen: Yes, I really got out of analysis because I was just bored with it after 15 years. Venture was still young then. I mean, most people advised against it. Some people thought it was too late, believe it or not. My former boss at Morgan Stanley, Barton Biggs, had thought it was—well, I don't know—anyway, I liked him. He was a good guy.

It was early in venture, but I really liked the idea of doing something new. I mean, I had been an engineer, then a securities analyst, and now a venture capitalist and they each have their time. Then I got tired of venture capital after a while. <laughs> I sort of retired, just as the Internet was coming in in the mid '90s. I thought, "This technology has no future."

<laughter>

Rosen: I didn't say—it was time.

Brock: The connection with L.J. Sevin, did that—I imagined that arised because you were covering Mostek.

Rosen: Right, mm-hmm.

Brock: Was he a particularly appealing character to you?

Rosen: Yes, we became friends when I was an analyst. Close, personal friends. I was from New Orleans, he was from Baton Rouge, we had that in common. Also liked each other a lot. And he was—he's an offbeat guy. Was an offbeat guy. It appealed to me also. We also complemented each other in that he was a half-empty glass person, I was half-full. I always, I thought everything was going to win. And he said, "Not so quickly." He'd run a company and he knows what it's like.

Around 1980 or so, I was in my first year out of Morgan Stanley, and he had just sold Mostek to United Technologies. He was looking for something to do. Our first idea was to start a semiconductor company. We tried

for a year to start a semiconductor company, and it went through one of its periodic downturns. So we gave that up. We decided then to start a venture firm.

Brock: Was the idea for the semiconductor company to participate in microprocessors? Or—

Rosen: We didn't have a plan that—we had third partner, he was then the head of Motorola Semiconductor: Al Stein. He was a big name in the—and the three of us were going to do this. And we were still formulating our plan by the time we realized it's going the wrong way. We wouldn't be able to raise money for anything. We had trouble raising venture money in 1981 because none of us—neither of us had been in the business before. And even though we had been in businesses and related business, we weren't in *the* business.

We tried to raise $30 million. We hired investment banker, Tommy [Thomas] Unterberg, who you know. We went around the world, at least Europe and the United States. After six months we got to $25 million, we said, "That's it, let's go." And today, $25 million wouldn't get you very far into this business. But we had a good run in Venture Fund One, pretty good in Two, and then we retired.

Brock: So the first fund was established in 1981?

Rosen: Yes.

Brock: Okay. You and L.J. Sevin put your own funds into that partnership as well?

Rosen: No. It was mostly—we put it in, I think, one percent for the record. But we didn't have as much as you might think at that time. We were employees. He was an entrepreneur, but he didn't do as well as he might have. It was really in venture that we made more money.

Brock: Right. Do any of the investors in that first fund stand out as interesting figures or noteworthy in some way or another?

Rosen: Yes, I can't remember all the details of them. Our largest investor, I think, $5 million, came from a German wealthy family. A really wealthy person. His family was one of the largest cigarette and beer companies in Germany.

<laughter>

Rosen: And what's interesting about him is he was the victim of a well-publicized kidnapping in Europe, but that's the only reason it's interesting. Otherwise, it was a combination of institutions and individuals. But we had to scrape it together. It was hard.

Brock: Well, it is just so interesting that the fund is created in '81. I had difficulty untangling the ordering between—right at the beginning you make a very interesting, I think, investment in Osborne [Computer Company]. It's a very notable kind of failure, but also a company that did interesting things, had interesting people. And then, I

couldn't discern if because they came so close in time, it seemed from an outsider, Lotus and Compaq, the three seemed from a distance, almost simultaneously.

Rosen: There was a fourth company. Company Number Two, which also went bankrupt, was a California computer company. And you know, I can't even remember the name of it to be honest, not a PC company. More of a—can't even remember—it had a…I wasn't involved in it, so I don't remember the details. Anyway, it started with two failures. And so we decided we better regroup.

<laughter>

Rosen: I remember he and I went to a hotel for a weekend to do nothing but just sit and think about what we've done and what we should do. It must have helped, but it was really luck that helped that we were able to get opportunities and invest in both Compaq and Lotus at the same time.

Brock: Was that around 1982, then?

Rosen: Beginning of '80—well actually, Compaq started in—Lotus may have been earlier too. Compaq, the initial meeting was in, I think, September of '81. It was a month after IBM introduced the PC. This group from TI approached us about building a disk drive to put in the IBM PC as an aftermarket product.

Brock: Okay, right.

Rosen: They had no hard drive, just floppies at the time. We met with the three founders and we told them how great they were, how smart they were, encouraged them. They quit their jobs and we turned them down. <laughs> Because after we thought about it awhile, thinking about the lifespan of an add-on to an IBM product wouldn't be proprietary, there would be others, and then IBM would be there itself, and I thought, "No."

But we did encourage. We said we want to meet with you again and come back. It was good for them because they came up with the idea for a portable compatible. Those were the two things they were selling. There are a lot of other PCs the time of the IBM PC, but they were partly compatible, which is same as partly pregnant. You can't be partly. You have to be able to run all the software and to run all the peripherals that IBM does, or you won't sell. That's indeed what happened in the marketplace.

Brock: Was that portability or lugability a common theme from Osborne into Compaq?

Rosen: The only commonality was that they were portable computers. We made a bet that the world would be IBM-compatible. We provided the compatibility. Rod Canion, the founder, likes to say, "We created the compatible computer. IBM is one of the participants." Which happened to be what happened. We did it in a funny way. We are able to make a completely legal original, and as it turned out in the time, innovative product. And a product IBM didn't have, which was a portable.

When we went across this huge enemy—we saw *Dunkirk* last night so I'm thinking of the term—we created this small beachhead which was portability. That would allow corporations to buy a Compaq because they couldn't

buy…. So once they bought Compaqs, after a year or two they realized they could run the same software in the Compaq as the IBM with no penalty. They would then feel comfortable buying a Compaq desktop. That strategy is what allowed us to go after the entire computer world, not just the portable.

