



## **Oral history of Richard Kramlich, part 3**

Interviewed by:  
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**Brock:** Okay, well, great. Well, I'll grab my list and we'll begin, Dick. Thank you so much for joining us, again.

**Kramlich:** My pleasure.

**Brock:** I'm going to ask you about a set of companies, and ask you to reflect on them. And this set of companies are the companies that you were closely involved with -- bringing from startup to billion dollar enterprises -- by 1999. And the list that I have is 3Com, Silicon Graphics, Dallas Semiconductors, ImmuneX, Macromedia, Ascend, Juniper and Healthcon. And as we've talked about before, these represent some big themes of your interests and your work: networking, graphics and health.

**Kramlich:** That's right.

**Brock:** Well, of these eight companies, we were curious to know which of these were the most meaningful to you and why. If you can choose.

**Kramlich:** Well, I have to say I think 3Com was very meaningful; SGI was meaningful; I would say Macromedia was meaningful.

**Brock:** Could you tell us a little bit why?

**Kramlich:** Yeah, I'm just going to try.

**Brock:** Oh, <inaudible>.

**Kramlich:** Headlines first, and then I'll get into that.

**Brock:** Sure.

**Kramlich:** And Juniper was meaningful.

**Brock:** Okay.

**Kramlich:** I'd select those four out this group. Although, I wouldn't discount the other ones.

**Brock:** Of course.

**Kramlich:** Because they were all big hits. But 3Com was meaningful because, as you know, I'd been an original investor in Apple. And I'd spent most of 1977 really investigating the ramifications of the personal computer business. And when it came to financing any one of those, I- I was already out of partnership with Arthur [Rock] and it was before we formed NEA [New Enterprise Associates]. So I was really on my own, officing with Arthur. And so I really had gone all over the Valley. I'd gone to all these home computer computing meetings. And it was really a cult kind of a thing. A lot of fun actually. And what I thought after having gone to a couple of these conferences where there were open to the public that I really found-- I thought that Apple was a special company. And so we, Arthur and I were, as I said, officing together, were wounding down the partnership, and so through Regis McKenna, actually we found out precisely the timing of the first financing [of Apple]. And so Arthur and I were discussing it, and we found out that Venrock was going to lead it. I'm giving you a background on why I thought 3Com was important.

**Brock:** Yes, yes.

**Kramlich:** And, so it turns out Venrock was leading it. And a friend of mine named Peter Crisp was at Venrock, and he was a very close friend of mine. Still is, and he and I had been in the same class in school. And gone skiing and a lot of stuff together. He's really a great guy. High quality, understated, really good man. And highest of integrity. Anyway, I called him and I said, "I understand that this is about ready to happen," and he said, "That's right." And I said, "Could you include us in?" And so he said, "Yes." And so I went back and reported that to Arthur. And anyway, so Peter and I stayed very closely in touch, because Art went on the Board. And he ultimately became Chairman of the Board. But anyway, so then there was a lot of-- you had to really be in the Valley to understand what was going on. And Peter was in New York, and he had some very close-- he had his own people here. But anyway. So about two years-- so that was in 1977. And in 1981, I think it was, I met Bob Metcalfe. And I won't go through all the ramifications of how this all worked, but I wound up as startup investor, along with some fellows from Hewlett Packard, who were as investors there. And anyhow, fast forward to five years ago, and we had a fellow in our office who was doing a recap of the most significant companies that we had been involved in. He said probably the most significant was 3Com.

**Brock:** Huh!

**Kramlich:** Because of the role it played in the development of a workgroup. So having had that exposure at Apple, the personal computer, when Bob and I spoke about it, and we went-- and he said, "My idea is to actually expand it." He'd been at the Xerox PARC situation, and I said, "You know," because I was pretty well aware of the history of PARC and Apple and all that, as well.

**Brock:** Oh, right. <laughter>

**Kramlich:** Which is complicated frankly. But I said, "Well, let's just see if we can work with them, and develop this broadband." You know, we had broadband, baseband and then the IBM technology. And so anyway, Bob and I got together and I thought the idea of bringing in the technology that was inherent at Apple along with a memory bank, along with the disk drives, along with the ability to transmit and communicate, and the whole thing, I thought it was just absolutely the thing that was going to make workgroups much more compelling. So you'd go from the personal computer to a group computer.

**Brock:** Right.

**Kramlich:** And really magnify the whole impact of the personal computer in a very major way for enterprises. Small or large. So that was what really fascinated me. I thought we were really-- this was the way that Bob had it organized in the very beginning was for all his fraternity brothers at MIT. <laughter> My co-investor didn't like that so much. But because he thought it was a little limiting, but they were really great people. And I thought that it was a group that you could definitely work with. And so with a few exceptions, we made some changes in the sales process, and that was one part of it. And but I mean as far as product development and the idea of how you market this and present it as a compelling technology, I thought we really had it. Actually, it was interesting, we had one fellow who was-- he was our patent counsel and he was also head-- oversaw operations. And anyway, great guy. And anyway, the long/short of it is that it took us a minimal amount of time-- this was a first company that was ever founded at 3000 Sand Hill Road. <laughter> Did you know that?

**Brock:** Not at all. <laughter>

**Kramlich:** It was a series of offices up until then, and so it was the first company, and you can verify that with Bob for sure. And anyhow, it was a thrilling experience because I thought we were really-- you know, you don't really in your life come upon very many of these really iconic events that happen that's just gonna magnify the world. And I felt that was situation here. And the quality of the people was so good. So that's what we did, and that was really meaningful.

**Brock:** Yeah, I can imagine making that vision of distributed personal computing, or the whole client server model happen. I wonder--

**Kramlich:** And I mentioned--

**Brock:** Oh.

**Kramlich:** We went and after we started shipping, one million, four million-- one million, four million, sixteen million and forty-seven million. <laughter> That was our ramp. And we went public in that forty-seven million year.

**Brock:** It must have been a great challenge, actually, to contend with that kind of growth.

**Kramlich:** It was, but you know, we had Howard Charney was the one I mentioned...

**Brock:** Yes.

**Kramlich:** ...who was the Patent Council and also Head of Operations. He gave me a very good tip. He said, "Dick, when you come into a company," he said, "you can always tell whether it's a winner or loser."

