



## **Oral History of David Solomont**

Interviewed by:  
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Recorded: March 26, 2015  
Brookline, Massachusetts

CHM Reference number: X7443.2015

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**David Brock:** Before we delve into your experiences with software, I thought for a while we could talk about the road that led you there. So, if you wouldn't mind, talk a little bit about your youth, when you were born, where you were born, where you grew up.

**David Solomont:** Well, let me give you this story from the beginning of time to starting my software business, August 1, 1980. I should probably also start by saying I'm David Solomont, and actually I think I'm a third generation Bostonian, which makes me somewhat unique. Most people come to Boston for school and stay or come to Boston and go to San Francisco. So, my family came here in the late 1800s, so 1860 or '80, and my family has been season ticket holders for the Boston Red Sox since the middle or late '40s, so I carry a ticket stub in my pocket for the best seats in the stadium that were \$5 dollars at the time. I'm embarrassed to say what those tickets cost me today. But, anyway born and brought up in Boston. I went to undergraduate school at Tufts University. Actually never left Tufts. I was in my senior year at Tufts...I was hired full-time to run the Academic Computer Center. It blew out the payroll system because the payroll system was only able to issue checks up to \$9,999.99. It wasn't like I was making a lot more. My salary was \$10,000, but the point being that while I was still a senior at Tufts I was employed and running academic computing and my mission at the time -- we had gotten a DECsystem-10, which was an early timesharing system from Digital Equipment Corporation. It was the transition from punch cards to online computing and in a sense it's almost like we've come full circle because today you use a handheld device or a desktop computer and computing is in the cloud. Well, in a sense, a timesharing computer was on the terminal on my desk and computing was in the cloud. I mean I hadn't really thought about that analogy in many years, but that's really the way it was. I was fortunate enough to have a mentor at Tufts. My advisor, my freshman advisor was a fellow, John Sununu. John Sununu, the former Governor of New Hampshire, former Chief of Staff under Bush. Actually, I got a letter from him when he was Chief of Staff that I kept on my desk under glass for many years. I never really realized that was a big deal. So, when he invited me to the White House it was like, "Well why would I want to bother?" But, I was fortunate because my freshman year at Tufts, John, got funding from the Sloan Foundation to set up a program at MIT called USSP, Unified Science Study Program. So, in fact, my first year of school was all lab based. I took no courses and I had the benefit of working in Building 20 at MIT, which has since been replaced by the Stata Building, and if you do a Google search and look for Building 20 as a historian you'll know that that was like a very big deal. That was the home of the Model Railroading Club. That was Noam Chomsky's office. That was home for the Education Research Center, a fellow named Julius Schwartz, who really was the MIT link to this Unified Science Study Program -- the thinking being that if you picked a project that through that project you'd learn all your academics. And, as luck would have it, when I was at MIT I was in a lab and I heard this weird voice talking. And, it turns out it was a computer talking. I don't recall if it was a PDP-1, 3, 5, 7, 11, but it filled an entire room. It must've been a couple thousand square feet, and that was one of the early instances of computer-generated speech, and I became obsessed with computers. And, it turns out that Tufts had a computer center and because I had no classes when I applied for a job I got a job as a technical assistant because I could work the hours that nobody else could work. In any case, my first exposure to computers really was this talking computer at MIT. I came back to Tufts and applied for a job in the computer center and got a job because I was the only one who could work the hours in the morning from 9 to 11, whatever it was, and I really knew nothing

about computers. I'd had no exposure in high school. This was September of '69, and we had an IBM 1130, which was a punch card system, and I also figured out pretty quickly -- I was an undergraduate engineering student. I started school as a Civil Engineer, but when I got hooked on computers, I mean I wanted to be a Structural Engineer, build buildings, whatever. When I got hooked on computers I quickly realized I should take courses and I should have an undergraduate degree in Computer Science. Well, the tricky part was there was no Computer Science program at Tufts. For that matter, few if any at any schools, maybe MIT had Course 6 at that point, but the point is that I switched to Electrical Engineering because I figured they would have computers. And, it turns out they did, but they were all electric and hardware in focus. So, finally I ended up in the Mechanical Engineering Department, the fellow who ran the computer center, Professor George Mayforth, who wasn't much older than me, he got the Mechanical Engineering Department Chair, I think it was Fred Nelson to support a Computer Science Program. So, by the time I graduated I had a Bachelor of Science in Engineering from the Mechanicals Engineering Department in Computer Science and Applied Math. The funny thing is the second year at Tufts I actually continued this program of Independent Study, so my first two years at Tufts were totally course free and totally obsessed working on computers. And, I took as many of the courses as there were, and I recall one night working on the IBM 1130 in something called the Assembler Language, which is the sort of raw bit and bite level and on an IBM 1130. I was working on the operating system using punched cards. So, this is tricky at best, and I was working all night and I just couldn't get whatever I was trying to get to work. There was an Interrupt Request key on the computer and I was trying to program it to do something fancy. And, a friend of mine came in, we used to call him the Wizard. He came in around five or six in the morning. He shuffled the cards and got everything to work and actually he eventually became my partner in my first company because I realized that I was not going to be the technologist. I would be the business person. I knew enough about computers. I could program them. I knew how they worked, but I would be the glue, or I would be the link between the computer and the person. Like, "What is it we can do with this?" And, so, if we fast-forward a little bit, I took a year off studying in Israel, came back to Tufts in, I guess, it was the fall of '71 or the fall of '72, and continued to work at the computer center. By this time, we'd actually gotten a DECsystem-10. We had replaced our IBM 1130. The funny story along the way getting the DEC-10 was we were evaluating timesharing, and we were showing John Sununu, my advisor, was the Associate Dean of Engineering, and he was pretty smart. I mean he was an MIT grad, PhD, he was no slouch, and an engineer by trade, big engineer for Xerox Corporation on thermal heat transfer and fluidics. So, we were showing John how the DEC-10 would work, and we had a terminal in the office and we said, "Sit down John." And, unbeknownst to John we didn't have the terminal connected to the DEC-10, we had it connected to a terminal in the other room, so that when John typed we typed back and we made believe that this DEC-10 was the smartest thing in the world. And, I still recall that fondly. I'm still in touch with John, and in fact, just saw him within the last I think six months or year. I continue to remind him about that, as well as he was the builder of one of the very first hydrogen powered cars back in the '70s. So, I got obsessed with computers. I worked at the computer center. They hired me full-time when I graduated, actually the year before I graduated, and I went on to build a new computer center, and my mission was to propagate both the Medford Campus, which was the Tufts academic center for Arts and Science as well as Engineering, and the International School of Law and Diplomacy, Fletcher, but I also propagated terminals on the Boston Campus and put the first online terminals in the Medical School and the Dental School, and so on and so forth. And, I could spend the next two hours talking about what we did at Tufts, and we had an online system for students to check their grades in

1974 or 5, which, in fact, we weren't allowed to turn them on because the Dean, I think, was afraid of, they were just afraid of technology. But, it was probably 10-15 years ahead of its time. We had a very forward thinking head of Academic Computer Services, George Mayforth, and a lot of support from the Provost Kathryn McCarthy who passed away just this past December. Anyway, I happened to stumble across an Apple and I bought one, and I still have it. It's like Apple's serial number 300 and something -- Wozniak offered to autograph it for me if I ever bring it out to California -- and I brought it back and hooked it up to the DEC-10 as a terminal, and I said, "Wow, this is very cool." You couldn't do much more than play games, but basically I said, "There's an opportunity here to build a business of software on these computers." I had the watched the mini-computer opportunity come by and thought that you could use little digital equipment, and again, I can't remember if it was PDP-8, and make a commercial business out of it. And, so, my boss at the computer center, George Mayforth and I went out to Digital and we said, "Hey, we want to launch a business. We want to use these little PDP computers," and they basically said, "Get away kids, there's no business here. That's a scientific machine." So, I watched the mini-computer boom come and go, and I wasn't going to let the microcomputer or the desktop or personal computer industry fall by the wayside. So, I quit my job or I applied to graduate school at Tufts, MIT, got into the Sloan School back when it was a class of 100 students, rather than whatever it is today, 500, and went to school with the intent of learning what I didn't know about starting a business. And, the truth of the matter is it was more about meeting people and making the contacts that would help me launch a software business. And, in fact, when I graduated Sloan I applied for several jobs. I got an offer from Arthur D. Little as a consultant. Coincidentally, they did tell me they gave me one bit of advice that I had to learn, the lesson that I talk too much. I hope that's not a problem with the interview. At any rate, I took their job offer and their salary and I said, "Okay, I'm starting a business and that's what I'll pay myself." So, I called my old friend from Tufts, Steve Covitz, the Wizard, and I said, "Steve, we're starting a business." He and I put some money in and we were off and running, and the business plan was to build a full range of integrated software, business software, for the Apple II, and Stephen just for whatever reason started on graphics, just figuring here this will be pretty quick and easy, we'll get something up and running. And, in fact, we built our graphics program and we called it Business Graphics. Excuse me, and it let somebody who was unsophisticated with computers -- and of course, back then that meant like everybody -- and you could put in a few numbers and it would draw bar charts and pie charts and whatever, all of the various business graphs and it would print it out. And, back then, printing was not a simple matter. It printed on dot matrix printers and color printers at the time were few and far between, and very expensive. But, we figured out how to make pretty much anything work, and it became a fairly flexible tool. And, we were, Steve and I started the company, we were the Directors. We invited John Sununu who was still a Professor joined our Board and stayed on our Board through our first round of venture capital, at which point the venture guys said, "Why do we want him on the Board," and I said, "You want him on the Board. He's the go to guy." Anyway, we were at a trade show for one of our dealers, and it might've been Ralph Wagner from Microsource Financial, was at a trade show that one of the Apple representatives was at. This was probably November of '80 thereabouts. I can look it up in my notes and get you a more precise timing, and he showed this to somebody from Apple, and they said, "Wow, that's pretty cool." Next thing I know, I was on a plane to Apple, and I following a series of meetings back and forth I negotiated and signed an agreement with Apple, and again, I have the contract in my files so I'm going to have to pull out the date. I should've looked at it before we got started, but my key representative at the time was a fellow named Rob Campbell. Rob was the Business Software Product Manager for the Apple II and then