Brock: Was that concept of direct competition through IBM by this perfect compatibility, was that a new idea, you know, that perfect compatibility. Or is that something that others had toyed around with because it was—

Rosen: I don't think anybody thought it was critical, which it was. They thought, "Well, if we just can't run a few of these programs, that's not a problem." And you know when Lotus demoed at the same COMDEX [Computer Dealers' Exhibition] in November of 1982, same one, they demoed on Compaq portables. Because we did things the IBM would introduce to portable by this time—didn't do. No, no. I'm sorry, they hadn't introduced it yet.

They did have IBMs in the booth also, but the IBM couldn't run both text and graphic on the same screen. It's a kludgy machine. Only IBM would do something like this. But now they're f—I like IBM now. They were our enemies, but as they say, "Some of my best friends are at IBM." Indeed, I invite them every year to our conference that I put on, that's another thing. But they're doing really great things now.

Did I tell you about this conference I do, "KentPresents?"

Brock: Yes, I have—I would like to get to that because it, I must admit kicking myself for being slow, I was like, "Well, here's another example of Ben Rosen getting together very interesting people." It's not like the forum or the lunch but it's a new version of new activity.

Rosen: But it's about—

Brock: Politics and—

Rosen: Human thought, big ideas and to talk about them.

Brock: Yes.

Rosen: Yes, it's turned out to be a really stimulating venture. It's not for profit. And we generate a lot of money for small charity. Most of our philanthropy has been big charity: the hospital, the university, the cultural center. You're kind of—you're a big charity. But this is for little charities, which are people in need. Which most people don't even know about—we didn't know about most of them up in northwestern Connecticut, where a gift of a few thousand dollars is lifesaving for them. So that's another stimulating part of it.

Brock: Oh, in a way, it reminds me of microfinance. It's sort of like this—micro-philanthropy. That's not as a diminutive but to describe the practice or something—

Rosen: Right, it helps people's lives using innovative form of finance.

Brock: Well, I will look forward to talking to you more about KentPresents. But what I would appreciate your help with is figuring out where in the—did the investment in Compaq happen before the investment in Lotus? Or were these parallel—

Rosen: Probably within days or weeks. They announced in the fall of '81 within weeks. They showed at COMDEX in November within weeks.

Brock: Was it the case then you were seeing kind of a new development happening around both the systems and software? I guess I'm wondering if you saw this as looking—

Rosen: No, we do—

Brock: —integrated opportunity or—

Rosen: No. No. That happens after the fact. Then you what is it, you, back-created or something.

Brock: Yes.

Rosen: No, we just happened to see two opportunities that we thought were extremely desirable in terms of their opportunity to address a large part. We actually tried most of the time to look for things that only had the opportunity to make a big win. Cause as they say, it takes the same amount of work to do a little investment or big investment, so why not do—or a meaningful one.

And it was luck. Luck. Luck. But, the luck had factors which made it more likely to be lucky. The fact that we had somebody who had worked in the industry all his life, one participant, somebody who got to know everybody in the industry, in a different type of relationship, never would have had those meetings probably. And not only had the meetings but to appeal to the entrepreneurs. Because they have a choice of whom they take the money from so, when you heard in Mitch's talking about hearing Arthur Rock treat people like just objects. You know, "Fire, sell, do this, do this" didn't appeal to him, remember—but you wrote it in there. We tended to do it all.

Now, in the case of Compaq where we said that, complimented them, encouraged them, but then rejected their idea. We really were doing them a favor by doing that. And we didn't go away, we did come back to them. So.

Brock: How did the conversation with Mitch Kapor about Lotus Development come about? Do you recall if he found you?

Rosen: We sort of almost knew each other by then. We'd stayed in touch about his—and I would call him about his programs. We sort of knew each other, so it felt comfortable in that sense. I think he thought I could help him in the early areas which is getting to know Wall Street and getting to know the press. Both of which I helped do. The thing he said in that wasn't quite accurate about why I left the board; I left the board because IBM at that time was bad IBM. Not good—IBM is good now, but bad IBM considered every other company the enemy and disliked them basically.

They wanted to do a deal with Lotus about an IBM product that they wouldn't disclose or work with IBM while I was on the board. They didn't think I could recuse myself—and there's probably some truth to that. I would probably learn things I shouldn't. Anyway, I couldn't—it's not the place of a customer to tell a corporation, "Get somebody off your board." But they could, in this case, wearing my Lotus hat, if this could be a big customer of Lotus from this product, better for me to get off the board and make our Lotus stock more valuable. But he didn't want to say that publicly.

Brock: I see. So it was really because you were so involved with what IBM perceived to be the enemy, Compaq—

Rosen: I was not only involved with Compaq, but I was chairman of the company. <laughs>

Brock: Right.

Rosen: I would have done the same, probably. If I were in IBM's position.

Brock: But you just had to forgo that board association, but you—

Rosen: That's okay.

Brock: —kept your investment stayed in place.

Rosen: Being on a board is greatly overrated.

Brock: <laughs> I can only imagine.

Rosen: Especially now, it's even worse. It's hard being on a board now.

Brock: For what reason?

Rosen: For what reason?

Brock: Is that hard?

Rosen: Well, you have to worry about social issues which you didn't have to worry about before. They're going to have to worry about overpaying management, CEOs, which they're derelict in their duty, about what they're doing. Just all the laws are putting so much more responsibility for any malfeasance of a company on a board that.... On the other hand, board members are being paid 10 or 20 times more than they used to be by companies. Because people are reluctant to go on a board. You've got to go to meetings now. You've got to stay awake during the meeting.

<laughter>

Brock: Just to go back to Lotus for a moment, two questions. One, when I told Mitch Kapor I was going to have a chance to talk to you, he asked if I would ask you that—he thought he would seem to you as an unlikely person to do Lotus Development.