**Brock:** How so?

**Kramlich:** I said, "Really?" He said, "What is that?" He said, "It's called buzz. There's a buzz in a company. And when people are excited about what they're doing and its non-stop productive work until all hours of the day and night," he said, "There is an excitement in a company that you can pick up <snaps> just like that!" And I said, "Howard, that is one great piece of wisdom <laughs> that you've given me." So anyway, that was-- I learned that from 3Com.

**Brock:** It reminds me of what you've said in our earlier interviews about having or losing the religion, you know, that enthusiasm or dedication, "the buzz."

**Kramlich:** And I just-- the culmination of that story is I left the Board coincident with their acquiring this other company that was in our business. It was an okay thing, but I really thought it wasn't perfect. And it took away some of the magic that we had as an independent company. And I left the Board at that point. And I think really looking over the long-long term, we did really well, the public did okay, and it was all that. Sold the company eventually for a billion-and-a-half dollars. But it should have been a multiplier of that by 20. I thought a little of the magic went out of the company when we started diversifying our interests away from the core technology.

**Brock:** Well, there's so many questions I could ask about 3Com, but there's so many other interesting things on this list, I'll just ask one. I'll restrain myself to one, which is Ethernet came out of Xerox PARC.

**Kramlich:** Right.

**Brock:** Were you involved at all in that negotiation about how to take that technology that had been developed there, and take it out of PARC and into 3Com, or how did that work?

**Kramlich:** Well, it was that we decided that we were gonna play it very straight with Xerox. And so we went back to them, and we negotiated a license agreement. And actually it was really a very fundamentally good thing, because Xerox negotiated with Intel, and I believe with DEC [Digital Equipment Corporation], to proliferate the technology. And so we had a core competency of users that took it and just exploded it. So when we were competing with IBM, and that, and also with baseband, those were the three technologies at the time. And I mean, we had a core of really good companies that were proliferating the whole thing. So how did it work out? It worked out great. We worked out a royalty agreement with Xerox. So it was a win-win-win.

**Brock:** They must have made a tremendous amount off of that licensing deal.

**Kramlich:** It was. And you know, now you look at it, and it's all broadband.

**Brock:** Hm. Well, maybe I could ask you to tell us about why you chose to emphasize Silicon Graphics as a company that really was meaningful to you from this set of companies.

**Kramlich:** Yeah, well, there again, I'm always looking for magic.

**Brock:** Yeah.

**Kramlich:** And when the magic is there, it's great. When the magic isn't there, I say, "Goodbye." <laughs> And there was something special about SGI as well. And I had been a long-standing friend of Jim Clark's. And Mayfield [Mayfield Fund] had put together sort of a small round of financing. And Glenn Mueller asked me to come over and take a look at it. I was-- it was quite a funny thing. It was a put-together team. Jim came to Glenn, and they talked about the technology. And then there was a really nice man who was involved in sort of being the interim, but beginning, CEO. And there was a whole phalanx of people from accounting to my manufacturing to operations to software, and the whole shot. And so I went to this-- we made the investment, it was a very early A-round, I guess it was. You had C-round and then the A-round. C-round first. And I went to this Board meeting. I'll never forget it. It was over at the Mayfield offices, I think. Maybe that's where they were. Anyway, it was near 3000 [Sand Hill Road]. And it was just one huge long argument. And Jim was just-- he had just left Stanford, I guess, or maybe he was still at Stanford. And Forest Baskett, who's an NEA partner now, he's a fantastic guy, really smart-- he had brought Jim into Stanford. And so he had seen this whole thing developing. So I went to this Board Meeting, and it started at two o'clock in the afternoon. And every step along the way was being-- it was very divisive. And all these arguments were taking place. And I sat there thinking to myself, "What have I gotten myself into? This is really terrible!" I liked sort of the magic of the idea, but the enunciation of that

idea was in the weeds. And so the long and short of it is that Jim would interrupt this thing. And he would get-- he had very strong-- Jim's intuition is outstanding on almost everything. And so anyway, he'd really get upset about the way things were going. One fellow was the Mayor of Mountain View, I think that was his main job, and he was our head of software, if I'm not mistaken. So anyway, Jim would say, "I have to talk with you!" So I said, "All right," you know, we had to call a pause to the meeting, and we'd go out in the parking lot and walk around, and he was, "I can't stand this! I can't stand that! We ought to be doing this, not that!" and all these things. I said, "Jim, calm down." Let's just make some--," I said, "You like Vern [Vern Anderson], who is the CEO, interim CEO." And he said, "I think Vern's great. He said, "He's not a leader, but he's a really good guy, and a good manager." And he said, "Okay, look, let's just take this one step at a time. We're going to try to improve the management team. And we're not going to do it wholesale, but there's a great idea here." And this is all the workstation again. I was taking it as an extrapolation of 3Com into the next proliferation of what we were doing. And I so anyway, the long and short of it is we made all those changes. We then got Ed McCracken in. I mean, Glenn Mueller was the one who got Ed. He was at that point, the highest ranking HP person ever to leave. And he came in, and Ed had a very solid understanding of technology, the marketplace, how to execute. He was a good leader of people. And so that was really the official launch of SGI. And for it we had ten golden years. And then due, again, management. Ed had been picked by the President to be the leader of the "Internet Highway." And when you lose your leader, bad things happen. And we lost our leader, and he got diverse-- I'd say distracted by what was going on in Washington. And we never quite had it again. And then we made an acquisition of Cray, which again, diluted the spirit of the place, and the combination of losing that, losing the focus on how do you really lead the next technology, rather than react to it, sort of led to its ultimately demise, but after ten really golden years, it lost its way.

**Brock:** And do you remember what it was that first where you first saw what you felt was the magic? Was it in the graphical capabilities?

**Kramlich:** It was in the graphics, right.

**Brock:** Yeah, okay.

**Kramlich:** And you could really do things. I mean, we had these-- I mean, you could do things that had never been seen before.

**Brock:** Right.

**Kramlich:** And the workstation technology. They were a leader in workstation technology. The technical aspects of workstation technology. We had lots of quality in the technology, I would say, in the-- yeah, the software.

**Brock:** Right. And this would be for you it was the evolution kind of, the workstation was the evolution from kind of networked personal computers like the Apple computers to networked more powerful computers.