eventually the Apple III. One of the other key players were Mike Kane, who I don't recall if he was a Vice President at the time, but he was in charge of Software Distribution. In those days, you didn't fax or you didn't email contracts. In fact, FedEx was just going and my attorney Steve Meltzer, from Shaw, Pittman, Potts, and Trowbridge, actually his firm represented Fred Smith from FedEx, they were just getting going. And, I met Steve because when I started this software company my attorney was a really nice guy, David Moran, and his partner's name might've been Elliott Lobellum [ph?] \_\_\_\_\_, I'm not sure, but the point is that I called a professor of mine at Sloan, Peter Keen, who was an advisor or mine, who was one of the pioneers of something called Decision Support Systems, and he introduced me to a friend of his, who introduced me to Julian Lange, who was President of Software Arts, and Dan Bricklin and Bob Frankston and I met Dan in their office. He's the inventor of VisiCalc. His office was in Central Square and it was a very small industry at the time. There were a handful of, I guess, pioneers, Dan Bricklin, Mitch Kapor was on the scene all ready. He was a classmate of mine at Sloan. We can come back to that. But, the point is I said to Dan, "Who do you use as an attorney?" and he said, "I use Steve Meltzer." And, I was on the next plane to Washington. I met Steve and Steve was on the next plane out with me to Apple Computer and literally we negotiated and finalized the agreement and I signed it with Apple's Corporate Counsel, Al Eisenstat, who took them public. Steve Meltzer, the attorney, and I still have the pen that Al gave me. I actually have kept pens from each of the contracts, the major contracts, I signed along the way with Apple, with Digital, with Wang, with IBM, with 3M Corporation, Lotus Development, and I'm sure I'm forgetting one of the companies, but the pens I figured would live on even if the software changed over time. So, we signed the agreement and we were, I think, the first product in an Apple-branded box, not a third party software package. That was going to go under the name Apple Business Graphics, and that was a big deal. It was good news and bad news because the founder, CEO at the time, Steve Jobs, and I won't add any commentary, there've been many more people much more knowledgeable than myself who would comment on Steve. But, I was introduced to Steve and Steve took an interest in the software, so much so that he wasn't happy with the final packaging and the product was held from shipping for about six months, which at the time was a very big deal because those days software was all about stuffing the channels at least to get started. Fortunately, our agreement had a minimum dollar amount per month, so it wasn't like we took it entirely on the chin, but it was a little bit of a disappointment that we didn't ship like immediately. Anyway, in that context, Al Eisenstat convinced Steve to let my partner and I see the Mac, and at that point the only company who had seen the Mac was Microsoft, the only third party company. And, in fact, the only Apple branded software that may have been available, Microsoft may or may not have been an Apple brand, I can't recall. So, we saw the Mac and at this point we were shipping Apple Business Graphics and at this point we had all ready as our company, Business and Professional Software, had already realized that there were some-- we kind of got stuck on graphics and so our business plan to expand into other categories of business software, database being one of the key ones, we never pursued that because once we got into the graphics software there was a big opportunity figuring out to make the software work with printers. That was a huge issue, and we were one of the first and only that could actually do WYSIWYG, what you saw on the screen we managed to make work on printers as expensive as the Tektronix Thermal Transfer. So, the computer was \$1,000 dollars and the software was a couple hundred bucks, and the printer was \$25,000 dollars. And, we also realized that you could, in addition to making paper printouts that you could make 35mm slides, you could make overhead transparencies, so we decided to focus the entire business on presentation software. And, as a result we built a little product called Screen Director, which took all of the presentations you prepared in

Apple Business Graphics and you could basically use your computer as an electronic slide projector. And, I think I had bought 10,000 Kodak controllers and people like to know what a Kodak controller these days is, but it was a little device that you used to control the Kodak Carousel Slide Projector, and I bought 10,000 of those and I cut off the connector and I put on an Apple game paddle connector, so now I had Screen Director and it shipped with a Kodak controller so it gave you the impression of being an electronic slide projector. So, when I went to see the Mac for the first time, I believe Mike Murray was the evangelist who showed it to me, and my Product Manager, Rob Campbell was there, and I said, "Wow, this the coolest thing going, this is a great slide projector and we ought to build software that turns the Mac into an electronic slide show. And, not only should because everybody in the room Campbell included said, "Hey, that's a silly idea." And, of course, we can come back to the fact that later on life, maybe six months later in life, Rob shows up in the industry trade show, I don't remember if it was Esther Dyson's PC Forum or whether or not it was Stuart Alsop's Demo, but he showed up on the scene with a product called PowerPoint, and of course, I attribute his knowledge and exposure to presentation graphics, to his work with our company and Apple Business Graphics. It turns out along the way...and this will take you deeper into what we were doing as a company. In addition to our mainstream Apple Business Graphics product, which was really more of a quantitative data presentation product, we realized that presentations were less about data and they were all about words. And, so we began what we called our Express Series of software, which began with a product called Overhead Express. The follow on to that was 35mm Express and then sort of the ultimate member of the family was Presentation Express. And, in fact, if my memory serves me, it was probably 35mm Express, which was the model, if you will, for PowerPoint. And, again, people at Digital Equipment, 3M Corporation were making overhead transparencies like they were going out of style and so the first member of the family was Overhead Express, which didn't do a whole lot more other than you type a few words into a template, you press a button and it prepared a perfectly formatted overhead transparency, and by this time laser printers were the rage. And, IBM and eventually their Lexmark Division had the laser printers, Hewlett-Packard coming down in price and you could make beautiful transparencies. And, in fact, many corporations at that time, notably Digital Equipment, which was in our own backyard, one of the Route 128 technology belt or America's technology highway, may it rest in peace. And, Digital, you didn't go into a meeting without a set of transparencies, and they got a hold of our Overhead Express and we originally were using computer manufacturers as our distribution partners. So, in addition to Apple Business Graphics, we did Wang Business Graphics, and we did Business Graphics for IBM and Digital, and generally in a branded box, and Overhead Express we were going to launch under our own logo and we approached Digital to distribute it. At this point, Digital was in the PC business and it turns out that, I think, in addition to distributing Overhead Express, which Digital fell in love with because overheads were their culture, I think they had as many as 50,000 copies that they literally bought one at a time. I mean maybe it was more than one at a time, but they would buy 1,000 or 5,000 for distribution and they would get eaten up in house because everybody who was anybody at Digital who made overheads was using Overhead Express. It was just the simplest, easiest product to use. And, in fact, that's what caught 3M Corporation's attention. We had one of the vice presidents of the division that manufactures thermal overhead transparency material. I don't know if they still are, but 3M was the dominant player in that business, and the Vice President of the division from Minneapolis came to Boston and I showed them how easily we could make overheads. Obviously, they were scared to death of electronic presentations, and I have a funny story about that, but when they saw how I made transparencies lickety split on the computer and

printed them on the laser, what they loved was the fact that I could waste so much transparency material because I would prepare something and make a mistake or decide to change it, so when I burned through a box in half an hour they said, "Wow, this software can accelerate our sales." And, so, I went out to Minneapolis, they set up a big meeting, they wanted to engage us to build a product for them. The product was going to be called Viewpoint. We built sort of an initial product called Trumpet, and it was very sophisticated technologically. I can come back to that, but the point is I went out to present to their senior management team and I had a portable computer, a Compaq at the time, and I did my presentation electronically and I'd never had such a cold response at a meeting. It was like--it was like I'd told them...it was like I took out a gun and it's like I took out a gun because I didn't realize I was cutting out their heart. I was showing them that the future of transparencies was limited; that eventually while overhead transparencies might not die, although I think they have, that electronic presentations was the way of the future. And, in fact, they were just starting to play around with-- they eventually launched a series of LCD displays. They actually have a whole division focused on presentation, materials, and accessories, and the bottom line is I learned two things. One, you've got to be sensitive to the future and tell the customer what the future looks like. On the other hand, you don't have to throw it in their face, and I should've used transparencies for my meeting and then highlighted the fact that the world was going electronic. By this point in the industry, and I'll come back and mention, when I was at Sloan the New Ventures course, there was one course in the whole curriculum, there were maybe six or eight students, fast-forward since then, a good friend of mine, an investor in a number of my companies, and a member of my investment group later on in life, Ed Roberts, who was one of the pioneers of entrepreneurship studies. He launched the Entrepreneurship Program at MIT, at Sloan. I mean I have to believe that 80 percent of the students taking Entrepreneurship course now, which back then it was 8 percent, and there was another student in my class, this kid Mitch Kapor and we all wrote business plans and I'm a packrat. I keep everything as you may or may not be aware from the 50 boxes in my office, and Mitch wrote a business plan. And, I actually sent it to him about a year ago. It was his first business plan for his first product, the predecessor to 1-2-3 if you will, his real success in the software business, and it was called Tiny Troll, and I sent it to him and he said I wonder if I would fund myself today. And, the funny story is his plan was a bootstrap plan requiring no outside money. And, Mitch left Sloan and did get into the PC software business alongside myself and Dan Bricklin and really back then all of the action was in Boston. I mean admittedly Apple was in California and Personal Software, the first sort of big software label that eventually published VisiCalc for Software Arts, but really all of the innovation and software inventions were local, and I would actually I maintain that there's more innovation in Boston even to this day. Silicon Valley has done a good job of scaling technology and hyping it. I think we're still the ultimate source of invention and I think if you looked at the data there are more patents per person issued from Massachusetts or Boston than any other place in the world, maybe second only to Tel Aviv. But, that notwithstanding so Mitch took his Tiny Troll and morphed it into a product called Freelance, I'm sorry morphed it into a product called ViziPlot and ViziPlot became an early charting product, a companion to ViziCalc, and we were in a sense competing with ViziPlot with Apple Business Graphics, but we moved into a broader and presentation focused arena as opposed to a data focused arena. And, in fact, that was a very good thing because presentations were a much bigger market, and data eventually became part and parcel of the spreadsheet because as you probably are well-aware ViziPlot became a companion sold alongside VisiCalc. Mitch said, "Wow, those should be one product. He started a new company in Boston called Lotus Development and his second product was 1-2-3, and 1-2-3 was written entirely by

one person, Jonathan Sachs, and it was an integrated VisiCalc, ViziPlot, and shame on the guys at Software Arts that they weren't there first, but the sometimes the first people to market are not always the winners; they're the inventors and I can say firsthand that that's life. But, Mitch's first product at Lotus Development was actually called Executive Briefing System, which was almost a side-by-side knockoff of Screen Director, and, in fact, Mitch and I had spoken about collaborating on Screen Director, but he went off to do his own thing. His thing was Executive Briefing, my thing was Screen Director, and, in fact, Lotus launched Executive Briefing, but it was swept under the carpet as part of the public offering, and very few if anybody knows that it was Lotus' first product because obviously you want to have a first product that's a raging success, which is 1-2-3, and I also took my original copy of Executive Briefing and sent that back to Mitch about a year ago, which he welcomed because he didn't have a copy. I sent my first copy of VisiCalc to Dan Bricklin. He did have a copy, but appreciated an extra. So, at this point we've got a fledgling presentation software industry. Mitch had started 1-2-3, or Lotus, but in addition to PowerPoint from the company Forethought and Overhead Express, 35mm Express, Presentation Express from BPS, Business Professional Software. There was a Westport, Connecticut company, I believe it was Decision Resources -- Tim Davenport. I can't recall his partner's name, and there was a fourth company. There was Freelance, 35mm Express, Decision Resource, and in the course of conversation I'll probably remember one or more of the other products, but the bottom line is that it was time for consolidation in the industry. And, Microsoft acquired PowerPoint, and in fact, when we were competing with Overhead Express and 35mm Express, we were still selling a lot of software, and we weren't concerned because our product was much more capable, and in fact, we at this point had extended the product. So, with 35mm Express and its successor Presentation Express, not only could you produce electronic slide projector shows, but 35mm slides and overheads were still in both, and so we could print whatever was on the screen on a color printer, a plotter, inkjet thermal transfer, laser, but we also had the ability to transmit the slides electronically over the phone. We had a relationship with a company called MAGICorp. I also thought the concept was so strong that independent of our software relationship I was an investor in MAGICorp. And, MAGICorp had the patent on remote transmission of slides, and so we thought this was the greatest thing since sliced bread. Our software could take your slides that you created transmit them over the phone. MAGICorp set up a processing center at the Airborne Express headquarters in the middle of the United States next to the Strategic Air Command, so that they could receive slides, up until one or two in the morning, process them, have them on an Airborne Express plane, and you could have your slides on your desk the next morning, and this was amazing.