Rosen: He was.

Brock: And just curious about how you saw through that, or saw in his unusual character the potential that he could do this sort of a thing, if you could speak to that, I would be curious to know.

Rosen: Well, every guideline would tell you what you don't want to have as a CEO of a company, and use other people's money whom we are fiduciaries for: almost no experience running a company; a background as a teacher of transcendental meditation, as an employee as an orderly in a mental health… 'Course we started using this to embellish the story after he was successful.

<laughter>

Rosen: No, the handbook tells you, the best manager is a former manager. Best CEO is former—because they've done it before. But look, we've hired a president that's never been a president before and look at what he's doing. <laughs> No, it didn't—I mean, it may have bothered our limited partners, but it didn't bother us. We like oddballs. He was an oddball.

Brock: And why was that? Just, it's not just a question of taste—

Rosen: No, look he had a great product, he's very smart, and he's achieved things that very few people have done. And, managers they're—there are a lot of managers around. There are not a lot of—one in a million creative people so, so what if they… You know, Gates had never run a company before, seemed to find funding.

Brock: Right.

Rosen: It's funny that Lotus—Lotus used to big—the big company. I can remember at times having Mitch and Bill Gates in the car at the same time and thinking—then it was, we were just going from one party to another. These were at conferences and—or Jobs, also. We're just young kids then. <laughs>

Brock: Well, with both Compaq and Lotus, almost immediately, you're contending with this hypergrowth—

Rosen: Right.

Brock: —in both firms simultaneously.

Rosen: Yes. You know what their business plan numbers were year one, have you heard that?

Brock: No. No.

Rosen: Lotus, the plan was $3 million, and they shipped $53 million in year one. Compaq was, I think, $20 million, which for a startup is not bad, and it did $111 million. Went to the stratosphere fast, fastest to reach the Fortune 500 ever. Fastest to reach a billion dollars ever.

Brock: I was just so curious to hear how you, I mean, allowing for that hypergrowth to proceed, it seemed to me to take incredible amount of work to scale that quickly. Maybe less so dramatically on the software side, but for Compaq—

Rosen: Hardware's a lot tougher.

Brock: —you know, parts, and supply chain and all of these sorts of things.

Rosen: Yes, management really did a great job to do it that fast.

Brock: Was an early— maybe I have the wrong impression. But it seems like both had IPOs, Lotus and Compaq, relatively quickly, soon after—

Rosen: They did about a year after the initial shipments. I'm trying to think. They shipped in January of '83, is that right? Yes. And Compaq—I can't remember if Compaq went public in '83 or '84. It must have been '84. I think, Lotus earlier, summer '84.

Brock: I have October '83 for Lotus.

Rosen: Oh, October? And December?

Brock: And I don't have written down—

Rosen: So I think it was '84, late '84.

Brock: Oh, was that necessary? That public offering necessary to get the capital to continue this expansion?

Rosen: Absolutely, yes. Absolutely.

Brock: Okay.

Rosen: And Compaq was low-valued most of its history because there was always the fear that it would be undone by IBM. Turned out it wasn't. IBM had to leave the industry because it's competing on a low-margin business, especially compared to the software industry or services industry.

Brock: Right. And you were, I believe, you became the chairman of Compaq's board in '84.

Rosen: Right.

Brock: A position that you held until 2000.

Rosen: 2000.

Brock: It's my impression that your involvement with Compaq, and the Compaq story, really became a big part of your life or career. Is that the case more so than your other involvements? Was Compaq at the center professionally?

Rosen: More than, you said more than Com—

Brock: No, I was just wondering if of all the—

Rosen: I spent more time with it then any other single company after—well, anyone, even Lotus. But I spent a lot of time with Lotus early on.

Brock: Right. Well, I thought, if I may, ask you a few questions about the growth of Compaq to around 1990, and then about Lotus to 1990, and then about Sevin Rosen to 1990. So kind of talk about the decade of the 1980s for these three firms. One definitional feature, I suppose, of Compaq, is that it's headquartered in Houston. I would just be interested in hearing your thoughts about Houston and Texas more broadly as technological region for semiconductors, for personal computers. If there's anything that strikes you. It seems to me that Texas is under appreciated as a center for that sort of activity. I didn't know what your thoughts were.

Rosen: When we started Sevin Rosen, we used Texas as one of the differentiators of our fund. There are very few venture funds there at all. There were also very few venture funds from outside of Texas that were investing in Texas. We had firsthand knowledge that there was a lot of technology in Texas. There was already in the communications industry. Collins Radio was one of the big seeds of the communications strength of Texas. And similarly Texas Instruments and then later held by Motorola which made its—I'm sorry, Motorola was in—

Brock: Arizona?

Rosen: Phoenix. That Phoenix, so that's the Southwest. But TI was one of the major sources of strength in technology and in particular, in semiconductors. The father of the silicon transistor, as an example, came from TI. They had a lot of engineers that—of whom some wanted to be entrepreneurial, and so, we wanted to take advantage of that.

Brock: Is it the case that TI was to the technology scene in Texas as Fairchild was to Silicon Valley at large?

Rosen: Yes.

Brock: Did it have that kind of a role?

Rosen: It did, in a smaller degree, but yes.

Brock: Was Compaq's location in Texas—was that a challenge at all for you in terms of your personal time and spending time with the company or were you simply just traveling frequently?

Rosen: Just travel frequently. I was in New York. And my partner, L.J., was in Dallas, but he was on the Compaq board the first couple of years. But then, he got off the board and left it to me. He had his own boards.

Brock: Was he concentrating in one in particular? Or did something stand out for—

Rosen: He had several. Cypress Semiconductor was one of his major ones, but that was in California. But we did several semiconductor companies and he took the lead on those.