**Kramlich:** Correct. Right. And then you mentioned-- we talked about Macromedia.

**Brock:** Yes.

**Kramlich:** And Juniper.

**Brock:** Yes.

**Kramlich:** Macromedia was another sort of a quizzical beginning. There was a-- I had a son who majored in architecture at Berkeley. And so he was involved in systematizing and computerizing an architectural firm. And so we-- there was-- out of that grew a small company. And I'd brought Jim in as one of the investors, Jim Clark, and then another fellow named Bill Woodward who was the CEO. And so we were making slow but gradual progress in doing that little specialty thing. And about the same time, John Doerr was involved in a company called Macromind, which was a lot of technology, a lot of technology expertise, and a really discombobulated management team. And anyway, he and I got together, and we said, "What if we put these-- we have a good culture, and good technology that's complementary to your technology at Macromind. It could be, you know, with a different leader, it could work out well." And so we put the two companies together. And the fellow who was the problem at Macromind went away, and even though the culture had been good at our company, their leader kind of went away, and we brought in Tim Mott. And Tim Mott was terrific. And we said, "Let's just focus on Apple to start with." And so we did, and we began to develop the software that would form the foundation. And then we started making acquisitions that were really, really powerful applications to what we were doing. And about that time, we acquired a company in Minnesota for its President, Bud Colligan. And Bud was an Apple devotee. He'd been at Apple. And he and-- Tim was the first one to recommend that we bring in Bud. And we had a great run of four or five years with Bud. And then we wanted to go beyond the Apple environment, and we brought in another really great guy who'd been at SGI, and so he came in and he really made the company into what it is today. And now it's really-- what you hear-- what you see at Adobe is actually Macromedia.

**Brock:** Hmm.

**Kramlich:** Because the management at Macromedia became the lead management at Adobe.

**Brock:** Oh, you've a lot of the--



**Kramlich:** A lot of people don't know that.

**Brock:** No, I didn't, yeah.

**Kramlich:** And then at Juniper, the situation at Juniper was that they had a great guy as the technology guy. Again, a lot of magic there. And again, without going through it all, we brought in a management team that was first rate. And I was working there with Khosla [Vinod Khosla] and we had a great time and built a-- you know, we actually, we had two of the five best network architects, software architects in the world. And what we did is we actually were the only team that actually could actually out-Cisco Cisco in that working side. And that's why it took off and did so well. And it was a huge success. And the management, the architect of it, who's still the Chairman of the Board, is a wonderful man. And so again, it was all integrated into the same pattern, and I'm looking for breakthrough technologies that can take a pretty good thing and make it into something great.

**Brock:** And Juniper is really the next scale-up of 3Com is networking at a certain scale, and that takes it to one level, but then Juniper is really the global scale sort of networking idea, is that correct?

**Kramlich:** Right. And I think they're maintaining their technology edge, so as time goes on, I don't think we've anywhere seen the end of the day with Juniper. I think it's going to continue to be a pretty great company. And I think Cisco sort of migrates off into a different direction and I think Juniper can continue to do well. They've had a couple of ma-- since I'm not longer on the Board, so I can't speak with as much knowledge or authority on this, but I think they made a couple of short terms that have been not great, but not bad. But I think the long-term is excellent there, because the originator of the whole idea is still driving it.

**Brock:** It's very interesting, just reflecting on what you've been saying, the importance of-- it sounds like there's a lot of importance to which individuals are in the management, top management positions in the companies.

**Kramlich:** Totally.

**Brock:** And is that because the company is kind of structured to make those positions decisive? You know, that it's the structure of the company itself that makes those positions so important, because they need to drive fundamental decisions?

**Kramlich:** I think you have to have a team that can execute flawlessly. And it's hard to get perfection, but I think as you grow from a seedling into a larger company there are going to be different burdens that are placed upon the management to deliver, and you have to be knowledgeable enough about it as a director

to encourage those changes to be amplified as you go. The other thing that's really significant is the leadership. And if you have an egotistical, overly egotistical, guy running the company, he's going to reject people that are too strong. And so I think, for example, when you look at what happened to Apple. When Steve [Steve Jobs] lost his job in the late '80s, and then was able to reflect on it-- and by the way, invested in, you know, he had NeXT, which had a great operating system, but was upside-down. They had to change it after Apple acquired it. And then he had been in the film business, and he'd learned a lot about how a company like that was able to trans-- morph itself really into a significant entity. I think that that pointed out that he needed more than himself, and to him, he grew wise in that process. And I think if you look back on most of these occasions, when Ed McCracken left, got distracted, saw the bigger picture in Washington, which really wasn't, but looked like it for a bit. And you know, I think Bob Metcalfe left 3Com because he thought that the magic was gone as well, and you know, several others. Every one of these is the same. There is a-- there's an understanding, an awareness by the management that there's a bigger goal out here. And they can be a part of leading that and keeping the flame alive. But they have to be able to bring in people who share the responsibility and the pride of seeing the company succeed in a big way.

**Brock:** So if the goal is more important than the individual ego, then they can bring in strong enough characters in service of the goal.

**Kramlich:** Correct. Exactly right.

**Brock:** To switch gears just slightly, this same period we've talked about the successes and the things that you learned from them. Do any failures-- what were your most important failures from this period in terms of, you know, what you learned from them?

**Kramlich:** Right. Well, I've been lucky enough to only have encountered three really dishonest people, crooks.

**Brock:** Oh. Okay. <laughter>

**Kramlich:** And the worst failure I had was I was involved in a company called Resonex. And Resonex was a-- I was the fourth NEA person to pick up the responsibility for this. It was a company that was in the MRI business. And in reflection, there are some businesses you shouldn't do as a startup; one of them is <laughs> imaging, medical imaging, which is really a big company business. But anyway, we had a fellow who really knew a lot about this. He'd been at GE Medical. And he-- a great guy named Bill Brody had invented a new form of MRI machines, which didn't completely encapsulate the patient. And this one had about a 60 percent ring, so people didn't feel trapped inside the MRI machine. And so this is a big company business. And we had to do a lot to perfect the technology. So anyway, so we had one fellow in there for a while. And then another one came in, and then another one came in. And we had a lot of

money invested in the company by this time. NEA did. And they were about ready to give up, and the third guy said, you know, I think-- but we were just actually at a point where we were really getting some traction. These were million-and-a-half dollar devices.