**Brock:** What year was that?

**Solomont:** What year was that? MagicCorp. 35mm Express slides. By this point, Lotus probably had already bought Freelance, so, I'd have to look it up-- mid late '80s?

**Brock:** '86? Something like that?

**Solomont:** Yeah.

**Brock:** Okay, I'm sorry.

**Solomont:** Yeah, I'm not great on dates, and in fact, I will confess that as a business person, I thought this was great. While my 35mm Express will compete against Freelance and PowerPoint, all of them are going to want to connect to the MAGIcorp back-end. So, I invested in MAGIcorp, thinking that "I'll not only compete on software, and I'll get a 20, 30 percent market share, but I'll have 100 percent share of the slide business on the back-end." So, I thought I was the smartest guy in the room. Anyway, we'll come back to that story, but the point is, that industry consolidation and Microsoft bought PowerPoint, Ashton-Tate bought Decision Resources, Fred Gibbons Software Publishing, who had a simple, easy-to-use collection of business software, PFS Filer, PFS Writer, whatever. He bought another company who's name escapes me and--

**Brock:** Is that Harvard Presentation Graphics?

**Solomont:** He bought -- I think he bought Harvard Graphics, yes, and Harvard might have been a western Massachusetts company. I'll tell you, if I think about it long enough -- and I have a notebook, I have spiral-- I got rid of my Day-Timers, and I use my Blackberry, I'm one of three Blackberry users. But I have a notebook, one for every six months, spiral bound, six months, beginning August 1<sup>st</sup> 1980, and quite literally, after our interview, I can go back through my notes, and I can recall the meeting I had with Rob Campbell at Apple, the first day I met him, and I can recall the meeting I had as the industry was consolidating, and Ashton-Tate bought Harvard -- or Fred bought Harvard, Ashton-Tate bought Decision Resources, Gates and company bought Rob Campbell and Glaser's company. His co-founder was Glaser, who stayed with Microsoft for a few years, and eventually started Real Media, Rob Glaser. I thought that -- I was approached by someone at Lotus, a fellow named Allen Schlangenbaum [ph?]. Allen was a product manager, and he was charged by Mitch Kapor, the founder and still chairman of Lotus. At this point, I think Jim Manzi had already taken over as CEO, and Mitch didn't like Freelance, and while the VP of marketing, Mike Colwich [ph?] wanted to buy Freelance, not because he was a church-going friend of Randy Wise [ph?], the co-founder with Dave Tarrant, but it had a 1-2-3 like interface, and even though 1-2-3 had graphics, Freelance added that extensive presentation graphics capability. It was nowhere near as good as 35mm Express, because it was still heavily data oriented, and its command structure was awkward at best, and 35mm Express, our products, we saw the wisdom that if you look at slides, you look at presentations, I mean there's some data, there's some charts, but you know, there's nothing like the bulleted list. To this day, I maintain that 80 percent of any presentation is probably slides with three bulleted items. So, the point is that Mitch didn't want to buy Freelance. He didn't like it, and he approached us because we had built into Overhead Express, in particular, the equivalent of a rasterize-- a PostScript engine. So, what this meant was that, and again, while the operating systems now were Apple, and Windows. Windows was now the big thing, and the Apple II had since fallen into disfavor, and Apple III was gone, and the Lisa was gone, and the Mac was obviously the rage, and I should mention, by the way, that we were one of the first kids on the block with the Lisa. I still have the correspondence with Steve Jobs, and Al Eisenstat, arranging for my first Lisa, my first Mac because we also realized that presentations weren't just words and numbers, but they were also clipart, and we pioneered, we probably

launched the first clipart product for the Lisa Computer as well as the Mac called Art Department, and it was a -- we had a co-publishing relationship with Compugraphic, who was a big typesetting company, and Art Department was hot. I mean, it was like-- again, it was the first cut and paste product, and like I say, we offered that on the Lisa -- Compugraphic bundle, that with every Lisa Compugraphic typesetting machine, and we launched that on the Mac. And along the way, we also recruited one of the senior executives from Apple, who was a group product marketing manager Barry Yarkoni, who moved to Boston to help head up marketing for our company. We had raised some venture money, and-- but the point being that we were approached because Overhead Express had a technology in it, that when you said "Preview," whatever you saw on the screen was perfectly replicated on the printer, and even though Windows had Windows drivers, they were not WYSIWYG, they were not "What you see is what you get." I mean, believe it or not, even though they were promoted that way, and even though software developers did not have to do what we had to do in the early business graphic days, where we had an add-in called, PIK, Printer Interface Kit. So, that when you bought Apple Business Graphics, the dealer or the user would buy the PIK, which would give them WYSIWYG drivers for 100 devices, and in fact, their device interface technology was so compelling that a sidebar is, we got approached in the early '80s by Control Data to buy our company. We got an offer, Charlie Federman was our intermediary, he eventually went on to build Broadview Associates, the largest M&A firm in the country, in the technology industry. And we also got-- we were wooed by Gary Kildall company, Digital Research, and they at the time were still competing head-on with Microsoft, and Gary wanted to integrate-- and his lieutenant Gordon Eubanks, wanted to integrate our device interface technology into their equivalent Windows system, and I won't get sidetracked on that right now, but the point is that, our device handling technology was really -- to some extent by insiders in the industry was, even a more compelling story than our Overhead and 35mm Express for an end-user. So, we were approached by Allen Schlangenbaum who said "Look, Mitch and you have some history," which you know, we were competing so the history wasn't all pleasant. We do have a good relationship today, as do most former competitors, but Allen said "Mitch wants a presentation product that has your technology, WYSIWYG" and so, we entered into a contract with Lotus to develop the ultimate presentation product, that would be WYSIWYG, true WYSIWYG, and would interface tightly with 1-2-3, and that was going to be Lotus' answer to PowerPoint. I thought, again I've used this word before, I was flattered. I was the smartest kid in the room, because rather than sell my company to Lotus, I entered into a licensing agreement, and so it was great. We got, you know, a sizeable upfront payment, we would get development fees, and then we would get a licence -- licence revenue for every copy of the software, and we only licenced the software to Lotus for purposes of desktop computers. So, of course being in the shadow of Digital Equipment, I thought that the VAX was going to live on <clears throat> excuse me, for the rest of the time, and the Digital's office automation systems would be pervasive into 2000. Little did I know that that would all disappear. So, I licensed my technology to Lotus for a Lotus branded product, but I kept the licence rights for the VAX, and a friend of mine Carl Nelson [ph?], who was partnered with Allen Kluchman, with a product called 20/20, a spreadsheet for the VAX. I figured, "Oh, I'll just call Carl, and say 'Karl, you sell VAX presentation software, do you want to publish my product?'" Well, unfortunately for better or for worse, Mitch retired and Mike Colwich [ph?], who always had a passion for Freelance, but it wasn't really about Freelance. Mike called me to his office, and said "David. You know, look you're building a great product, but I need a product today, so I've bought Freelance, and so Freelance we can put on the market today, it's got an interface that looks and feels like 1-2-3, and while we appreciate your efforts, you can have your product

back." Of course, it was a little bit of a kick in the chin because now, in the game of musical chairs, I was the odd man out. Lotus bought a company, Microsoft bought a company, and Ashton-Tate bought a company, although they no longer exist and to some extent, Lotus no longer exists. And it turns out that I probably should have seen the hand-writing on the wall, but not too long thereafter, I mean, we continued to expand, and we were doing a very sizeable business with other types of partners. We partnered with a company called-- it'll come to me in a minute, the head of the division was Jim Treliving [ph?]. They were a variety of high-end graphic workstations: Genigraphics, and Jim was the head of the division of a company headquartered in Chicago, and it'll come to me in a few minutes, my wife will say "It's an early onset of dementia of Alzheimer's," but basically we decided to take our presentation software, and instead of focusing entirely on the PC, we would be the substitute for these 10, 20, \$50,000 graphics workstation. We could do everything on a PC, and drive a \$100,000 film recorder, quite literally. And so, electronic presentations were still not the rage, slides were still the bread and butter. So, on the desktop PC front, everybody was starting to interface with MAGIcorps, Freelance interface for remote slides, PowerPoint interface for remote slides. But we then, were going to become the replacement for a \$50,000 work station that lets you do the slides on your desktop, and press a button and go right to the film recorder. So you had it there, and in fact, Polaroid may their soul also rest in peace, had a very, very interesting technology to use their instant film, so that I could press a button, and within minutes I had 35 mm slides in my tray, and there was a fellow, John-- I'll have to remember all these-- John Rudder. John Rudder was an engineering manager at Polaroid, and I can pull all sorts of names out of the hat, Bill Gormley [ph?] and Stu Lesser [ph?] probably was the key individual who worked for the division, and Polaroid set up a presentation division, to leverage their film recording technology, to maybe go head-on against 3M, although they were no EM of 3M transparency. And so, we built a Polaroid branded version called Presentation Express, that was sold as a \$2,500 solution with a computer, as opposed to a \$50,000 solution, and we also provided software to a Minneapolis based company, which was the leader in film recorders, and these film recorders were not just static. So, the Minneapolis company whose name will also come back to me, Jim Teeter's [ph?] company sold the film recorders to the film industry in Hollywood, because now they were using computers and printing the film, the animation and the movies, printing them to film. It was not digitized yet, but they were producing film, and so, it was almost <laughs> funny to see a -- you know, a couple hundred dollars software product in a thousand dollar computer, driving a \$100,000 film recorder. And so that became a big part of our business and really, the message on the PC front was, I got a call from my key person at Digital who had bought tens of thousands of copies of software for their use and distribution, and in fact, their division focused on office automation, was selling us as a solution, we were building a high-end slide product for the VAX station, and you know, we were going gangbusters, and they called me and said "David <laughs>, Microsoft is giving us PowerPoint for free, it's a problem. We were perfectly happy to bundle your product with Office, but when Microsoft said 'We'll only give you Office if you include PowerPoint for free,' it's a problem." And so, that was the handwriting. So we had a few-more-year-run, but you know, <laughs> that was really, that was the killer. And again, we continued to produce our software, and we eventually sold the business to one of our distributors, a fellow named Wes Carter [ph?], who continued to sell and support our software. We had a major distributor who continued to sell in France, he was an MIT student here, in the '80s who said "Wow, this software is great." He cut a deal with us, and launched our software in French in Europe, and eventually, we had a very significant multilingual business. In fact, one of the early stories is that, when we were on the contract with Apple, and we were becoming adept at multilingual, one of-- Marc Goldstein

[ph?], who is the son of one of the key guys at Broadview Associates who is a very close friend of Apple's general council, Al Eisenstat, asked us to help him with translating his software. So, there was a lot of camaraderie in those early days amongst the various companies, and it was a small network. We never realized what the giant Jobs would be, or Apple, or even 1-2-3 and Mitch Kapor for that matter. We also, our technology and our Overhead Express that Lotus begged off on, eventually became the technology in the Phoenix Technology PostScript rasterize engine, and I think it may have even made it into some of the PostScript technology that Bitstream was offering. So, our software lived on in many ways, and our vision lives on in PowerPoint, which is arguably the most pervasive desktop software product of today, because I know many people use Word, and many people use Excel, but I have to believe that there's that-- many more people use PowerPoint. So, what's your next question?

