



Oral History of Joanna Hoffman, part 2

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Hancock: Today is March 9th, 2018. We're really delighted to welcome you, Joanna Hoffman, back to the Computer History Museum. I'm Marguerite Gong Hancock, together with Hansen Hsu and Marc Weber of the museum and we're delighted to have you here for Part 2 of your oral history. Today we'll be focusing on your time with the Mac team at Apple, moving onto NeXT; Hansen will be leading that portion. Marc will be leading the portion on General Magic. And then I'll be closing up with a review of your career and work afterwards. Of course, we'll be really interactive, but we're really delighted to have you here.

Hoffman: Well, thank you very much. It's such a privilege. I can't even imagine doing this, but I'm very excited to do it.

Hancock: Thank you.

Hsu: So, to start off, could you maybe talk a little bit about Steve Job's charisma and the reality distortion field?

Hoffman: Well, you know, because Steve had a very strong vision of what he intended to do—and I don't want to label him as a mere visionary, because, frankly speaking, visionaries are one in a million. People who are able to bring visions into reality, and make them successful, and make them stick are one in a billion. He was definitely one in a billion. I would say that his primary charisma was his own unwavering faith in what should be done, what was the right thing to do; his ability to make decisions; never really waffling; and being so certain of what is the right course to take. And there was another dimension to it, which was there was no self-interest. Steve was never doing it for himself, was not doing it for the money, was not doing it for the fame. You know, he was doing it because he had the strong sense that this is the right thing to do, and that it's going to change the world. It's been said so many times now. It's such a cliché, but he really felt that technology, and his participation in bringing that technology to the world, could really make a huge difference. And, so, I think all of those things were very compelling. But you know, you can have that in many people. I think he just had an innate born magnetism and that is something that you can't really explain, you can't find a word for it. Someday maybe we'll decipher it, but we don't know what is it that when somebody walks into the room they have that magnetism and other people walk into the room and they don't. He definitely did have that.

One other thing I should mention about him I think that many people misunderstand, and misunderstood at the time as well, is that what they took to be slights and insults on his part were merely the fact that he never rested on his own laurels. So, people's past accomplishments were often really of very little interest to him. What he wanted to know is, "what can you do for the future?" There were a lot of people who thought, "Well, he's not acknowledging my work in the past." But Steve never looked back and said, "Well, I was instrumental in the Apple II," or after he did the Macintosh, that "I've done the Macintosh." He never talked about his past accomplishments. He only talked about what he intended to do for the future. The fact that he never rested on his laurels was misunderstood by a lot of people to mean that he doesn't appreciate what they have done or their contributions or whatever. Every time you were working on a new project with Steve you were starting with a clean slate. It disturbed some people. It's like, "Well, I've done this and I've done that." And some people even thought, "Well, I did this for you!" which he never thought of it that way. We're all doing it for a cause and then that cause is in the past. Now we look towards the

future. So, I would say those were some of the very compelling characteristics of Steve's personality that could also have another side to them, which is that people who couldn't deal with it had a hard time.

Hsu: Steve had very clear vision, but sometimes that vision might have been clouded by missing certain things. So, the famous reality distortion field, maybe sometimes he refused to see things that were there? Can you talk a little but about that?

Hoffman: Well, I think one of his main failings was to acknowledge time. <laughs> To acknowledge the permanence of time, that it's not shrinkable. I'm always late for things, and if people tell me that I think time is elastic. Well, Steve always felt that time was compressible. Therefore, I think most of the unreality of his management style, the reality distortion, so to speak, had to do with timing. He always thought that it can be in less time and in a much more efficient manner than was realistic. That was number one. Number two, sometimes—and this was definitely the case during my experience with Steve at Apple and NeXT, which he shared in the future when he came back to us at Apple--was the fact that he had this unwavering faith in technology and in new technologies. His commitment to the laserdisc, for example, at NeXT, where it just—the technology never really—

Hsu: Oh, the optical drive. Yeah.

Hoffman: The optical drive. It just never came to be what it could have been, but that was not the right technology. There were those kinds of blind spots, but I think with experience and with wisdom he actually became much more realistic and much more able to cohere things together that made sense and were appropriate for the time.

Hsu: Could you talk a little bit about some of those decisions in the design of the Mac? Say, like, omitting cursor keys, or keeping the amount of RAM down, things that would affect the users that he was very insistent on?

Hoffman: I should back up a little bit and give some context, because at the time when we started the Macintosh project there was a project going on at Apple called Lisa project. And Lisa was supposed to be a business computer where it met the needs of knowledge workers and people in the offices. It was more expandable. It had a large keyboard with cursor keys and everything and when we started the Macintosh project we had to justify to Apple why it looked so much like the Lisa in terms of its user experience and user interface, even though it wasn't compatible and it wasn't identical. It was much more pared down in some ways. It was also an improvement in other ways, because we had learned from the Lisa experience as well.

The difference between the two was in that Macintosh was supposed to be an appliance for everyday users, where the Lisa was a business machine. Of course, a computer as an appliance almost like a consumer device was visionary, but not quite right for the market at the time, right? It wasn't enough yet to make it a consumer device. It wasn't cheap enough; the technology wasn't advanced enough. There was a slight mismatch, right? That mismatch also came from the fact that we had to tell Apple that we were not going to cannibalize the Lisa, which by the way is a fallacy that is so common to companies in that they try to position their product so they don't cannibalize each other and the competition ends up coming in and cannibalizing your product for you, right? You should never do that really. Don't second guess the market. Do two, three, whatever number of products the best that they can be.