**Brock:** Right.

**Kramlich:** And so, we had-- so we didn't have a good-- Bill Brody only stayed there for the technology really, but he wasn't highly interested in the company, but we had good leadership at the company. So I'm not-- I don't have much of a critique to say about that, actually, except I thought it was an uphill battle, because the other people in the business, General Electric, Toshiba, etcetera, are always, they're finding ways of trying to beat you out, and do away with your customers. Anyway, we had shipped, if my memory serves me correctly, over 50 of these machines, maybe more than that, maybe 70, at a million-and-a-half dollars each, and they each had a lot of software and a lot of services. So I took on the responsibility with the maybe foolish idea that every problem can be solved. <laughter> So I took it on anyway, and as we were perfecting the machine, and we're making sales, and it was always a cash problem. So we had a-- so we needed one last really push on-- I went before our investment committee, and I said, "I'm not going to tell you it's a success or a failure, but it's going to be one or the other by the next time I see you." <laughter>

**Brock:** "We'll know soon." <laughter>

**Kramlich:** Yeah, yeah, I think they actually appreciated that. So because we had more than 15 million invested at that time. And so and in that time it was a lot of money. And so we went back and I said, "You know, we have now enough momentum, because the technology has really reached an audience, people really respect the fact they don't have to be trapped inside of this device." And the technology and the imaging was superb. We had...some of the people there have gone on to greater things. But anyway, the long/short of it is that I said, "You know, I think if we could sell the services to General Electric, and sort of have a partnership with them, we can all win." So I went out to Milwaukee-- we had borrowed five million dollars from a group here called Technology Funding. I didn't know a thing about them at the time before this. Anyway, I got to learn a little about it. We borrowed five million dollars from them. And I went to Milwaukee and I got a Memorandum of Understanding with the management of General Electric Medical Imaging, who were the leader in the field.

**Brock:** Right.

**Kramlich:** And so they would give us 20 million dollars for a services contract. They would service all the machines that we had sold. It was a great idea. Because services are a good income, and they gradually build up and it's the horsepower in the long run in that field. But anyway, so I had called the fellow who was the president of Technology Funding, before I left on this trip, so I went out there on a Tuesday and I

stayed there, and we negotiated the whole Memorandum. And then I got out to the airport on Friday night to catch a flight back, and I called this fellow. His name was Charlie Kokesh, and I said, "Charlie, I've got great news for you. We're going to be able to pay you back in ten days, your five million dollars," and then we'd have 15 million left to run the company. And I thought we had enough momentum by this time. We were doing 20 to 30 million dollars in revenues now. And good software along with the device. And so I-- and I had some small-- second run underwriters lined up, and maybe I could have graduated up to better underwriters <laughter>, but anyway. So I did that. And so I said, "We're going to pay you your five million dollars back, you know, no longer than ten days. And I have a Memorandum of Understanding signed by Jeff Immelt, by the way, who was Head of the Devices." <laughter>

**Brock:** A good signature.

**Kramlich:** Yeah, basic. So anyway, I get back on Monday morning, they called the loan. Called the loan. And I heard from one of the people at the company says, "You know, these people are out in the parking lot celebrating, because you have the deal with General Electric, and now the guy Charlie Kokesh wants to take over the company."

**Brock:** Oh.

**Kramlich:** So he did take over the company. So we lost 18 or 20 million dollars. Now the only redemption on all this, Charlie Kokesh is currently on a 20-year sentence in the state of New Mexico federal prison for fraudulent behavior.

**Brock:** Interesting.

**Kramlich:** He's done it time and time again. He's a complete crook! And we had a way out where we could have won, and he would have gotten his money back with the warrants and everything else. Anyway, all the people left the company and eventually General Electric took it over.

**Brock:** Can I--

**Kramlich:** That was the worst one.

**Brock:** That sounds pretty bad. <laughter>

**Kramlich:** It was pretty bad.

**Brock:** Well, it's interesting, I had a question later in my list that maybe I'll ask now, which was about particular other venture capital investors or financial investors that you have worked with over time, because I would imagine these networks of trust and respect happen, and I was interested in, you know, you have a very particular model for NEA.

**Kramlich:** Mm-hm.

**Brock:** And I was just wondering about who you personally, you know, through that have chosen to work with who are also venture investors or other investor types who might have a different model, but who you still, you know, choose to work with or just how that evolved, you know.

**Kramlich:** Well, I'm a very democratic guy. And I think "talents." I look for somebody as a partner who is passionate about what they're doing and who is technically outstanding, who knows the marketplace, who unites the technology and the marketplace.

**Brock:** Mm-hm.

**Kramlich:** And is a trustworthy individual. And I don't have a formula. I play it by ear. And I'm involved in a small company now that requires a lot of understanding in the software field and the communications field. It's a combination thing. And- and I, I'm really thrilled that this individual is somebody I can partner with and I think we're on the brink of success. Though I don't have a-- I don't have a formula about this. I do-- there are some individuals that I have more confidence in than others. And I'm a team player. I- I really, I-- I'm a direct guy and I don't-- I can't stand any bologna.

**Brock:** Mm-hm.

**Kramlich:** And so I like people who are like-minded. I've- I've collaborated with hun--a hundred people, actually. I don't have a formula.

**Brock:** Right.

**Kramlich:** And I don't have any ego to think-- false ego that is.

<laughter>

**Kramlich:** And to try to make me any more than I am. I'm- I'm not an engineer. And for-- we mentioned Immunex, for example.

**Brock:** Yes.

**Kramlich:** Immunex, I mean fantastic. It was the first cancer therapeutic company and it was a great company. And, you know, we ultimately merged it into Amgen for \$29 billion. It was a huge deal. But the CEO there was a-- was a non-pharmacist guy, a non-medical guy. Yeah, but we had a guy named Steve Gillis and two really outstanding technology guys. But the point is that, you know, in that fi-- it takes me about a year to really understand a company's market and its technology and put it all together. I do a lot of reading. I'm into this field in part because I'm a life-long learner, really. I- I don't have any illusions about anything particularly. But for example, I'm involved in a company right now that's doing-- I think I mentioned this before, it's called Tri-Alpha Energy.