Brock: That makes perfect sense. For Compaq, experiencing this hypergrowth during the 1980s, but also for the personal computer industry just kind of in its character, I wondered about the relative importances of management, marketing, operations, and R&D. I would imagine for different technology firms these different factors have different weights, if you will. I was wondering what your impression was of their relative importances for the personal computer industry and for Compaq. Was it—

Rosen: They're all—it's like an AND gate, they all have to be on. You can't not have any of them. I mean, the nice thing is it was relatively easy for us to hire during that decade, such an exciting place to work, so we got our pick. Indeed it caused us some issues with TI, who sued at the beginning, claiming we were stealing too many of their engineers. We said we weren't stealing them, they wanted to come work for us. But we took a lot of marketing people from IBM also.

Brock: I guess the next thing I would want to ask you about is in this decade of the 1980s, I suppose is the real emergence and solidification of Wintel, the importance of Microsoft as an operating system provider and Intel as a microprocessor supplier, and their kind of tense symbiosis. I just was interested in your position and that of Compaq against that backdrop of Microsoft and Intel, and how you navigated that?

Rosen: Well, I think my only contribution was I knew the founders of both companies well, and I introduced Bill Gates to Rod Canion, year one or so. We had very good relations with top management at Intel. But my role was introductory, it wasn't required for sustenance. They sustained on their own merit.

Brock: Were those fraught connections for Compaq, or was it relatively straightforward negotiations with both Microsoft and Intel?

Rosen: I think with rare exceptions they were very strong relationships. We were lead customers for both companies. So, no, they were great. They were assets of ours. Particularly when compared with any other non-IBM customer. We were right up there.

Brock: Right. We were mentioning before starting the recording that for Intel, their decision, I guess, actually one of Gordon Moore's last big decisions as CEO of Intel was to single-source the 386 microprocessor. And Compaq had that earlier than I think anyone else.

Rosen: We did.

Brock: I know, from the Intel perspective, Compaq's actual adoption of that part—and also making a very successful personal computer with it—was fundamental for them. Around the 386, do you recall how that appeared to you? Was that a fraught technology generation or did the 386 introduction seem like a big deal?

Rosen: Well, it was big in that it gave us, for the first time, industry leadership and a new microprocessor generation, so it was a big deal for us. It was one of many.

<laughter>

Rosen: It's a long time ago and I can't—it's hard for me to give you small details.

Brock: Right. I can appreciate that. Well, I thought this might be an opportune time to just capture for the recording, in your connections with Gordon Moore as prime customer for Intel in this period. He had been your teaching assistant, as an undergrad—

Rosen: Right. Our first relationship, he was the chemistry lecturer, if you will; second relationship, I was a securities analyst on Wall Street and Intel was one of the companies that I covered as an analyst. One of my favorite anecdotes is I wrote—by this time Andy [Andrew] Grove was the CEO. And Andy couldn't be more different from Gordon Moore. As characterized by the fact that he had a rubber stamp made up which he would stamp on every report.

When I wrote him a report—wrote a report about Intel, I would send him—not for proof, after it was out, I'd send him a finished report. He would take this report out on me as he did with others that came from within the company to get this report, take the stamp, stamp it. What it said in big red letters, "I am not impressed." Except if he liked the report, he would cross out the "not." So I was happy when he sent back my Intel report, "I am," "not" crossed out, "impressed."

<laughter>

Brock: How was Gordon Moore received amongst the analysts during the time—during his tenure as CEO?

Rosen: Noyce, and Moore, and Andy, were all different. I mean, just different personalities. Bob [Robert] Noyce was this very outgoing, personable, type. Gordon was much more reserved, very thoughtful. He would think before he responded. But what came out was very astute. Ran the research labs for a long time. And Andy was this management nut, if you will. He had developed his own theories of management, and his own theories of everything. <laughs> But I think, regarded as a—certainly a brilliant, brilliant manager.

Brock: Perhaps we can shift and talk about the growth of Lotus Development to 1990.

Rosen: I have to stop you because my relationship with Lotus ended, just the year after they went public or so, when I got off the board. And it changed markedly from then.

Brock: Well, perhaps I would ask you a different question then, just about the spreadsheet and finance more broadly. You're one of the first people from on Wall Street to see the spreadsheet. You said it was like a revelation. I understand that Lotus expanded the overall market for spreadsheets considerably over the 1980s, so—

Rosen: There wasn't any before it. I mean, really wasn't. It was tiny.

Brock: I suppose so, even with the success of VisiCalc relative to what happened during the '80s.

Rosen: Not even comparable. Lotus 1-2-3 just dwarfed it.

Brock: Well, it strikes me that at a certain point in time, I don't know when it was but that the spreadsheet becomes almost like the lingua franca of finance. That this is how a lot of information is shared about. It is a common tool for people answering these questions about, "What if?" which has ramifications for the sort of financial practices that can occur. If you don't have models, you can't have certain financial products and practices.

Rosen: Well, the subset of that is it created the startup company business, if you will. Now you can make a business plan easily, one that's cogent and one that allows the person you're trying to get money from clearly see what your model is. And it's easy to prepare.

I mean, and it also has a down side that gives you more information than you want. Or it gives you more data, not a lot of information, if you will. But I remember how business plans just exploded after the spreadsheet became available.

Brock: I heard from, actually, Mitch Kapor, that someone, whom he can't remember, told him that the entire world of high yield bonds or so called "junk bonds" that—and other sort of financial products like derivatives of certain sorts, were inherently and intimately bound to the use of spreadsheets.

Rosen: I have no doubt.

Brock: I was just wondering if, to the extent that you're able to reflect on—would finance today be conceivable without the spreadsheet? Or just the importance of the spreadsheet, I guess, is what I guess I'm grasping for—a good way to ask you that question.

Rosen: I don't know if it's done anything creatively, say in terms of creating new products that wouldn't been there before, but it certainly facilitated them. It's given people a tool that's so useful that you can't imagine not having that tool to work with.