**Brock:** <laughs> Well, a couple follow-up questions, if I could. Maybe in reverse order. When PowerPoint became bundled with the other applications, as part of Microsoft Office, did that present similar challenges for the rest of the presentation software industry?

**Solomont:** Yeah, I mean PowerPoint basically-- I mean Microsoft is-- arguably was and probably still is one of the fiercest competitors in the software industry, and their track record was "If we didn't get it right, we'll get it right again," and of course, you know their success was not even based on their own original core technology. In MS-DOS, it was third-party acquired, and they weren't even the first choice for IBM. Digital Resources was. But, they came out with Multiplan, and they kept at it until they replaced it with Excel, and they kept at presentations, they were working on a bunch of things, we'd talk to them along the way, but when they came out with PowerPoint, they continued to improve upon it. But they realized early on that because Lotus had 1-2-3 had Freelance bundled, that PowerPoint, they really -- Microsoft had to bundle the entire Office Suite, and then it was a no-brainer, they just basically bought market share. There was no one. I mean, Lotus arguably grew up to be a Notes company as opposed to an Office company, but arguably they had to do that because there was just no way they could compete -- there's no way anybody could compete against Microsoft. And, the giving away is really what led to the eventual - not only the acquisition of these other companies, but the demise of all of the other products. I don't know if Freelance still exists, but at one point, it was a 100 million dollar a year product, unfortunately 35mm Express never achieved that sales level, but when you get something for free, there's nothing you can do about it. In fact, the other story I can share, is years later I started an internet consulting company -- 125 people, five offices. Again, we were really early pioneers in online auctions, and in fact, we were early proponents of live video, and we did the first live video broadcast from Mount Kilimanjaro in 1995, using satellite telephones and a product called "CU-SeeMe," licensed out of Cornell from a New Hampshire company White Pine software. And they had gone public, I was an investor. White Pine was an investor in my consulting company and the CEO Howard Berke told me, he said "David, I got a call from Microsoft, they want to use our technology in NetMeeting." And I said, "Great," you know, and I wasn't going to charge them a lot of money and Mike said "No, no. You don't get it. We want your technology for free," and in fact Howard balked and the future and the rest is history. NetMeeting came out for free, it doesn't exist anymore because it has since been replaced by God knows what other Microsoft product, but the point is, that CU-SeeMe died a long, slow and painful death because Microsoft came on, and killed them like they killed many other companies.

**Brock:** Going back in time, to the beginning of when you were working on Apple Business Graphics, it seemed to me, and correct me if I'm wrong, please, that you have the advent of the spreadsheet, phenomenally popular, really gets the Apple II going, really gets maybe the personal computer going in a business context--

**Solomont:** No question.

**Brock:** Then it becomes this idea of, the visualization of that data, and that leads to the development of, as kind of a companion to and augmentation of the spreadsheet is the charting, graphing -- this whole category of graphics on the personal computer. Is that correct?

**Solomont:** Well, it's correct, in hindsight. In hindsight it seems like "Oh, that's logical," and in fact, I can point to many other industries where, you know, where now big data is like the rage. And in fact, I know of a number of companies that are now the visualization of big data. So, it seems logical. It turns out that our entrée into presentation graphics and business graphics was actually not as thoughtful as that, I will confess. It turns out that while I had, in my business plan, I had identified a core set of products, which would be a database product, a graphics product. I can't recall the other modules, but database was a big thing because I was really big on databases as the core, and it really is the core. It's the core of everything, even a spreadsheet. But what happened was, even though I was familiar with what was going on with VisiCalc, and I would argue that Dan Bricklin really created the personal software industry -- I mean the personal computer industry. I mean, Jobs built the hardware, but if not for VisiCalc, it would have been a hobbyist's toy. Bricklin almost singlehandedly created the market. Now, admittedly, he created the market around the Apple II, and by the time the IBM PC came along, he passed the mantle either willingly or not, to Mitch Kapor and Mitch really harnessed the power of the IBM PC with the integrated graphics and took it to the next level, and then of course, Lotus passed the mantle onto Microsoft. But, our graphics was -- Steve Covitz, my partner, was developing a database product and just figured that it would be easiest to get the graphics working first, before he finished all of the technology required to do a database product. So, graphics was because it was easiest. Little did we know that at the end of the day, I actually think graphics and the challenge of doing WYSIWYG was actually even harder than database, and we could argue what's easy, what's hard, but the point is, you're right. The graphics was a natural add-on and companion, but we jumped into it before the spreadsheet was even the rage. I mean, we jumped into this August 1<sup>st</sup> 1980, at a North East computer trade show, I think November of '80. Within three months we were showing our product in a shrink-wrap package, and it was for sale, and we, I think at that point, were then approached by Apple, and very quickly we, I think, took our product off the market, in favor of an Apple branded product, which meant we could focus on the development of the software, and Apple would focus on the sales marketing, or marketing, sales and distribution, which obviously, you know, was a huge win for us.

**Brock:** Was Apple in essence the publisher of your software, and then you got a royalty on--

**Solomont:** Yeah, it turns out that again, it's in a simple sense we were the author, they were the publisher. However, it was a little bit, it was different. It was different in as much as there were a variety of publishing companies and products. So, Dan Fylstra, who was a Harvard Business School classmate think of Dan Bricklin, he went out to California and started VisiCorp, which actually started life his Personal Software, and then eventually when he caught the Windows bug, which Apple-- well, I won't say Apple pioneered, which Xerox pioneered at Xerox Parc, and then Jobs ripped it off from Xerox, and Gates ripped it off from Apple, and VisiCorp just decided to be the third guy in the game. The point was that, I'm sorry <laughs> I've lost my train of thought.

**Brock:** Just we were talking about publishing--

**Solomont:** Yeah, but the point was that, so Dan files for VisiCorp, or Personal Software. They were a publisher, so they basically took an author's product and they published it under their brand, but it was still a visible, like a book, it was still visibly-- Personal Software is the publisher, and Dan Bricklin and Software Arts is the author. Our relationship with Apple was actually different. It was more of a-- while we were the inventor, and in a sense, they became the manufacturer/publisher. In other words, we were going to be transparent in the process, meaning for all practical purposes, the value of this was that Apple did have a third-party software distribution business led by Mike Kane, and I can't recall what they called it, but it was a typical, you know, "You get a royalty, and if it sells, great and if it doesn't, great," and Apple wasn't going to put any money into marketing it necessarily. Ours was, Apple wanted to have one of its core branded products be a business graphics/presentation product. So, this would have their name, this would benefit from all of their marketing, sales, distribution strength, and we were happy to be hidden, and while it was royalty, or it was success based, it was different because we had guaranteed payments. So, they paid to be in a relationship with us, on an ongoing basis. And, you know, it was a great deal. I actually give credit to my attorney for helping me think it through. Attorneys don't negotiate, I negotiated, he papered it. He's a dealmaker, not a deal-breaker. There was only one small problem, the day that we announced that we were going to offer our software to IBM, for the IBM PC, and Digital for the Digital PC, and Wang the person running the Wang software business at the time, or the Wang product manager is Rich Levandov, who's now arguably one of the most successful venture investors in North America. One of those guys you've never heard of, Zynga, Tecoda [ph?], TrendMedia, Tremor Media [ph?]. Anyway, the point is, not to get off on too much of a tangent, my relationship with Apple soured 180 degrees. It was like, they didn't want to answer the phone. Frankly, I know I'm on camera, but it was a relative <laughs>-- it was a reflection of the culture and the mentality that was driven into everybody by Steve Jobs. I mean, obviously, he was genius, but he was the ultimate "You're either a company man, or you're not," and by focusing on other computer platforms, this was heresy. Even though I explained to Apple that they would be the beneficiaries of whatever technology inventions that I was able to produce around the other platforms, and they just didn't get it. As a result, while we launched Art Department on the Mac, we were in the process of developing the Mac version of 35mm Express and Presentation Express, and Overhead Express, and in fact, it was a fresh product to compete against PowerPoint. We pulled the plug because there was just no way that we would get the support and the relationship from Apple that we thought we deserved, and at the time it was the right decision, because frankly Apple became a fringe player, and it wasn't until many years later when NeXT bought Apple or Apple bought NeXT, there's an argument who

bought who, but it wasn't until many years later that Apple became a major player on the PC, or the desktop front, so anyway.

**Brock:** So then, well a couple of questions, if I could. When you started, when you started the company, what did you and your technical partner need? What did you need to get going in the business?