**Brock:** Oh, fusion.

**Kramlich:** Fusion. And I'm a huge believer in the benefits of fusion if we can actually get it to the right spot. We're going to get there in my judgment. <knocks on wood> <laughter>

**Kramlich:** And I mean we've proven sustainability and we're now within 10 billion degrees of our-- of our temperature requirements. We're at 32 million degrees and 42 million is where we have to get to. But you talk about understanding technology and having partners, I mean this is a long road. And, but we're getting pretty close. I think we will be able to monetize this in a commercial sense for licensing and so on within 24 months.

**Brock:** Wow.

**Kramlich:** That is a-- that is a rapid-- a rapid enclosure, I've been involved in this for 12 years. But the people involved are fantastic. And you probably know Art-- you know, they're a number of these. Art Samberg is the chairman; he's the chairman of the board of trustees at MIT. He has a whole MIT Nuclear Department all involved in this. Diane Greene was telling me <laughs> one night, she said, "I just came back from a board meeting. All we did was talk about fusion." I mean she's a great; she's very smart and very great. Ray Rothrock, you probably know Ray, and Ray is a, you know, majored in nuclear engineering at MIT and he was in the Navy.

**Brock:** Right.

**Kramlich:** Rickover's Navy and, you know, he's a great guy and we have a lot of people who really understand the business. And that's the kind of thing I really love because then we can-- we know what we're doing. We know what the difficulties are. No one has any illusions about how hard it is. And we have now a president of the company who took over. The fellow had been president, Dale Prouty, Caltech guy, really good, very good man, he said, "You know, this is getting to be a company now."

**Brock:** <laughs>

**Kramlich:** We're beyond a scientific experiment. And one of the people on board is a-- was-- is-- was the president of GE Nuclear and then he became head of EPRI, Electronic Power Research Institute. And he is doing a great job. Steve [Steve Specker]. And he's-- so I, you know, I picked the- the group as much as anyone individual to team with. And as long as it's fair play and honest and, you know, and we know what the resources are and we're not discouraged by a setback here and there. You know, a left-- a glass half empty I guess is the way to look at it.

**Brock:** <laughs> Yeah.

**Kramlich:** So <laughs>

**Brock:** Yeah. Well, let me ask you to take another different tack.

**Kramlich:** Yeah.

**Brock:** To talk about your interest in investing in China.

**Kramlich:** Yeah.

**Brock:** Which really seems to-- a big push seems to be in the early 2000s.

**Kramlich:** Right.

**Brock:** And I was struck by what appeared to be a particularly big bet or big investment for-- that you were involved in, SMIC.

**Kramlich:** Right.

**Brock:** A Shanghai-based integrated circuit foundry.

**Kramlich:** Right.

**Brock:** You know, could you tell us a little bit about why China at that time and then about-- a little bit about your experience with SMIC?

**Kramlich:** Sure, be happy to.

**Brock:** Great.

**Kramlich:** Oh I'd been fol-- and been going to China on and off for various reasons for since the '80s and watched the evolution. I thought it was a world-changing problem that they were trying to solve. And if you look at what's happened between then and now, 400 million people have moved from lower class to middle class without a revolution. Never happened before in the history of the world. And I look at the characteristics of the Chinese people, you know, six percent of the country is communist. And so they're really, I'd like to say they're a lot of characteristics of the Chinese people that are very admirable. They're energetic, they're-- they sanctify education above all else, family oriented, hardworking, and they are open to change. And, you know, that so it's a very I sort of think of them as a country a little bit like New England Yankees. And--

**Brock:** Oh.

**Kramlich:** And I have a lot of respect for New England Yankees, and the same is true of the Chinese people. So I'd been going over there and saying the '90s were a tempting time because we-- the whole evolution had changed starting with Tiananmen Square. It was 1989 and things began to really happen. And that was when the old boys were out and the new boys are in and, you know, began looking and Deng Xiaoping was really laying down the ground rules for growth.

**Brock:** Mm-hm.

**Kramlich:** And so that happened and- and I kept on taking trips and just trying to monitor what was going on. I'd go all over and Pam and I'd go over there. We went over to explore at one time with Bill Bowes, for example. And it was really, really exciting to see what was going on. And, so anyway, we'd gotten. And I was at-- I joined the- the board of a-- of the Bay Area Council. And I was brought on that board to be the sort of the leader of the dialogue that was going on between Shanghai and then it was called the actually Yangtze River Council and the Bay Area Council.



**Brock:** Mm-hm.

**Kramlich:** And to see if we could forge a really meaningful relationship. And so I had that sort of thing. And then so we decided maybe it was time to really take this more seriously from an investment standpoint because capital, it was pretty obvious that there were going to be the evolution of capital markets. And they were actually open to the, you know, to the capitalistic system no matter what they call themselves. And it's a new-- it isn't communism and it's not the free market, but there's something in between, it was sort of even guiding it with, you know, with a wise not authoritative or totalitarian government. And so about that time we ran into SMIC. And if you really analyze it, I-- the foundation of any technology in a new emerging economy is in the semiconductor business. And so the-- there'd been a few small starts in the semiconductor business. But the fellow who was the founder of SMIC was a Dr. Richard Chang, who had been with-- he'd been with Texas Instruments for 17 years and he had opened 11 different countries for Texas Instruments and he-- and he- he was a very knowledgeable guy. And he had brought together a group of really good people. Most of them had been ex-Intel people. So team of five of us went over and checked it all out and it looked like it was a shot worth taking. In addition to that, the cities of Beijing and Shanghai in a rare moment of collaboration--

<laughter>

**Kramlich:** -- both invested in the company.

**Brock:** Huh.

**Kramlich:** So we had a kind of a consensus and capital-- enough capital to really make something like this work. Just before we closed on the financing, one of my partners, Chuck Newhall said, "By the way, I understand that this Richard Chang is a Fundamentalist." And I said I- I had known that. And I didn't-- and I said, "Well, that's better than a crook."

<laughter>

**Kramlich:** And to myself. And anyway, the long short of it is we got up and going and he was excellent in that part of it and getting the company started. And- and then he build it out and we had fabs in both Beijing and Shanghai. And he had built a church in the compound that was around the Shanghai facility and he had all these people that were going to church. And I don't have anything against going to church, but it all depends on what your priorities are.