Brock: Perhaps I could shift again and talk about Sevin Rosen Management to 1980. Your first fund was in 1981. When did you start putting together your second fund?

Rosen: 1983.

Brock: 1983.

Rosen: Two years later. And that was a $60 million fund, earlier would have been $25 million.

Brock: I would imagine by that point it would have been far easier to raise the second fund.

Rosen: It was easier. It was.

Brock: I was curious about just the evolution of that partnership. How you brought in other people to work with you as partners. I know that it seems that the two people that I knew about who worked as partners, Charles Phipps, Texas Instruments, Semiconductors, and I saw Roger Borovoy, you know, Fairchild, Intel. But those were the only names that I recognized. Maybe you could just speak to how you populated the firm with colleagues.

Rosen: I'm just trying to think who of those I knew well. Borovoy, I knew from Intel days. And Phipps, barely, I just knew him casually.

Other partners, I don't think I had much to do with any of the additions now that I—trying to remember them. John Jaggers, I didn't know beforehand. Steve Dow, didn't know. He came in with Roger. So, I was much less involved in fund two, then fund one, because fund one was a real home run of a fund. Because we had also Electronic Arts, which was a big, big one. Silicon Graphics, Acuson, Landmark Graphics, these are all public companies that did well, made contributions.

Brock: Yes, I take it that a lot of the principles of Electro—or several of the principles of Electronic Arts had come from VisiCorp, at least, Richard Melmon.

Rosen: Rich Melmon, no. Oh, he may have been, yes. Right. May have been. He was only at Electronic Arts a short time. He had a falling out with Trip Hawkins, the other founder.

Brock: Maybe we could just—those are such storied firms, Electronic Arts and Silicon Graphics—

Rosen: What about it?

Brock: I was just curious to know—

Rosen: We weren't on—

Brock: —about those connections.

Rosen: Yes, we were one of the three founders of Electronic Arts. But we weren't the lead. And we were a founder with Kleiner Perkins of Silicon Graphics, but weren't the lead on that. So we weren't on the board of either of them.

Brock: I see. I suppose with the first fund also, it both had such a collection of remarkably successful companies, but also to have so many of them go public so quickly must have been unusual for a fund to know, kind of, your success earlier on.

Rosen: It was. Now companies go public soon, even with no record, or no profits, or no sales. It wasn't always true.

Brock: I did have two questions also about just the practice of venture investing, as you found it. I would imagine that a big part of the job is acquiring knowledge. Knowledge about what's happening in science, in technology, in various areas of commerce. I was just curious how you did that? Were you reading a lot, were you travelling a lot? Going to a lot of meetings?

Rosen: It's all of the above. No, it is—you're just a sink for knowledge, trends, what's real and what's not.

Brock: Is there anything in that mix that stands out in particular that you found useful?

Rosen: I can't—I don't kn—

Brock: Unfair question.

Rosen: Yes. There's two things. There's the knowledge and the judgement. And the judgement is, who knows how we get our judgement. One of the things we try to judge is the founding team. Again, you set up certain requirements that the founding team has to have. Then you get a Mitch Kapor, who doesn't meet any of the—or almost any of them. <laughs> And so, these are just things to entertain you, but a lot of it just comes from what you've accumulated from your experience. And you hope it works.

Brock: We talked about your decision to forego the investment in Apple to keep things simple, I suppose, for yourself. I was also wondering about, in your position as a venture investor, you're seeing—and then being also on the board of Compaq and other firms—you're getting this constant stream of intelligence. Of people with new ideas who are seeking funding, and which I would imagine is an incredibly valuable—

Rosen: That is. That could be one of the best sources of new ideas, new technologies, new people.

Brock: And the people coming in and telling you these things, know of your association with a firm like Compaq. Well, you already answered the question, that it was I would imagine just a great source of knowledge about what's happening.

Rosen: It is. Yes, we also—all the venture firms, they try to get all their companies together once a year, the CEOs once together, and to swap knowledge because the companies are helpful to each other as well.

Brock: And did you do that in a systematic way?

Rosen: We didn't at the time, but we did it more randomly. But we tried to do it. But, I think most firms do it in a pretty organized way.

Brock: Two other questions about venture investing: geographies. Silicon Valley gets such attention when people are talking about venture-backed startup companies in technology. But it strikes me that there are many other geographic hot spots where this sort of activity goes on. I was curious to hear your thoughts about just these other

geographies for startups, and maybe what might distinguish Silicon Valley from these other locales, to the extent that it is different.

Rosen: Well, it still has all of the ideal characteristics. It's developed some characteristics that are less desirable now: living costs, and traffic. But it's a source of the people and all of the supporting technologies and businesses you need. I mean, nothing in the world compares with it. It was true when I was in the business. It's true now. While others have developed, nothing is close. But it doesn't mean you can't have successful, smaller versions of it too.

Brock: Mm-hmm. Then, maybe to pull back the focus the widest—I would be interested to hear your reflections on the importance of venture-backed, technology startups in the national, or indeed the global economy. Where do you see the place of this activity?

Rosen: Vital. It's vital. That leads me to something I think that we're underestimating, and that's China. Where the cliché is that they're less creative and we'll always be the leader in this. But we're destroying some of the basics and the seeds of our success, and that is in the countries investing in technology, and investing in education. We're still going a lot on momentum.

But China is investing in universities. It's investing in science. It's investing in technology. And they're creating just extraordinarily talented people many of who were very creative and this is—I mean, not just in the technology area, but the pharmaceutical area as well. They have a national program to be successful. I think we have to change. We are not supporting our universities. Our private universities are the envy of the world, and they have created a public university capability that has been very good. But this—they're all being starved by the states that fund them. Our national research budgets are being starved. It's so hard to get government funding. It used to be easy.

So, long term, long after I'm not around, I think we're going to find out one day that the Silicon Valleys, and China, and Korea, and the others are going to be right up there with us. Source of job growth, wealth, so—but you mentioned something else, earlier. Forgot. Anyway, go ahead.