**Solomont:** Well, we needed Apple computers, so we went out and a friend of mine, Ralph Wagner was selling Apples out of the trunk of his car. He'd been an ADL consultant. Another friend of mine, Joel Skolnick owned the Computer Store, which was one of the first independent retailers. Back then, Apple didn't have stores or Genius Bars, in fact, they didn't even sell direct into retail. They sold into distribution, back then it was "Stuff the channels, and hope the product moves through." But, we bought computers from some of the early resellers, and then basically Steve was a technical genius, he just figured out how to write this software. If I think about it for a while, I'll remember what language he wrote it in. I believe it's - I believe we decided, VisiCalc was written in assembler language, at least to start, I believe we decided to write our software in Pascal, and so I believe early on, we got a copy of USD-- UCSD, University of California San Diego is one that offered the commercial version of Pascal. It might have been funded by a company called "SofTech," which was a major software company at the time, and I believe we programmed in Pascal, and then we somehow or another compiled it into run code, but we didn't need much, I mean, you know you don't need much to start a software company, you don't need much start an internet company, and at the time, we were able to-- I think we, Steve and I might have put in \$100,000 to get the company started, because we wanted to hire an administrator for the office, and we wanted to have an office, and we wanted to have another technical person, or two to work with Steve, and eventually we had to hire writers. Interestingly enough, I started the company by subletting a little office in Kendall Square in Cambridge, in a famous building, the Clock Tower Building, 238 Main Street. In fact, my office partner, neither one of us could afford the rent entirely, it was a guy named Naren Patni, and Naran eventually went on to build his company to be one of India's most successful outsource multibillion dollar company. And in fact, the way we generated income for BPS in the early days was as a college student at Tufts, I was doing consulting. I was big on paying my own tuition, my father would do whatever I wanted, but I just--it was a little bit of pride. The bill I think at the time was \$1,600, which was a lot. Something short of the \$60,000 a year it is now, but so I would do consulting, and I did consulting for John Sununu. I had the first personal computer at Tufts, it was an ASR-33 with a punched tape printer reader, and John put it in a box with wheels, and it had an acoustic coupler. So, I was the big man on campus, I had this portable computer that I took to my dorm room, and I cut into the phone wires in the closet, and I took a phone line, and was able to dial into the DECsystem-10, and do consulting. John did engineering consulting, and I was writing some of his software, under his guidance in-- God knows, it could have been in Fortran, or BASIC. Probably Fortran, and then Naren Patni was keypunching tapes, EBCDIC tapes in India. So people would give him paper. He'd keypunch it, he'd bring in EBCDIC tape to the US, and I would take his tape and I would convert it from eight-track EBCDIC to seven-track ASCII or something. And I also did some early consulting with a product called SPSS, a statistical package for social sciences. And so I would do a mix of hourly consulting to generate revenue as a student. And eventually to generate some extra cash to fund the software business. And but we didn't need much. We just needed to basically we needed innocence, because you know, if you think about what you do to start

a company, it's your ability to do what other people might think is impossible. And the ability to do things that you're not supposed to know that aren't doable. Like if we had known that it took a \$50,000 workstation and \$100,000 film recorder, MGI, that was the name of the Minneapolis Film Recorder company. If we knew what it took to do slides, we never would have attempted to do it on a little Apple or IBM PC.

**Brock:** Well, once you decided that you weren't going to develop the full database product, but rather, you know, concentrate on the graphics, and you decided to start to manufacture it, how did you handle that manufacturing aspect of reproducing it onto diskette?

**Solomont:** Well, we, of course, for the original Apple line, Apple handled all the manufacturing. When we decided to, and in fact, Wang handled all of our manufacturing, depending on which relationship it was determined who did manufacturing. But eventually we figured out how to do manufacturing. I had an Operations Manager, Valerie Ovarin [ph?], who basically, it was all outsourced. You know, we outsourced our printed manual to a printer; we outsourced our disk production to a disk manufacturer and production company; we outsourced the build-the-box to a company that built cardboard boxes and put it all in the shrink wrap. And then we would basically manufacture 1,000, 5 or 10 or however many thousands, and just drop ship them. We never necessarily maintained our own physical inventory, other than maybe a few parts to put together. And actually at the time that we chose, as the Apple relationship turned to not be dependent strictly on a manufacturer or publishing partner, and as we turned to produce our own software, that's when we went out and got venture money. We raised some money from a local firm called Eastech Associates, which was sort of a precursor to what I later started called Common Angels. Eastech was a group of successful technology industry entrepreneurs from Prime, Applicon, Compugraphic. So they had a big fund at the time, five million dollars. <laughs> And they would invest in small companies, and then provide the assistance. Fontaine Richardson, the founder of Applicon came on our board with that investment. And we also had an investor from the West Coast, Charlie Kokesh, Technology Funding. And Charlie went on to manage a number of very successful technology funds, and some focused entirely on software. Now which, investing in software back in the late '70s, early '80s was not a fashionable business. And anyway, we used that money was to basically be able to expand our own marketing and sales effort, and also just to have the wherewithal to build, you know, 10,000 copies of a product as opposed to 500 or 1,000.

**Brock:** When you started to-- so you had the arrangement with Apple in place for them to essentially create, manufacture and sell Apple Business Graphics as their own products, and you started to explore selling a similar sort of graphics program with these other computer manufacturers. Okay.

**Solomont:** Well, let me clarify. The Apple Business Graphics was sort of our first product line. And then we told Apple we were going to offer this to other manufacturers. On similar relationships. Some like Wang wanted to produce it themselves. Some like IBM, I think we have produced it for them. And by the way, the other workstation company that we produced 35 Millimeter Graphic software for was Pansophic,

just it came back to me a half-an-hour later. But the point is for these other categories where we were moving into more presentation-oriented, than data-oriented, for Overhead Express, 35mm Express, Presentation Express, those are the ones where we were exploring even more radical relationships with the other computer manufacturers and other graphics industry participants. So where we would actually manufacture. So when I say graphics industry participants, so these were the relationships with MAGIcorp for remote slides, Pansophic, Genigraphics, Autographics for workstations, management graphics, MGI, matrix, Polaroid for film recorders. And so those, depending on the nature of them, we might, or they might manufacture. So Polaroid, for example, I have a branded Polaroid box for a Presentation Express, but they weren't in a position to actually manufacture. And also the tricky thing about software, and the good news about today's software where there are no boxes, you press a button and you download it, is you get the latest and greatest. So when Polaroid entered into an agreement to buy our software, they wanted to buy-- I honestly don't remember. It was five or ten, or however many thousands of copies. They wanted me there-- they were a manufacturing company. So they said, "Well, we'll order this, you'll ship it, we'll pay for it." And that was great. I mean, I was getting, you know, I was getting \$250 a box for a \$500 or \$600 product, and so even if I ship them a thousand at a time, it's a quarter or a half-million dollars. That's not bad. And but the problem was if I took that order, they'd insist on me shipping it. And if it took them more than three to six months to ship through the channel, then by the time the customer got the software, it'd be out of date. And while there was a beginning of-- we did real time communication. We have the module where we can communicate behind the scenes. Computer to computer, for slide making, and for a variety of other reasons, but there was no internet per se that we were using as the backbone. We were using an acoustic coupler, or the built-in modem in an Apple, and we were dialing. Later when Digital had network interfaces, and I still had my original-- the first laptop computer from Digital, which I think today's laptop looks about the same size, costs about the same amount. But it's many, many more times more capable. It had a network adapter built-in. So eventually you could communicate over the network to a local computer, which eventually became IP communication, whatever. So back then when we were talking, we could have a bulletin board, and we could dynamically update software. But it wasn't really ready for prime time. So I was sharing this story with a friend the other day. So I finally went to the purchasing group at Polaroid and I said, "I got a deal for you. You'll issue me a PO for a thousand, or five thousand copies of this software, and I will ship you a thousand or five thousand license agreements, like pieces of paper. And then you'll pay me for the software in its entirety, maybe less \$25 per copy. And then as you need the software, I will manufacture and deliver it." So it was actually a very creative way to sell the software, get paid, but deliver it as needed, because then we wouldn't be in pickle because the customer might have a software version. 'Cause, you know, software, even back then it changes every day. Today, on the internet, software is a service. Well, it changes every day, you take advantage of those changes every day. Back then, there was no real way to take advantage of changes other than physical releases on an annual or six-month basis. Like, you know, monthly, I mean, weekly, daily, give me a break. So anyway.

**Brock:** Interesting. One thing that struck me in looking at-- in my research was that several things seemed to get established, kind of metaphors got established very early on with the presentation software. That is really embodying in software the metaphor of the overhead, and of the 35 millimeter slide. The slide show, the slide carousel, the almost like the light box slide sorter-- all of these motifs or

metaphors seem to get-- seem to have been in everybody's offerings, kind of very early on. And so I would like to hear your thoughts about that, if that's correct. And also it seemed that there was a movement kind of from software that handled numbers, be that a database or a spreadsheet, which I guess is kind of a database. But spreadsheet, database, then you have software that's importing those numbers and making graphics. And then you have software that's taking those graphics and assembling them into presentations. And then these things merger variously or--

**Solomont:** I- I--

<overlapping conversation>

**Brock:** Or if you could talk about that.

**Solomont:** I'd break it up, or looked at it a little bit differently.

**Brock:** Excellent.

**Solomont:** I would look at the first, which were standalone graphics, typing some numbers and that's where we started. Make bars and pies and charts. And then it was import or integrate with spreadsheet data.

**Brock:** Okay.

**Solomont:** That was sort of a second step. It's kind of a "1" and a "1a". So Apple Business Graphics started as "make a chart." And it very quickly was integrated so it could make a chart. Either what you typed in directly, or what you imported from VisiCalc. VisiPlot was pretty much the same. It was, you know, type in something and press a button, or import it from VisiCalc. 1-2-3 was the first product where you'd type in your data once, and you press the button, and it could, you know, it could do your spreadsheet analysis, and another button could chart it. So it was all one process. All that got collapsed. I think we clearly pioneered the use of sort of changing the presentation metaphor from business graphics to presentation graphics. Because Overhead Express really was the thought leader and the market leader in, you know, a presentation starts with words, not numbers. And in fact whenever, over the years, I sort of learned about making presentations on the job, but I learned the most from 3M. And 3M used to have all sorts of training on how to make better presentations. Because they wanted people to use more overhead transparencies. And there's all sorts of rules of thumb. And so even to this day, I take out a piece of paper and I put down nine boxes, three-by-three, and I literally just, you know, start with the first slide is the header, what it's about, and the last slide is the trailer, how to reach me, or sum-- you know? And then in between the second slide is, "I'm gonna tell you what I'm gonna tell you." And the next to last

slide is, "This is what I told you." And then that leaves five slides in the middle. And frankly, of those five slides, maybe one is a bar chart. You know, because I'm telling you how to launch this product. So the first slide is, "Here's the market," and I put bullets, because it's qualitative. And then I put up a chart. It's quantitative. And then I might have bullets, and there's what our product is. And then a chart, here's what our production, our sales are going to look like. And if you think about it, present-- good presentations with maybe a few rare slide exceptions are very heavily worded. And so we produced Overhead Express, because there were all these meetings at Digital, like day-in and day-out. And we were just listening to the customers. And this may have been a result, if they had our business graphics product, and they were like, you know, we're like wondering, "Well, gee, they have all these meetings, and that product doesn't fit." And so that's where we came up with Overhead Express, and that's the metaphor of the words. And we introduced the metaphor of Slide Sorter, and the other variations in 35mm Express, which was a full-blown presentation product with everything integrated: words, numbers, slide sorter, electronic and slide-making over the phone, or slide making directly at the desktop with an electronic film recorder.