**Brock:** Mm-hm.

**Kramlich:** It turned out that actually he was-- he was not a completely straightforward guy. I wouldn't say he was dishonest, he just wasn't straightforward and he-- his priorities were wrong. He was all about fundamentalism and my partner had been right to bring it up as a warning shot. And so we got into it and so we had so much momentum that we went public. And we went public at \$17 a share and it was-- that was a pretty good thing at the time. I can't remember what the market cap was but it was enough and we had the cities behind us.

**Brock:** Right.

**Kramlich:** Shanghai, everything looked like it was going all right, one disappointment after another. And then pretty soon he said, "Well, I want to start using DRAMs as a way to compensate for the vicissitudes in product demand."

**Brock:** Mm-hm.

**Kramlich:** Now you know a lot about DRAMs. They almost killed Intel.

**Brock:** Absolutely.

**Kramlich:** And it's the worst thing possible.

**Brock:** It's a tough business.

**Kramlich:** Tough business. And there's only one company that's ever made it in DRAMS. And- and anyhow, the long short of it is we went through an awful period, awful period. And I'd been on the board for a while and then I got off the board because it was, you know, I couldn't contribute much. And, but we were locked into this and they were making gradual, gradual, you know, progress but so gradual. And my partners got tired of it and so we were forced-- they forced us out. We were forced to sell. And we sold it on the open market. I said, "Just, I think we're doing this prematurely, even though and we could've sold it," I said, "Look, we can sell it any time." And I'm not really a believer in holding public stocks.

**Brock:** Mm-hm.

**Kramlich:** But we could've sold it any time and I said it's half price right now. And so we did sell it, I guess it was about four, five years ago. But we have a woman, Carmen Chang now who is, she was with Wilson Sonsini.

**Brock:** Okay.

**Kramlich:** And also yeah, with Shearman and Sterling. She's a very, very intelligent woman and her husband's a professor at Stanford. And Carmen- Carmen knows everybody in China, literally. Her father was the head of the Air Force for the Nationalists at one point. And she just-- they pay a lot of attention to your ancestry and were they outstanding people or not or what.

**Brock:** Right.

**Kramlich:** And it's one of the values by which they judge people. And Carmen's gone on the board and I'm happy to say for those who are shareholders right now of SMIC, it's now doubled from where we sold-- we were forced to sell it. And we should've held on to it a little while longer 'cause we weren't quite in payday land yet with that partnership but now we are, so it would've been much more valuable. But we didn't, so I just chalk it up to a learning experience.

**Brock:** Well, it's interesting to make any sort of bet in semiconductors at the, what would you call it, the entry price to do anything, and that is so gigantic if you're doing manufacturing.

**Kramlich:** That's right.

**Brock:** You know, 'cause what did the factories cost? Several billion each I suppose.

**Kramlich:** Oh, huge. If you saw these buildings, none of my partners ever saw 'em. I mean it's-- they're staggering.

**Brock:** Yeah. Oh, yeah, I--

**Kramlich:** The one in Beijing is just incredible. I mean it's worth every penny for what it cost. Yeah, I don't know--

**Brock:** I don't think people get the scale of this thing. <laughs>

**Kramlich:** They don't. They don't. And it's, you know, I've been and Arthur [Rock] had been the original chairman of Intel and I've a pretty good understanding of how much capital that's required in the semiconductor business. It's a-- it's massive. And I <clears throat> by the way, I think there's a move on right now to really take advantage of that. In China they're going to-- is going to lead a consortium, SMIC

will lead a consortium and that's going to actually flow through a lot of the advantages of the most recent technology. I think they're down to about; they're at a maybe 23 nanometers right now.

**Brock:** Uh-huh.

**Kramlich:** And they're-- so they're getting competitive for a foundry.

**Brock:** Just I want to return to China.

**Kramlich:** Yeah.

**Brock:** But ask you a quick question. If--

**Kramlich:** By the way, it was a good foundation project to have.

**Brock:** Well to get into the whole.

**Kramlich:** Yeah. Right.

**Brock:** I'm sure a lot of contacts developed and yeah.

**Kramlich:** Right.

**Brock:** Oh, I was just going to ask if, you know, because the <laughs> the entry stake for anything relating to semiconductor manufacturing is so huge, capital intensive, what do you see just in the landscape of venture ca-- venture investing in semiconductors in the past either, you know, two decades.

**Kramlich:** Well--

**Brock:** You know, how has that been?

**Kramlich:** Well, if you do it again on a rote basis it's terrible.

**Brock:** Hm.

**Kramlich:** If you want to see a really successful thing, look at NVIDIA.

**Brock:** Ah.

**Kramlich:** So there are the two extremes.

**Brock:** Right.

**Kramlich:** And I think that now that we've haven't run out of Moore's Law but we're getting close to it. And but there are new, you know, there are always innovations and when you double up the, you know, the technology where like it's being done now, I mean it does give you a little more runway. But I'd say it's all software.

**Brock:** Hm.

**Kramlich:** And it's, and I mean the manufacturing cycles are still real and so it does take a lot of capital, but it's much more software-oriented. And I think that technology innovation means that there are always going to be trade-offs. And I think I like what In-- I mean think Intel's acquisition of Mobileye is a pretty farsighted one. I think it's a good one because semiconductors play a big role in automobiles and are going to play an ever larger role. And Mobileye is playing another role in its autonomous driving, it's definitely here. And so, I think semiconductors are going to take on a different role than they've had in the past.

**Brock:** Hm. Has your investment-- thank you. Has your investments then in China been in the, more in the software area or are you also getting into the health area?

**Kramlich:** We've all-- we've been, as a consequence of getting over there, when I got there I thought the health area was a good area and so we partnered with a - with a Chinese doctor, who has gone to Harvard Medical School and MIT. He's a very smart guy. And so we pioneered a few partnerships there that I think would then lead to direct investments in companies. And then, Scott Sandell at MIT has made over 50 trips to China.

**Brock:** Wow.

**Kramlich:** And he has taken a lot of companies that were otherwise meandering, shaped them up, partnered with various aspects of the Chinese government or semi-government through their universities, like Tsinghua. And so we have a good presence in China now and we're partnering with Baidu on a lot of

different deals, their development team. And so, I feel very sound about that. I made a-- in my new project, we have a small investment in Xiaomi and that's been an interesting thing, and ups and, you know, never going down. It's just up and plateauing.