Brock: Oh, this is focusing back in on you. You talked about doing demonstrations to investors and adopting new technologies. Would you say that during your association with Sevin Rosen, that you tended to invest in the technologies and products that you personally used?

Rosen: Very often that was a criterion. For instance, the reason we were so taken to the portable, personal computer, is our own frustration at not being able to move a computer around. Move our data around. So absolutely in that case. In the case of the spreadsheet, I got to do something where I didn't have to write the program myself for it. Now, we're not perfect samples of a large population, so today I would be a terrible VC if I had invested in consumer products.

Because as enamored as I am of applications of computer products, as I was 30 years ago, most of the social media and entertainment products that come from the computer today, I would just pass on. I would have passed eBay had I seen it, because I consider it—I mean, it's a medium for buying somebody else's junk. I don't buy other people's junk! <laughs> So why would I invest in a company that does? So that's the case of a personal preference being

destructive to what may be good venture capital practice. Thinking how many other things I wouldn't have invested in. Very few of the social media things—a product that erases what you've created.

<laughter>

Rosen: That doesn't sound too intelligent. But I'm too old for the industry, at least in the consumer part of it.

Brock: Well, I would like to talk to you about the story, for a minute, of Rosen Motors, which I thought was extremely interesting, that ran from 1993 to 1997 as I understand it.

Rosen: Mm-hmm.

Brock: That was a gas turbine engine to power an electrical power plant, right, for the automobile, with also a capability for regenerative breaking sorts of features?

Rosen: What we were building was an advanced hybrid electric power plant. The hybrids have two power sources. One is for cruise power, one is for surge. And this is before the Prius. The conventional hybrid, as they've come to be, use an internal combustion engine for cruise, and a battery for surge power. The one we did was designed by my brother, but he wanted something more elegant, but more—higher performance, and better in every way.

It was better in every way except cost. The problem is in the auto industry that had been in business for over 100 years, the learning curve has gotten costs so far down, that's one of the big bargains in our society. If you build an internal combustion engine for 100 years you get to build it pretty cheaply. We could have made ours theoretically cheaper if we had gotten into automotive volume, but it's chicken and egg: you can't get the volume to get the cost down, vice versa.

So what did we have? Instead of internal combustion engine, we had a turbine engine, and instead of a battery, we had a magnetically levitated flywheel, which—I'm trying to remember. The flywheel, I think, spun at 96,000 RPM—

Brock: Wow.

Rosen: With no contact. It had one moving part, and the turbine rotated very fast. It had one moving part. Turbine ran at constant speed, which made it very efficient versus a internal combustion engine, which runs at multiple speeds as you gear it up or down. So you'd get terrific performance, fuel efficiency, and the flywheel was really a work of technological art. It was something.

Anyway, we built it, and we demonstrated it on a track in California, and we visited a lot of the western world automotive manufacturers. We didn't want to do the car; we wanted to sell the turbo. We got Mercedes interested, but they didn't want to put up enough, and it had to be a lot of money. That was too radical for them. So we had to kill it. It was the victim of not enough capital to play the long game. We needed somebody to come in earlier.

Brock: It struck me that it's not too dissimilar from a Chevy Volt. Perhaps I'm not under—certainly it didn't have the flywheel, but this idea—

Rosen: Or the turbine.

Brock: True, but it's a gas engine that's essentially there to generate electricity for power.

Rosen: Yes, go ahead.

Brock: I was just reading about the effort and then thinking about Tesla, what Tesla has done about becoming a new car company, and wondered about your thoughts about the differences between what Tesla did and what you had attempted. Maybe it was a completely different business plan, actually.

Rosen: Well, again, we were building for the not-yet-created hybrid market, and Tesla made a bet that electric-only was the better way to go, and what they sacrificed was range. What you get in the hybrid is more range. But we're talking about a 15-year difference; technology changes a lot in 15 years. And you still have other models, which are just internal combustion-only models, so there are really three different models going.

My guess now is that the electric car will probably be there in the long term, because batteries will get a little better, and the recharging will get a little shorter; everything will get better over time. But remember, this has taken a couple of billion dollars in capital. <laughs> Which is well over a hundred times more than we put into it. But had we gotten more capital, who knows?

Brock: Was the motivation for you and your brother—

Rosen: By the way, I like to say that we created Tesla in two ways. When I was acting CEO of Compaq in 1999, we bought Elon Musk's first company for $300 million. <laughs> And we later shut it down. Elon went on to use that to help found PayPal, which he sold for more money, and that gave him the capital to get going with Tesla, but we gave him his first paycheck.

The second thing we gave, well, Tesla and Elon, was J.B. Straubel. Well, J.B. Straubel is number two at Tesla. He was there before Elon. Elon didn't start Tesla. He invested and then took it over from the original CEO. But J.B. was there, and he's the one who really put together the architecture of the car. He's still there, he did the Gigafactory, and he's the chief technical officer at Tesla. Chief technical officer of Tesla is an important position, there from the start.

J.B. worked for Rosen Motors. He didn't just work for Rosen Motors; Harold and I were invited to speak at Stanford at—I don't know it was the engineering or business—one of the schools after they heard about us. So we went there. We weren't hiring anybody, and we told people when we started the talk that we don't want business cards or résumés; we're just here at your invitation.

Over here comes J.B. with a business card and a résumé <laughs>. Didn't you hear us? <laughs> So he persisted, and we didn't hire him, but then he kept going. We finally hired him. Well, he turned out to be a rocket star with us,

and really one of the key people there. When that folded, my brother started another company, which J.B. went to work for him there on, and that didn't make it. So after that, J.B. went to Tesla.

Brock: Interesting.

Rosen: So we consider ourselves the agent who—so we funded the CEO, and we created the chief technical officer, and what do we get for it?

<laughter>

Rosen: Bupkis.