**Brock:** What year did you introduce 35mm Express? Do you recall?

**Solomont:** I'd have to look it up. And I will confess that Overhead Express, we recruited some outside talent who had an office in this very building, who were experts in font development and kerning. Because the attributes of great presentations had less to do with the beauty of the bar chart and the pie chart. They had more to do with the lettering technology and kerning and all of these things that are typography. And so these fellows, whose names will come to me in a moment, Tom Bloomberg and his partner-- it'll come to me-- we acquired their technology to integrate in the Overhead Express product, they had the font technology, and we basically added the user interface, which was the core element. When we wanted to expand to filmmaking technology, I will confess that we also went outside, and we engaged on a license basis, and then acquired fully an extraordinarily talented engineer named Jeremy Sagan. And Jeremy Sagan, just, you know, he said to me one day, you know, "David, my father is going to come by the office," and you know, I said, "Well, that's great! I welcome your family." And I'm like, "You know, okay, his father, Carl Sagan." I had-- I was totally clueless. I mean, I don't have my head buried in the sand. I know a little bit about the world, but I didn't realize what a rock star Carl Sagan was. And Jeremy was an extraordinary individual. And money was not what motivated him. And to get him really excited about the next generation's 35mm Express, I literally went out and got him a Mazda Miata. It was like early-on, so if you want to look at timing, find out when the Miata was launched. I think it was in the mid- to late-'80s. And I got him like the first or second model year, I think it was a ten- or twelve-thousand dollar car. And when Jeremy eventually left the company, I inherited the car. Not that I wanted him to leave, but he and a fellow, John Galinato, John had been working at Autographics, he was one of the pioneers in remote slide transmission, breaching the MAGIcorp patents, which is a whole separate story, funded by the same venture guys who funded my company. But anyway, to make a long story short, venture guys always cover their risk. And if they believe in a space, like presentations, they'll, you know, they'll invest in three companies, because portfolio theory says one will win. And John and Jeremy had developed some of the original core technology. And we acquired that, and embodied that in Presentation Express. And so, you know, I can't fault Microsoft for buying PowerPoint, and I can't fault Lotus for buying Freelance. And we

didn't buy companies, per se, but we did license and buy technology. And you know, I guess you'd call them acqui-hires on a modest scale.

**Brock:** And it seems like Overhead Express was out by '84, and 35mm Express was certainly out by 1986. I think-- does that sound right?

**Solomont:** I can check the dates, but that could be about right. Overhead Express may have been earlier, but I'd have to check.

**Brock:** Okay, that's what-- the earliest reference I found. With Overhead Express--

**Solomont:** And I have the registered trademark certificate. So although that doesn't happen till years later, but I can look them up.

**Brock:** Talking about "what you see is what you get" aspect of the Overhead Express, am I correct in understanding that when a user was using the software, you would type in text, type in some other attributes, define certain attributes, and then it would like do a render, and you would see the--

**Solomont:** Our software and our competitive advantage and our mantra was what you see on the screen is what you're gonna see on your printer, your film recorder. And there was no one who did that properly. I mean, no one. I mean, Freelance, PowerPoint, Decision Resources, Harvard, no one. Many, many years later <phone rings>, many, many years later, I believe Windows driver technology today and Microsoft driver technology today finally have met the challenge. And it's probably because Apple partnered up early-on with Adobe. Adobe had something called Postscript. And the internals to Postscript were the ability to put fonts in a very specific place. And that was the technology that we incorporated into Overhead Express and eventually Presentation Express. And that was really-- I mean, the three things that were important, you know, data representation was low on the totem pole. First and foremost, it was ease of use, and the content, you know, words. And clip art, okay? We shouldn't forget that words are 60/70 percent. Clip art might be ten or fifteen. And data ten or fifteen. And so it was what-- the ability to create it simply. Ease of use. And then it was what you see is what you get. Because if you're printing it on a film recorder that's going to be remote, so you won't get it till the next day, or you're going to print it on a 35 millimeter slide projector, slide film recorder that will take some hours to develop the film. Or even if you're just going to print it on a Techtronic's die-thermal transfer printer. You know, printers back then didn't work in eight seconds. You know, it was like, you know, thirty minutes, ten minutes. The most frustrating thing in the world was what does appear. And then it wasn't just appear in black-and-white perfectly, then color became an issue. And that's where Windows fell down miserably was the color on the screen-- and admittedly, that's a problem. Because screen technology differs, and so I will give them a little bit of leeway there. And in fact, I mean, the slides were a big deal. I just-- I always volunteer tell people make slides. I mentioned, too, that one of the pioneers of the software industry, Mort Rosenthal,

who is not a pioneer in changing, in product, he changed distribution. Because early on our software was sold through retail, or to Apple who sold it through retail. And eventually it was sold direct to major corporations, and Mark built what eventually became a two billion dollar business selling direct to corporate. When he started, he had to open a retail store in Massachusetts, because otherwise Lotus wouldn't sell him 1-2-3 to sell to corporations. But I made Mark's slides. I made them on my computer in my office, and I transmitted them over the phone, and they came back the next day, or I printed them on the film recorder and so he raised his first money for corporate software using 35mm Express. So if the product wasn't a multi-billion dollar success, at least some of the users were.

**Brock:** When-- in both of the-- in the Express software suite that you made, was it that everything on the screen was WYSIWYG or was it you would have almost like a form or a query.

**Solomont:** No, no, no. It was-- everything was WYSIWYG.

**Brock:** It was.

**Solomont:** One-step process.

**Brock:** I just wanted to talk a little bit about, I guess 1983, which I believe is when Bob Campbell who you had been working with at Apple decides to leave with another technical person from Apple to create Forethought. And as I understand the origins of Forethought, it was to bring a kind of Xerox Alto experience to the IBM PC. That was their initial idea, which seems a little bit like, in a way, going up against a Lotus 1-2-3, which had just come out. And it seems that at the same time, too, as we touched on at Digital Research, also out in California, was creating kind of a graphic user interface for their CP/M operating system, and also doing kind of a suite of products that seemed to me kind of like a Lotus 1-2-3 thing. And Digital Research comes up with presentation software around 1984. I think they had something called Presentation Master that worked in this kind of graphical user interface running atop their operating system. So I was just wondering about this moment in time, as you experienced it in '83 '84 about all these-- seems like there's a lot of similar efforts around the graphical user interface, and that somehow presentation software is very much right in there. I just wondered if you had any thoughts or comments about that.

**Solomont:** Well, there's a lot in what you just said. So let me kind of ramble on a bit. First off, excuse me, I don't recall the bold vision of Forethought when they started off. I only know it from talking to Campbell. And in fact, I thought their first product might have been FileMaker. So there may have been a plan to develop a fully integrated set of products, and they started FileMaker, which still lives on today, I think.

**Brock:** It does.

**Solomont:** And in fact, I've got a friend, local, Alpha Software who's been competing against FileMaker and all those database software for -- he's going on 35-odd years. Well, not quite 35, but he started in the early '80s. So there were two things going on back then. There was the presentation software products. And some of the pure play companies, like ourselves and Randy Weiss and Dave Tarrant at Graphic Communications, Inc., who had a product before Freelance. Name escapes me, but it'll come back to me. And then there were the companies doing the operating system type work. So if we start on the operating system level, you know, obviously, it all started at Xerox, and then it started to migrate to Apple, and Personal Software, which became VisiCorp, and Microsoft and IBM and Digital Research, and all of those. And there were a lot of companies competing for the operating system, switching from a DOS-like, or a text-based to a graphical user interface. And Microsoft won, maybe not for the right reasons. They didn't have the best software. You know, probably because they cut a deal with IBM. So they became pervasive in their OEM strategy. And yes, each of those companies also, I mean, presentations is a simple, easy to create product, maybe. And so this would show off their capabilities. The interesting thing is with the exception of VisiCorp, I don't know that we ever had any specific discussions with VisiCorp, because they owned Software Arts and VisiCalc and VisiPlot. But we talked to everybody else. I mean, Microsoft, maybe not deeply, and not in Redmond, but absolutely Digital Research. I mean, we were-- their lead investor, I think, was Jackie Morby at the time from T.A. Associates, and we were in some level of acquisition or licensing discussion with them after we balked at selling to Control Data. Actually, no, there was another chapter. It was the Control Data, in *Software Magazine* in 1981 I was quoted in an article that I was going to sell my company within a year. Charlie Federman read it. He later when to Broadview, but at the time he was working with Bill Bird representing Control Data, who was very acquisitive. And so they may have made an approach in the '81 timeframe. And then when we didn't accept it, then eventually-- and again, the timing may be a little bit fuzzy, but we then got an offer from a company called BPI Systems. BPI was actually the first microcomputer software company to go public. Little known fact. Founded in Austin, Texas by, as they say, two good ole boys, John Moss and the other fellow's name [Randy Ferguson], who will come back to me. A lot of things will come back to me. And they had the first accounting software for the Apple II, the Apple III and The Lisa. And we met them just as fellow software companies doing business with Apple. And we agreed to be acquired by them. And it may have been-- I'm trying to remember, but it may have been I late '83-ish. And they were a public company, and so we were going to be part of their public company, and we went down to Texas to close the deal on the last day of the year, the last day of the quarter, the last day of the month. And their numbers were lousy, and everybody agreed to pull the plug. So I actually-- my wife bought me a hat from Charlie Dunn, the bootmaker, 'cause we couldn't afford the boots. They were like five- or ten-thousand dollars. And Charlie Dunn is the subject of a Jerry Jeff Walker song who wrote *Mr. Bojangles*. You're a historian, so you can look it up. But the point is, I've still not worn the hat. 'Cause I have the hat. It's in my closet. And I was only going to wear it when I got acquired by that company. But it was after that that since our board was in a sales mode that Federman took us around. And Digital Research is one of the very interesting companies. 'Cause we had the solution to the WYSIWG problem, and I suspect they were working on this presentation layer, and Presentation Master, and we had a solution to that problem. And I don't recall exactly why we did or didn't do a deal. But we didn't. And so we talked about the operating system guys going WYSIWG and graphical user interface. And that, you know, the software companies started before the graphic interface thrust, and just kind of extended on top of it. So our business graphic software wasn't a WYSIWG, the original was a WYSIWG. And then we turned 35mm Express into a

WYSIWG solution. Although the interesting thing is is that 35mm Express and Presentation Express, we were in that evolution and WYSIWG operating systems hadn't fully come into being. And so we actually provided a WYSIWG without the operating system. So 35mm Express and Presentation Express, their first versions, you could move around and do everything you could do with a graphical user interface based solution without having the Microsoft operating system. Because when Microsoft came to visit us with Version 3.0, maybe even 3.1, I mean, they came to visit our company in Cambridge and put the full court press -- launch and do your software for this, you know -- we weren't impressed. And we just didn't see why we should invest all that money. Well, we now see. And in fact, there were companies along the way that then wanted-- companies that then wanted to launch. Xerox made a big thrust in the software business, and wanted to launch a presentation product under their brand to support all of their peripherals that would do true WYSIWG and they wanted to do it in a graphical user interface Windows environment. And Walter Schwartz, who might be a good resource for you, I think we were leading contenders to develop that software for him. I think he finally went with maybe MicroGraphics or another Texas-based company. I can't remember exactly why. Probably for some sill reason, but be that as it may, there was a lot of interest in moving to the graphical user interface and a lot of companies that were going to change the-- what's the right word-- the way you use presentation software. But again, we had incorporated that before WYSIWYG was available and carried it over.

**Brock:** In thinking about this presentation software market, just crudely for some idea about market share, what's your impression of how your market share was over time and...