<laughter>

**Kramlich:** And, things like that. And then you see what's happening in other companies like Huawei and others. I mean it's really a changing scene and I really think this, we're talking about the most volatile part of the world right now with North Korea and China's role in North Korea in controlling it. They don't control it. But there's a great dependency in North Korea on China, and this whole thing is very, very volatile. And I think that Xi Jinping, in my judgment, is extremely well-schooled man and a pretty wise man, and I'm glad to see Tillerson [Secretary of State Rex Tillerson] over there talking to him about collaboration and cooperation. China is going to be the largest economy in the world before long. India is going to be the largest populace in the world now, just about.

**Brock:** Right. Right.

**Kramlich:** And so these are very important things that you can't escape. The importance of Silicon Valley. And Silicon Valley is still a Garden of Eden, it's really is for all these companies all over the world. And it's now more obvious than ever and I think more obvious because of what's happened in Europe, inter-Europe plateauing, and all the turmoil with immigration and all that. And I think it's a-- if ever we had a, you know, a broad vision it ought to be now.

**Brock:** Hm.

**Kramlich:** Because we're dealing with huge volatility, huge ability to make big mistakes. And I think it takes a real substantive education and experience to deal today in a very calm and informed basis.

**Brock:** I couldn't agree more

<laughter>

**Brock:** I wanted to ask you about your new activity, I think we have--

**Kramlich:** We're pretty good shape.

**Brock:** -- about 15 minutes-ish.

**Kramlich:** Yeah. Yeah, we do. Yeah.

**Brock:** Quickly. One of the amazing dynamics here in Silicon Valley--

**Kramlich:** Yeah.

**Brock:** -- were technologists-- technologists, scientists, engineers, what have you, who, you know, parti-- had financial success from their activities and then turned to venture investing. You know, there was a certain-- there's been that transit over time.

**Kramlich:** Right.

**Brock:** And I think-- I believe, I don't know about you, that that has been an important mix of people to have in venture investing.

**Kramlich:** I agree with that.

**Brock:** I was wondering if time elapsed in China, if that sort of thing is happening in China where you've had people who have successfully had, you know, a start-up, a technology company who are now doing the same thing, who are now adding to the venture investing mix, the technologist-turned-VC.

**Kramlich:** I think that's a really good observation and a good question. And I think the answer is inevitably yes. And I, you know, you look no further than Jack Ma, and he's--

**Brock:** Right

**Kramlich:** -- he had sort of taking a Bill Gates approach in a way that is spreading his influence in constructive way. But there are a lot of-- this is one reason is California, we see this more vividly than anyplace else because of the proximity, relative speaking, of California and particularly San Francisco to China.

**Brock:** Right.

**Kramlich:** And we have, I don't know if you've been to-- spend a lot of time in Saratoga, they're some of the, you know, the best houses in Saratoga are owned by Chinese, some of them are still Nationalists. A lot of them are in-- from Mainland China.

**Brock:** Okay.

**Kramlich:** And so a lot of these people are dual citizens in a practical way. So but I think that influence has had an influence in China, for sure. And I'm seeing it directly in a couple of specific circumstances where there're, you know, the amount of capital, the Asia Society tracks this, going to capital from China investing in the United States and particularly in California. I mean it's growing like you can't believe and now they're restrictions put on it by the Chinese government, 'cause they don't want it to be a fire sale. You know?

**Brock:** Oh.

**Kramlich:** You know?

**Brock:** Yeah.

**Kramlich:** Another way of laundering or whatever you want to call it. But anyway, it's a-- there's no doubt that when you have winning, now everybody wants to get a chance at winning.

**Brock:** Hm.

**Kramlich:** And the Chinese want to do that more than anybody. And the biggest problem in China is pollution and, you know, I know that--

**Brock:** Could you expand on that?

**Kramlich:** Yes.

**Brock:** I'd love to hear about that.

**Kramlich:** Yeah. Well, I'll give you two examples. One has to do specifically with China. We were in China, Pam and I moved there in '08 and then in '09. We were there for a year and a half. Lived in Shanghai, traveled everywhere. And it's amazing when you go out into the hinterlands and it's where a lot



of the coal mines are located. They closed a thousand coal mines last year. I mean they're really sensitive to this. It's costing. I think that the medical evidence now is that it probably shaves about five to six years off your life to have the kind of pollution they had. So the Chinese, in their rush to free 400 million people into the middle-class, and they're expanding that everyday, they're very well aware of the value of this. And so, during '08, people would say, "Why are you living in China?" And I said, well, would you rather be over here where the air is clear for this year <laughs> and the Olympics are going on? Because they, you know, put a monitor on how many cars were able to drive into-- into Beijing and so on, yeah. Or would you rather be back in the United States where, you know, we have a meltdown going on <laughter>. So-- so anyway, for one and a half years it was perfect. I was able to see this whole thing. But it was very-- and talking to a lot of-- one of-- the fellow who was my counterpart in the-- the Bay Area Council and he was in the Yangtze River Council, was a man named Vincent Lo. And we became-- he was our patron over there and he really showed us all the ropes, and introduced us to all the people. And actually-- and it was he had-- he had actually been the archi-- he was an architect and a developer for who- who actually kept low-rises in Shanghai. And then six other cities signed up to have him do that, 'cause it kept a vestige of old China--

**Brock:** Right.

**Kramlich:** -- and the better parts of old China. Anyway, he- he also-- I also learned a lot about their own values and what was really important. And, you know, and a lot of people were going to Hong Kong, that was because it was a half a step out of China. And but Vincent was very candid about the way the Chinese really put a lot of value in health and they want to leave-- live a long time. So this got me into another little experience that I translate back into it, and this is why I'm a fan of Elon Musk's. And that is we went-- we have a neighbor down in Florida named Swarovski and they're the crystal people.

**Brock:** Okay, sure.

**Kramlich:** And they asked us to go with them to the-- to the Salzburg Music Festival, two out of the last three years, so we go. And it's this last time, another friend of there's, the Piëch family, they own Porsche.

**Brock:** Okay.

**Kramlich:** And so, Helmut asked me, he said, "You want-- guys want to go see the Porsche Museum?" I said, "I really do, this would be great." So this is where you find answers in the least expected places. So I went out to the museum, Pam and I went out there. It's not a large museum. It's their family museum.