Brock: In reflecting on your motivation for doing the Rosen Motors project, was it pursuit of the technological sublime that this is a beautiful technology, or was it motivated by something like a concern for climate change?

Rosen: Well, that was a selling point, clearly, that it was by far cleaner, because the turbine ran at a constant speed. This particular turbine is the cleanest ever. It's still in a company now called Capstone Turbine. Capstone Turbine's a 20-year-old company that's never made money <laughs> but is still going, and still has the best micro-turbine on the market in the world today. And where it sells is to applications where clean is important. Also, it's maintenance-free; it's not noisy. It's got everything on the checklist except one: it costs more than if you buy a—what are those—standard turbines. The standard diesel electric turbine. And cost dominates right now except in certain markets. So we had a really clean car. No, I did it because my brother thought it would be great, and he'd already changed the world in one way. I thought, "What the hell? Give it a shot."

Brock: I thought maybe at this point, we could talk about Compaq during the period of 1991 to 2000. We actually did talk about the history of Compaq from 1991 on. I know that there were just a lot of big, fundamental decisions that happened, both in terms of leadership but also in the acquisition of DEC, for example, which strikes me as a big moment in the history of the US computer industry. Then also the deal with Hewlett-Packard after your active association with the company. It seemed that the landscape of the personal computing industry had changed by the early 1990s—

Rosen: Oh, yes, mm-hmm.

Brock: That you and others felt necessitated the change of leadership with Rod Canion in 1991, and then also at the end of the decade that you just mentioned when you were acting CEO—

Rosen: '99.

Brock: '99. I would love to hear your thoughts on the evolution of Compaq over that time period and some of those big decisions that you had to make.

Rosen: Well, those two decades, the '80s and the '90s, are massive changes of the industry, and in both cases, our management didn't move as fast as the industry. We started moving faster than the industry by creating it. But then

there are a lot of other smart people in the world and good companies the world, and they went after us, and we didn't move fast enough. So we had to change the management, and it was the right decision, because we started off in the '90s like another rocket ship, and did really well. Then in the late '90s, there were more changes. We didn't respond, and so we made more changes.

Brock: Was the fundamental shift at the beginning of the 1990s that cost, and in particular low cost, became paramount in terms of the competitive landscape?

Rosen: We focused on magnetic levitated flywheels <laughs>, whereas cost was more—no, but that's true. We made too good a product, if you will, rather than trying to see how economical we could make it while still giving full functionality.

Brock: At the end of the decade, was that in terms of the importance in the networked world of the World Wide Web, the importance of servers and things like this?

Rosen: We did well in the server market, but really it was the Internet that changed everything starting in the mid-'90s, and we didn't change with it. We tried to do some acquisitions that in retrospect we shouldn't have done, which was Digital Equipment, which was a big company. Among the things that mergers do is they try to put together entities that have different cultures. Very hard to do under good circumstances; difficult to do under difficult circumstances. It was a big challenge.

Brock: Was the merger or acquisition of DEC, was that something that occurred to Compaq in that you reached out to explore that, or did that possibility come to you? How did that come to be?

Rosen: Well, I think both. <laughs> I think both. I plead guilty, because I voted for it and supported it, but... In retrospect, certainly, it was a mistake. Not our only mistake, but it was a big one, because it was a big company, and it was a company that was past its peak, not doing well, losing people. It's not the kind of merger that you would probably bet on or should bet on.

Brock: But at the time, I'm quite certain it appeared different, or the potential of it that you and others saw. I'm wondering what it was that you thought the combination might bring.

Rosen: Me, too.

<laughter>

Rosen: There are differences of opinion, and sometimes you make mistakes for a variety of reasons.

Brock: In 2000, you retired formally from Compaq. Could you talk about why you made that decision at that time?

Rosen: Mean why after 18 years I wanted—

<laughter>

Rosen: It was time. It was time. It's actually too long. I don't think anything should be done by anyone more than 10 years. Really don't. You need new energy to—

Brock: It was clear to you that it was time for you to move on to make way for other people to take up the mantle.

Rosen: One of the things that I espoused during my years as chairman of Compaq was the benefits to corporate governance of separating the roles of chairman and CEO of companies, which has a lot of benefits to it. I saw it in practice at Compaq.

Indeed, if you ask yourself, does it make sense for a corporation to have the person—let's see. How do I want to phrase it? To have a person supervise the entity that supervises him. The board's role is to, choose and supervise, among other, choose and supervise the CEO. How could you have the CEO be the person who then supervises that board? Clearly it's wrong, and it's done because CEOs, for their own sakes, want to have that power. There's no corporate reason for it; it's purely greed.

And every CEO will say, well, "You have a much more congenial group if you don't have differences in opinion between the CEO and the board." Well, clearly you won't if you supervise <laughs> them. So anyway, so I actually testified once in Congress on that and feel very strongly that it should. Yet nonetheless, when I left Compaq, Michael Capellas, who succeeded me as chairman, also took on the role of chairman. So I partly—guilty of that, but I think in general, it's a much better form of corporate governance.

Brock: What did you make of the Hewlett-Packard deal that happened thereafter?

Rosen: Well, here was a case where two companies had issues. I actually wrote a piece, and it's in my blog if you want to read it.

Brock: Oh, I should. Sorry I haven't.

Rosen: Ben Rosen dot com. Well, it's a blog that I stopped writing five or six years ago. But it was called "The Merger That Worked." It turned out to be one of those things where the strengths and weaknesses fit the way I'm holding my hands now; they actually fit this way.

The issue was Carly [Fiorina], and while she was right in doing the merger, I thought, for both companies because they both needed something, she was a terrible manager. She got rid of every strong person around her, including Capellas. I feel really strongly he could've done a much better job than she did, when after that it was just trying to fix, fix, fix, fix, and they're still trying to fix it today.

Brock: There was one other area that I would like to talk to you about, which have been your interests outside of your work and also your recent involvement with the KentPresents. But before we turn to those, I was just wondering if there was anything, a facet or a topic from your professional career, that we haven't touched on yet that we should talk about before moving on to your extracurricular activities as it were.