**Solomont:** Well, I think pre-acquisition, before Microsoft bought PowerPoint and before Lotus bought Freelance, I think that we were four or five competitors. There was Decision Resources, there was Harvard, there was Freelance, there was us and then PowerPoint was sort of the late entrant and they only entered on top of a graphic community interf-- graphic community-- they only entered on the Apple, on a graphical interface. All of the others sort of came in before and then built out on top of it. You know, it's hard to say, I think we were probably all kinda neck and neck. It may have all been, the four of us might have each had twenty, it's somewhere between twenty, twenty-five percent, I don't think any one of us were necessarily dominant. However, having said that, within the market for those who were creating slides or had some professional requirement, I would say we were the eighty percent market share. So, I'd say in the financial institution, in the accounting, or even in the research department, we were all neck in neck. We were eighty percent in, we were really big in the department, we were big in medical, in hospitals and in the department that-- <laughs> what's the department that, oh gosh this will really look poorly on me, reflect poorly-- but the departments that do autopsies...

**Brock:** Forensic?

**Solomont:** Yes, forensic...

**Brock:** Or pathologists, maybe.

**Solomont:** We were really big with forensic pathologists, we were really big. I mean we had, and VA medical centers for some reason, and I think it was driven by slides, these were people who were doing lots of presentations and lots of slides and there was just nothing like us. I mean we were sold with every desktop film recorder, easily eighty percent because there wasn't, you know, I mean we had that nailed.

**Brock:** Mm.

**Solomont:** Even when PowerPoint came to market and even when Microsoft dominated or gave it away for free, if you wanted to make slides you used 35mm Express or Presentation Express.

**Brock:** I wanted to return to just this idea of a Boston area, or Massachusetts, kind of personal computer software community or scene or whatever you might call it and just thinking about your participation in that and if you could offer just any thoughts about kind of the main ways that people communicated or if there was a sense of a community...

**Solomont:** Yeah, yeah there was...

**Brock:** ...and where it met and...

**Solomont:** Yeah, there was a community and it probably took three forms. In the earliest stage, you know, a bunch of us showed up at the Northeast Computer Show, it was like Dan Bricklin and Mitch Kapor and Richard Rabins from Alpha Software, and I'll remember some other names along the way. I don't think Randy Weiss [ph?] and Dave Tarrant were there in the Apple II scene, they kinda joined in the PC scene, but Mitch Russo who invented Timeslips. So it started at like a trade show, you know, there's this hobbyist thing and then it took shape as a community probably with a young man named Jonathan Rotenberg started The Boston Computer Society and I think it was the place that Jobs made it, might have come to like show the Mac off, maybe not the first Mac showing but Jobs certainly came to Boston, certainly came to Boston Computer Society and it was the place everybody went to see what was going on on the personal computer scene. By probably early '80s, let's see, it's 2015, so by '85 there was a new organization called the Massachusetts Software Council and there were other little attempts, there was something called Soft10 which was a group of a dozen software company entrepreneurs and we would get together once a month at a different person's office, we'd talk about our-- you know, the person who hosted it provides some food, we'd talk about what were our issues in building a software business, and remember back then like nobody knew what a software business, I mean lawyers, accountants, I mean this was like Greek. But then in '85 or leading up to '85 two guys, Richard Rabins who started the company called Alpha Software that's still in business today with Alpha Anywhere, moved from a database product to a development platform to develop across mobile, Alpha Anywhere, across everything, and in fact Dan Bricklin, the founder of the spreadsheet works for him, or the inventor, and John Cullinane who was the first software company on the New York Stock Exchange as an investor and

Joe Alsop who founded and built Progress Software first, like one of the really first, I don't know if he's a billion dollars, but a half a billion plus, database software company for the enterprise as his lead investor. Anyway, Mass Software Council was founded by Rabins and Eric Vode [ph?]. Eric was a Harvard Business School professor and at the time I think he ran corporate training programs for how to use desktop computers in major corporations, I think his customers like Citibank and that sort of thing, and the other founding trustees of this were probably-- and I don't remember exactly-- Dan Bricklin and John Cullinane and Mitch Kapor and I can remember going to someone's office with these people all sitting around a table, getting on the phone, dialing for dollars, calling to recruit members. There were, I think there were ten of us as founding trustees, I was a founding trustee, and that was really, I'd say for a good ten years that was like where it was at, that was the nexus of the Boston or New England software scene and the events were the-- and maybe I'm giving it, I'm short-changing it, it may have been more than ten, may have been fifteen, but once the, from '85 to 2000, let's call its "heyday" and it was the place to go. I mean, the speakers who came to speak at our-- I think there were like three member meetings a year and monthly things-- we had everybody. We had Gates, we had Ballmer, we had anybody who was anybody, I'm sure Eric Schmidt maybe even before he was at Google, he might have been at Novell at the time, people forget that, and it was a place where everybody schmoozed and we had all sorts of different meetings periodically to learn about marketing and software and that was the scene and Boston-- I mean I've not lived in the Valley but I traveled out there frequently enough when I was under contract to Apple. My oldest daughter who was two or three at the time who's in that photo I shared with you when she was on the front of Computer Retailing Magazine, when Apple Business Graphics launched, in a little dress with the word "Apple" on it in front of a computer with a tagline, "So simple to use," in front of an Apple II, but she even said to somebody when they said, "Where's dad's office?" She'd say "California." So, I was out there all the time but it wasn't as dense. There was Apple which was a little building in Cupertino, I think at the time, one building, and but you know out here it was like, god, I mean you'd drive along 128, it was Digital, Wang, it was everything, I mean Data General, it was-- and in Cambridge and around Boston we had Software Arts, I mean, you know, invented VisiCalc and Richard Rabins who had a very early database product and it was just a hotbed of innovation, MIT spinoffs and a lot going on, and John Cullinane, I mean he really is, if Bricklin is the father of the desktop or PC software industry, then John is the father of the packaged software business, but in the corporation. At the beginning of time IBM sold computers and they sold it with software that was installed and there were third party consultants like-- whomever they were, I don't remember the names at the time-- today they would be the Accentures of the world or the EDSs, but back then John pioneered writing software for mainframes and packaging it and selling it not on a floppy, you know, on a mag tape, but selling it as packaged software, like off the shelf, licensed software to major corporations and he built a very successful company, took it public on the New York Stock Exchange and in fact many of the technology gurus who sort of then fell out of Cullinane, John Landry and David Litwack, I think, and Mitch Kertzman, who started and took Powersoft public which became sort of a very big deal, changing the way enterprise software products were built and deployed. He pioneered client-server and again we're kinda back to client-server again and, you know, browser-server but the point is this was the happening scene and this is where everything was and I mean, my view of Silicon Valley was it was silicon and they built, they eventually were really good on hardware and certainly dominated the PC industry from the get-go because Ken Olsen thought it was a joke. <laughs> I mean, you know, he just didn't have any, he had nothing good or n-- he didn't think that the PC was anything, why were they embedding more on the PC in their own, and so our hardware

industry blew it and of course the rest is history. But a lot of software and in fact even internet, if I take it a step further, even the earliest development, the development of the internet which was basically a government funded project that Bolt, Beranek and Newman at the time, BBN Corporation, eventually renamed itself, Specialists in Sound but they had a contract from DARPA, the Department of whatever, and they developed the original technology that was deployed as part of ARPANET which was a network of computers tied together with IP communication and that became the foundation of the internet and BBN spun out a company called Genuity which became a public company and the largest internet access provider at some point in time. But so, the lot of stuff, a lot <laughs> of stuff was invented and built here or at least invented and then, you know, you set up shop where the money is and for a variety of reasons the largest source of money is on the West Coast at this point.

**Brock:** Well, that leads me directly to the other question I wanted to ask you about this New England, Boston, personal computing software scene was the venture capital to the extent that venture capital was flowing into these software firms and startups, was it local, and then I was wondering...

**Solomont:** Yeah.

**Brock:** ...is it invested wealth from the 120-- the more established 128 companies?

**Solomont:** Yeah, you know, this is like a whole other thread or a whole other topic, you know, venture investing and where the money goes and who invests it. Well, the first companies here were bootstrapped and we started with our own money and Software Arts started with their own money, Kapor started with his own money. His was probably the first example of a major personal computer software industry company with major venture backing, which came from Ben Rosen, which did not come-- I think it was Rosen's fund-- did not come local and in fact I'd have to scratch my head a bit, we got venture funding half local and half from California. Good venture money goes where good deals are. So, again, today arguably the top three or four firms are Avalon Ventures in San Diego, who invests heavily in Boston, New York and San Francisco, Union Ventures in New York, a third of their money is in California, a third in New York and a third in Europe. New York, Boston, I kind of view as the ones that-- Amtrak corridor -- there's kind of like now one space. There wasn't that much venture capital back then, I mean it was early and earlier venture capital went to computer manufacturers because that's where you needed big money. I don't think there was-- again, I'd have to check my notes-- but I don't think there was much money or a heavy dose of money in software companies until after 1-2-3 hit it big because most venture money is not really smart and it's not really ventured, it's not really risk capital and most venture guys, Rich Levandov aside, they follow the crowd, you know, when something's hot they pile on like it's a pig pile. Very few and far between, there are a few and far between, there are smart investors who get in early when it's really risky and it has the potential to be really big, so.

**Brock:** Did you see more angel investing in the early phase or...

**Solomont:** You know, angel investing has been in Boston since the beginning of time. In fact, where I lived for thirty or more years my next door neighbor jokingly said to me one day while I went from the guest room to the master bedroom he married his wife and took over his father-in-law's home, and his father-in-law was an angel investor in IBM, so this next door neighbor of mine I don't think worked a day in his life. I'm not sure if I got all the story straight, he may have been the GM investor and the other neighbor was an IBM investor but the point is there have always been angel investors, whether they've been called angel investors or not is a different story. Angel investing became institutionalized in California. It started-- not institution-- it started getting formed with a company called Band of Angels, formed as a dinner club and that was formed in the late '90s and I formed the first group in Boston, CommonAngels, which was the first instance of an institutional, I hired a team, we had a fund but we had thirty, well, five became twenty-five, became fifty, became seventy-five successful technology industry entrepreneurs who then would be the shoulders on top of which we'd invest the money because we had used their human capital and so, but it wasn't just entrepreneurs. It was Jim Cash from the Harvard Business School who left my board to go on the board of Microsoft when I sold my last company in '97, it was Ira Stepanian, chairman, CEO of Bank of Boston once he retired, it was Steve Levy [ph?], former chairman, CEO of BBN Corporation aka Genuity. So, we had a mix, mostly entrepreneurs and a random visit by Bill Hambrecht from Hambrecht on the West Coast, but so now angel investing and crowd funding is a huge phenomena, in fact I find it dangerous. I find it a license to steal from widows and orphans, but that's a different story. My point being that there was not a lot of venture or even angel money in the early '80s when the PC software industry was being formed. We took some venture money, Graphic Communication took some, Freelance took some venture money. Richard Rabin's bootstrap may have taken some money along the way but really bootstrapped it the whole way. Most of the companies were in the '80, '83-ish timeframe I think were bootstrapped, so <inaudible> and then some local companies I think-- and I've just, my memory may be a little bit-- I think Greylock Partners and Charles River Partners and I can't remember the names, so but at that point they were still run by the founding partners and some of them were looking at software and investing in software, and Jackie Morby was in Boston, TA Associates, and she was-- if my memory serves me-- a major investor in Digital Research. So, you know, money goes, Digital Re-- she went there and Ben Rosen that was in Texas came here for 1-2-3.