**Brock:** Interesting.

**Kramlich:** And they have only the most important things there. And as we were going around, I looked. Here is a Model A done by Thomas Alva Edison in 1905, completely electric.

**Brock:** Oh, yeah.

**Kramlich:** Completely electric. And then next to this is a car, a race car, done all electrically in 1910 by Porsche that could go a hundred, over a hundred miles an hour all electric. They had electric. They were transmitting electric-- electricity of the cars through the wheels. It was amazing to me and I thought about this, and I said whoa to the man who was leading us through this exhibit, I said, "Why did you guys ever go off of electric cars?"

**Brock:** <laughs>

**Kramlich:** And he said, "Petrol was so cheap." And so now when I think about the pollution in the world, and a good part of it, you know, it's coal mines and it's cars, and I think, you know, what we did is we traded off the pollution in the world for-- for fuel that was slightly cheaper at the time. I mean big decision made wrong.

**Brock:** <laughs>

**Kramlich:** So I--

**Brock:** Yeah.

**Kramlich:** So the Chinese are more alert to pollution than almost anywhere. And I don't know, it'll probably be-- and that's why they're spending so much money on new forms of energy, including fusion, by the way. And I mean these people are not to be denied. They're very, very definite about what they like and what they respect. And they do believe that they are the chosen people.

**Brock:** Hm.

**Kramlich:** They really do.

**Brock:** Yeah.

**Kramlich:** It's down deep. It's entrenched in their being. And who's-- who am I to say they're wrong?

**Brock:** Yeah.

**Kramlich:** <laughs>

**Brock:** But we got to pay attention. That's for sure <laughs>.

**Kramlich:** Got to pay attention. That's right.

**Brock:** Well, I know our time is run--

**Kramlich:** Yeah.

**Brock:** -- coming to a close. But I did want to ask you about something that you mentioned, which is, I think, a new or new-ish current activity of yours that I think you called Green Bay Ventures.

**Kramlich:** That's right.

**Brock:** Now, and it seems like you have through that been into some very <laughs> very interesting companies that are in the news a lot, Dropbox, Lyft, Spotify.

**Kramlich:** Right.

**Brock:** We talked about the Chinese firm, who-- and I can't recall. Xia--

**Kramlich:** Xiaomi.

**Brock:** Xiaomi, thank you.

**Kramlich:** Right. And MuleSoft.

**Brock:** MuleSoft, oh, which just had a public--

**Kramlich:** It went public last Friday.

**Brock:** Congratulations <laughs>.

**Kramlich:** Right. Right.

**Brock:** Could you talk about what Green Bay Ventures is?

**Kramlich:** Yes. It's a-- it's actually the third step in three steps that I've taken since I stopped being a general partner. Yeah, the first step was to do something in the resource area, because that wouldn't compete with anything NEA did and I'm still the chairman of the management company at NEA, which is the largest individual general partner, by the way. And so that's for the benefit of the limited partner so there's continuity over the long-term among our partnerships.

**Brock:** Right.

**Kramlich:** But any event, that's why I went into re-- found this young man who was fantastically knowledgeable. His name is Anthony Schiller and he's a quick learner, besides being very good at what he did in the resource area. So we did a-- used a little venture capital insight and financed two companies that were very-- that turned out to be both just right. We never took a gamble on is there or is there not, you know, gas or oil in the, them there rocks.

**Brock:** Oh <laughs>.

**Kramlich:** And they were and so set up two really good companies and one was called Warwick Energy. And-- and now and they did it through partnerships and we were in the first two partnerships. And then a third one is a billion dollars so it got a little out of our league. And then we did another one up in Canada. And-- and so that all wound up pretty well. We put it on a five-year timeframe and now we're at the end of that. In the meantime, we-- out of our family office really began investing in these-- in the companies that you mentioned and we have seven of them, and they're worth about \$100 million and so now they're coming to fruition. And then we collaborated with people in, yeah, in the valley here, on both these, by the way, individuals who hadn't really thought about a steady stream of income from resource. They're-- that's the province of Houston and so forth <laughter>. Anyway, I think we're-- so I think it has worked out reasonably well despite all the chaos.

**Brock:** Hm.

**Kramlich:** And, in fact, actually we were really lucky. Our first Warwick Project wound up sitting in the Permian Basin on top of what they-- this most recent discovery is 20 billion barrels of oil. And we used a

little technology doing horizontal drilling and shale done with a forethought to environmental consequences, and so although that was really applying technology to the resource area. So anyway, now we're in phase three and so Anthony and I are doing a small fund, that's addressing these even newer technologies than the ones you mentioned. In fact, I would say-- and we're calling this Green Bay Ventures. I-- it wasn't my choice. It was Anthony's.

**Brock:** <laughs> Okay.

**Kramlich:** I happened to be born in Green Bay. So-- <laughs>.

**Brock:** Yes, well <laughs> it seems fitting. Yeah.

**Kramlich:** It seems fitting. But anyway, we are-- we are-- own-- our first limited partner is NEA and I was really proud that they stepped up. They said they liked Anthony and so that's good. And but we're-- we're focusing on this whole wave of new technology. I think it's as exciting as anything we've seen 20 years ago, which is, you know, machine learning--

**Brock:** Right.

**Kramlich:** -- deep knowledge and technology, and really using algorithms for preventative maintenance and things like this. I mean these are-- the Rust Belt, I call it "Industrial Internet" because I think the-- a lot of Rust Belt America hasn't been able to translate these new technologies that we're lucky enough to have here and on the East Coast, as well, into-- into really productivity and enhancements in their basic business. And so we're really trying to focus on that and we now have three companies that we have an investment, and one is in the robotics area and their first customer was Ford. We introduced them to Caterpillar and then so on, and then Tri Alpha actually. And another one is in-- in the API field.

**Brock:** Hm.

**Kramlich:** A junior version of what MuleSoft is all about and they're not exactly overlapping at all. So the answer is that's what it is. We are closing that out. Then I'm going to have another small entry in the life science field. Again, I'm-- well, it's a little premature at this point. But I-- I just love that field and I want to have at it.

**Brock:** Right.

**Kramlich:** <laughs>

END OF INTERVIEW