Rosen: Nothing, nothing, nothing at all.

Brock: Okay! <laughs> Well, then let's perhaps jump into that. What have been your interests outside of your professional endeavors?

Rosen: Since phasing out in the mid-'90s, most of my activities have been philanthropic. I mentioned to you earlier that I've been on the board and chairman of the Columbia Business School Board of Overseers. I have been on—or just retired last year after 30 years on the board of Memorial Sloan Kettering Cancer Center, very active in that on lots of different committees. I feel it's one of the good institutions in the world, really good.

My main activity had been—again, until recently, I was chairman of and on the board of Caltech since 1986. Very involved in that, too. Still involved; we're trying to raise two billion dollars. Everybody's raising <laughs> billions of dollars. That's been a strong activity. I was on the board of the Metropolitan Opera for a number of years, was on the board of the New York Philharmonic for a number of years. Among those six boards, that was a full plate.

Brock: Indeed.

Rosen: And then, besides smelling the roses, which I got a chance to do over this time and do a lot of that—my wife comes from the visual arts world and ran an art gallery many years. I spend a lot of time on things I never did earlier in my life. I ran my two blogs, my "Through Rosen Colored Glasses," one blog, where I would try to share my profundities with the world. I did that for four years, but then I ran out of profundities.

<laughter>

Rosen: I had nothing profound to say, so I decided that was too much work, so I started another blog, which is crowd-based rather than personally done, and it's called "The Virtual Dinner Party." It differs from a real dinner party. At real dinner parties, you meet with friends from time to time, and you find a lot of the conversation is, "What movie have you seen recently? What play have you gone to? What restaurant have you eaten in? Where have you traveled?" That's the topic of conversation, but because dinner parties are random and you might see somebody once every six months, you want to know every week what has that person done and from every—so I have a list of about 250 people on "Virtual Dinner Party," and when they see something, they send it in. I suspend it for the summer during KentPresents, but for nine months of the year we do it, so that's been fun.

But the biggest activity is KentPresents. Kent is a town we have a home in, 90 minutes north of here, 90 miles north of here in northwestern Connecticut. We discovered that, after living there 15 years, there're a lot of people in need who are not properly supported. We started this conference where we hope to raise revenues to donate to them, these charities. We just finished our third year, and we contributed materially the first two years, and we're going to do it again this year.

We try to get people to pay $2,500 to come from wherever in the country. It's similar to Aspen Ideas Festival, a little bit to TED in Vancouver and other specialty conferences, but ours is not specialty. We call it an ideas festival, and the "Presents" in the name is just to make it sound theatrical, that "KentPresents!"

Last year we had 79 speakers; year before we had 87 speakers. We have Nobel laureates, and we have Pulitzer Prize winners, and all sorts of prominent people in different fields. We had 43 sessions over three days last year. It's a lot

of work to go there, because there are seven straight panels each day, 50 minutes in length, and three simultaneous tracks, so you got to decide what you want to go to and what you want to forego.

And first two years, we did full movies of each—we had three cameramen in three halls for three days, so it was a big project, and then they had to be fully edited, and this year we didn't do it. We tried to save money by just doing archival cameras. We take one of these cameras and put it up there and just turn it on and run it for 10 hours. It's not satisfactory, so we're going back next year to the full movies. So if you miss a session—you could only go to one of three—you could see them after it's over.

We're already started on next year's now. One of our regulars is Henry Kissinger, who's a neighbor of ours and a friend of ours. We saw him last week, and he says "You know Ben," he says, "KentPresents is getting well-known." He says, "Friends of mine are coming up to me saying, 'How do I get to speak there?'" <laughs> Says, "First you have to talk like this."

<laughter>

Rosen: But he's been a regular, and we've had some prominent people get good notices. The promos, it's really a full-time job, so I promoted Julia. She's going to do more of the day-to-day stuff, and we're talking to several possible partners to join us, which I can't say anything about that, may not happen. The main change is it will take some of the effort off me; that's all. I didn't plan to be working this hard at 84. <laughs>

Brock: Is the nature of it securing and kind of curating the sort of people that you want to bring together, which is—

Rosen: Right, decide what you want to talk about, and whom you want to talk about it. There are other cases where we go after people. We don't care what they talk about. There are some speakers that are so magnetic, charismatic; we have those, and then in other cases, last year, it was that we have to have a session on opioids, and so we went out looking after people who could do that. So it's both: either we take a person and whatever field they want to speak about, or we look for charismatic speakers.

Brock: I guess the last question I would have about that is: is it the case that you want to see or feel that certain conversations on certain topics need to happen, and you're using this as a way to curate that.

Rosen: Very much so.

Brock: Could you tell me about some of those topics?

Rosen: Well, opioids is a way. North Korea is a topic that—last year we had Bill Perry at 89 years old flew out here, spoke about the reality of the nuclear threat, which has only gotten worse since then. Some of the other must-dos are—let me show you.

Rosen: This is this past year's program. These are the 89 speakers we had. We have every year a keynote speaker who we have talk about the state of risks around the world. We do a panel every year on the racial divide. It's

something we'd like to retire, but the divide doesn't go away, and so we have prominent people of—all color speaking on that.

Last year we had Kip Thorne of Caltech talk about the just-discovered gravitational waves, which he was one of the people who created that whole experiment that prove that, after a hundred years, Einstein was right, that there are gravitational waves. Except Einstein did his theory with a piece of paper and a pencil <laughs>. Kip needed a thousand physicists and a billion-and-a-half-dollar set of facilities to do it. Time has changed.

Anyway, so it's a combination of things that have to be said, we want to tell about, but things that people want to hear about and things that are entertaining, we have entertainment, too. Can't live by bread alone, right?

Brock: Well, thank you.

END OF THE INTERVIEW