**Brock:** Two, well I guess three questions if we have time. One would just be about your initial reaction to PowerPoint once, which I guess appeared in 1987 and was almost immediately then Microsoft PowerPoint, just your sense of the product and your sense of what it meant for Microsoft at that time to be getting into the game, getting into the competition. Just that, and then I was interested in your reflections on over the course that you had, over the course of life, of business and professional software, how did the job of developing, of making the software, evolve over that period, if it did? I would be interested to hear your thoughts on both of those.

**Solomont:** Was there a third question?

**Brock:** Oh yes, I mean if there's time to just talk about, it seems that after you got out of the presentation software it seemed that then the bulk of your activities were in internet opportunities...

**Solomont:** Okay, so, yeah, yeah.

**Brock:** ...and I was just would be interested to hear...

**Solomont:** <laughs> Okay.

**Brock:** ...what was different, you know in that time.

**Solomont:** Let me do those three in that order. I was gonna say I'll do them in the reverse order but I'd rather finish up on sort of life after presentation software. So, in terms of PowerPoint, I had sort of-- and Microsoft's buying them and the product in general-- I had three sort of thoughts. My first thought was, "I can't-- and I won't use the language-- believe that Campbell did that." I mean, you know, hey more power to him, he just seized the opportunity. So, there was a little bit of me that was annoyed that he had left and offered a competing product, left Apple, and then the buy by Microsoft was no surprise. The Microsoft, to Ashton-Tate, Lotus, Software Publishing which was a smaller but still major competitor, they were all shopping, I mean it was obvious that everybody needed a suite, you need database, word processor, spreadsheet and graphics or presentations, and so you know, it was a natural evolution of the business. How our life changed writing software, well to be honest, I wrote the business plan for the first business which included a database, a report writer, a graphics module and there was some, oh statistics, and that was based on sort of it was like me, my ideas in a vacuum. But my ideas in a vacuum, one, I'm in business school so I got to like, "Okay what's the plan?" Because I wrote this as my homework in my New Ventures course and I might have even gotten away with submitting a portion of it, the market analysis for my thesis. At Sloan, at the time, it was an SM not an MBA so I have a Masters in Science and there was a thesis requirement. So, I like to think I went to Sloan, that it was a more rigorous program, but anybody who knows MIT knows that Course 15 was "Mickey Mouse Club" from the get-go. I mean, I say I graduated MIT but I don't wear a bear ring because I'm an MIT grad but I'm, you know, Sloan is a different school which actually in some ways is more powerful but in other ways says I'm not a geek, necessarily. But what changed was I developed that based on my experience and since I had done a lot of work with databases and had done a lot of work with statistics and this program SPSS, I saw the value of, and then like stumbled upon this desktop computer, hook it up to a large mainframe or timesharing and then with its own disk drive, because when I first got it, the Apple II I have in the other room, it had a tape drive, not a disk drive. So, it's like you couldn't imagine using it as a standalone, but when it became a viable standalone machine I thought that this was a perfect suite of applications. So, getting to the punch line, I architected, or my vision was in a vacuum. Once we stumbled on graphics and we launched it then everything, I'd like to think, was driven by the customer. It was what Apple and the end users wanted and that led me into presentations, you know, with 3M and Polaroid kinda taking me by the nose or taking me by the hand and so I'd like to think that what evolved was first an entrepreneur's vision, then molded by the market, and molded by the customers and I learned it's not always good to be first, so and I also learned that while you gotta know everything and anything there is about the competition, I think we

were a little bit too obsessed with competition. I think if we just focused on building our business and didn't think about them as much, we may have had a different outcome.

**Brock:** Hm.

**Solomont:** But it is what it is, and then in terms of your second question, which was...

**Brock:** Well, it was, I was just wondering about the very practice of your programmers for developing software.

**Solomont:** Yeah.

**Brock:** Did that really change from an individual to a group?

**Solomont:** Well, you know, the reality is-- and I've never run a large software team of like a hundred people-- but I think that most great software inventions start from a team of one to three people, and <laughs> 1-2-3 was written by one person. It may have eventually been a team of, god knows, hundreds, and Notes was architected by Ray Ozzie, whether it was built by one or however many people, I don't know. Our products, business graphics, was built by Steve Covitz and Overhead Express was built by Tom Bloomberg and his partner-- and I'm embarrassed, I can't remember his name-- and 35mm Express was built by Jeremy Sagan. Now we had, you know, ten or twenty, however many other people working on the team and it's not just engineers, it's writers and, you know, a lot of writers because back then manuals were a big thing. It wasn't, you know, there was a not a heavy use of help screens and internet, just dial in inter-- a lot of bulletin boards. So, it didn't change for me back then because I was always in the zero to ten million range. So, it was always a, it was a five, ten, twenty-five person company so I didn't experience big teams and the type of stuff we were building didn't lend itself to big teams, so and then in terms of life after BPS, I poked around a little bit to just try to see where I thought there were opportunities and I was a founding trustee at a Mass. Software Council, at the time I might have been their treasurer, I don't remember. I was eventually treasurer, president, chairman, but one of my professors, or one of the board members who was a artificial intelligence professor at MIT in the iLab, Randy Davis, you know, I am really big on networking, going out to seeing people, network and face time-- the old fashioned type, not the capital F capital T-- and I poked around a lot. I went out to see Randy at MIT and just, you know, "What's going on?" and he showed me this thing called Mosaic on his computer. I think he had a Sun or an Apollo, he had some high-end work station, he had this thing Mosaic and it was like this thing called the World Wide Web, this was '93 or 4-ish and I said, "Wow, this is pretty cool," and there was a course being run maybe at BBN or somewhere and I just went and took a course and I started writing some HTML and I said, "Wow," and I partnered up, there were a couple young guys, Brian Hawthorne [ph?] and Kee Hinckley. Kee was an early, like engineer one or two, for a company called Wildfire, it was a personal digital assistant, a precursor to Google Voice. If I had the service you'd dial my number and a lovely

sounding young lady answered, "Hi, this is David Solomont's office," and anyway, and Kee and Brian who was a Sun engineer or product manager started this little old consulting company called Utopia and they were basically building websites and helping companies develop their internet strategy, and I joined them as the third cofounder and we built that up to a hundred and twenty-five person company, offices in five cities in the U.S. and one in Hong Kong, and we sold that successfully in '97 and I didn't want to sell. There was a, investor wanted to take us to the next level, Internet Capital Group out of Pennsylvania. Everybody thinks that Facebook was a big deal when they went public at a twenty-five billion dollar valuation, I think, Internet Capital was sixty. Anyway, so instead of Internet investing in me, I used some of the proceeds to invest in them and I was just, you know, I don't give any of my success as an investor and even building a company all because I was smart, I just was at the right person, <laughs> I was in the right place at the right time, smart enough to take advantage, I was a first round investor in Internet Capital. I was telling somebody the stock went from fifty cents to two-fifty, they said, "Wow you made five times your money." I said, "No, two hundred and fifty." So, all of that changed in March of 2000 when the-- but on the heels of that investment I was investing on my own account, it got lonely, and I started CommonAngels and with a group of friends -- let's leverage one another's domain expertise -- the original original cofounder was Paul Egerman who was a founder of IDX Systems, took it public. In fact, through CommonAngels he met Ben Chigier, they founded and sold eScription a few years ago to Nuance for three hundred million in cash. I begged him to let me invest but they didn't take any outside money, and then I made a series of maybe thirty or more investments over a three or four year period and like anything else, you know, some work, some don't. What I did learn though is that, three things. One, and this is Ed Roberts from the Sloan School, I kinda wrote down on a piece of paper some of the things he taught me about what are the ingredients for success, and he has studied thousands of MIT companies over the years. He's been at MIT for fifty years and the first three out of five things are teams. So, number one, it's all about the people. Number two, because your company might have an okay idea but the people can make it a great idea, and then the third thing I learned is that don't ever think you're so smart, <laughs> that some of my friends who've made their best investments-- I mean, I swear Rich Levandov's investment in Zynga which was two and a half million, turned into two hundred and fifty. You know I think it was a little bit of dumb luck that Mark Pincus, the founder, just harassed Brad Feld and Union Square, Fred Wilson, incessantly so that they finally said, "Okay, fine we'll invest," and a lot of life is lucky breaks-- and then life after was, I've been early. So, I was early in presentations, I was early in the internet, that internet company was venture backed in a sense, well it was individual investors, John Cullinane and others and eventually it was a strategic investor, a West Coast company invested, and but what I was trying to say was, so I was-- and Charlie Federman who was on the board and Jim Cash who was on the board, said "You know, <laughs> Dave, you always have the best ideas but you may be one step ahead," and so I was fortunate enough though along the way. I was early in online gaming and made an investment in WorldWinner which went from nothing to it's now the largest online social gaming, quarter billion dollars and-- I almost bought it, but that's a different story-- and so I was in presentations, I was in internet, I was in gaming. We actually had another company that I took over and put in a new management team that created WorldWinner which was hardcore gaming, operated in a hundred and eighty-nine countries, sixteen languages. We operated everywhere except the U.S. and Canada because it was not legal, it wasn't illegal, it's complicated. I put in a new team that took that to a three hundred million dollar sale eventually. So, but I have another startup that ran out of money that was location based local content and we had a product, it was Candide Media and we had something called Talking Streets

where you'd walk around the city and you'd hear audio tours when you were near those locations and get coupons and we were early on with crowd source video around the time of YouTube, we had Ten Second Films, which was another site. So, I've done a lot of stuff, I've always been had a knack for finding what will customers want. I've been less fortunate or I've been less, well I'm less of a manager or an operator and so these days I don't try to run anything. I left the CommonAngels group about ten years ago. Sometimes things work out, we had a little falling out with partners and the last ten years I've been working on one or two deals at a time and doing things where nobody else is interested because ideas are either so crazy that they're crazy, or so crazy that they're a wild success. So, the last one I'll leave you with is my current obsession is a company called eFleets Corporation, manufacturers of the Firefly which is an all-electric, lightweight commercial utility vehicle that is, will be the first profitable EV company in the world and nobody's ever heard about it. The founder or the chief technology officer, who came on as a cofounder, named it Firefly because he grew up in Arkansas and there were fireflies all over and he expects that eventually they'll be all over, and so New York City has a thousand of these little three-wheel gas-powered police cars. Well, the Firefly will save New York City thirteen thousand dollars per vehicle per year for a vehicle that costs maybe two or three thousand dollars more. So, hopefully your next chapter in history will be about electric vehicles and I'll have as much to say.

**Brock:** Oh, I certainly hope that that is the case, believe me.

END OF INTERVIEW