But, alas, we were hampered that way. We had that constraint in that we had to make the Macintosh very distinct from the Lisa and the distinctions were that it was smaller, more limited in capability, a closed machine, not expandable. All of the limitations that you got on the Macintosh were really driven by that very initial executive committee where we got permission to go ahead and make the Macintosh where we had to make slides differentiating the two and that set the course for us into the future. In an odd way, this was not something that I would lay at the doorstep of Steve. I would lay it at the doorstep of the corporate reality of Apple at the time.

Weber: On cannibalization, so, obviously, the Mac purposely was not compatible with the Apple II in any way, whereas the IIGS, which came a bit later, was GUI WYSIWYG [what you see is what you get] version of the two. At the time, a Mac—I mean, that was another much more important product for Apple at the time that could potentially be cannibalized. Was there any thinking about that?

Hoffman: I think when that happened, by that time I think there was no—I may be mistaken—

Weber: I don't mean the IIGS time. I'm saying at the time of the Mac was there any talk of trying to make it run Apple II stuff at all?

Hoffman: No. Oh, no, no. It was supposed to be a total departure from the past and only looking into the future. So, no, no, no. Never. There was never a talk of any kind of compatibility backwards.

Hsu: So, could you talk about the human interface guidelines that you wrote? And just--

<laughter>

Hoffman: That was done out of just pure necessity, because unlike the Lisa actually, which had its own whole set of products that were going to ship productivity software—that was going to ship with it, with the Lisa, we were more in the Apple II tradition, in a sense, that we were going to rely on third party developers. Right? And from the very beginning we started approaching third party developers, the first being Microsoft. Then as we got more steam, it turned out we were much more popular than we had any right to be with attracting third party developers. Here I'll put in a plug for my husband, Alain Rossmann, who was out there being ultra-techy and simply seducing people with the technology. And they forgot their big business intuitions while getting all caught up in how wonderful the technology was and actually made commitments to work on the Macintosh. And, all of a sudden, we were starting to see that people were—because we didn't have yet everything—all the tools to give them, yet, we were seeing that people's mentality was still in the days of the Apple II or the IBM PC, which was “We are going to make things”—a little later on the IBM PC—but, at any rate, at that time the motto was “We're going to do what's right for our software and everything else be damned.” But the whole premise of the Macintosh was that there was going to be consistency, that going from application to application you didn't have to relearn things, you know.

So, one day I just sat down and I thought we need to give these people some guidelines, and also tell them what's already built into the machine, into the ROM [read-only memory], because we were trying to encourage them to do this. The overall memory was constrained, so if you could use what's already in ROM, you did not have to use extra

memory. So, we had to document what was in ROM, what you can use and how will it look, and how you should desire it to look if you want to develop for the Macintosh. So, a Walkman, a pair of earphones, and Mozart! And I sat there day and night and cranked it out. And I'm not a technical writer, so, it had flaws, but at least we had something that we could hand to people. And I was advocating at the time that we really need to get a writer on board to be able to flesh it all out and it's really time to do that. And we were very fortunate in getting Caroline Rose, who wrote the famous telephone book of all the technical documentation for the Macintosh. And she was fantastic. So, she really deserves the credit. My first initial draft, I would call it maybe, was purely for the developers that we had at hand at the time.

Hancock: Can you give a little bit more detail about how long were you listening to Mozart with your headphones—what was the length of time and about how many developers—

<overlapping conversation>

Hoffman: I think it took me less than a week. But people were walking by and saying, “What are you doing?” I was sitting there—I'm not that fast a typist, but I became one writing that! That user interface document. So, I stayed there long hours and cranked it out and we were able to hand it out.

Hsu: Did the guideline become too strict or dogmatic for later on?

Hoffman: Ooof! Of course. You know, like any dogma, right? Like any doctrine I should say, like any doctrine. Once it becomes dogma it becomes counterproductive and the doctrine of our user interface became a dogma. For much longer than it should have been, because there is no way we could have foreseen some of the applications that were coming from all these creative minds of outside of Apple and inside Apple, too. There were some very creative people. I would say it wasn't our generation any more. It was the next generations that stuck to it by—because that's what it should be as opposed to, “Well, let's see how it should be modified for the new generation of software that is coming down the line for some really incredibly innovative things that are being done and maybe they're better, and let's give some flexibility.” But because our user interface, the guidelines that I wrote, also evolved as third parties were doing new things. We learned from them and we put new things into the software and also into the guidelines, “You can do it this way or that way.” What you don't want is cut-copy-paste to appear in twenty different places and spread out, because once you have a graphical user interface people really work by spatial orientation and you don't want to switch things around willy-nilly. Scroll bars should work the same way in every application. Some things that obviously should become second nature to the user. But there are other things that you are incorporating and there—maybe voice or maybe there are other alternative ways of looking at things other than graphically and whatever, new search ways, mechanisms—and you should be able to modify things as you go along.

But this is always a problem when something is seen as revolutionary at the time is that people who take the mantle tend to ossify it. So, I think, yes, that did become the case. I don't think Apple was an exception in that area. I think many people did the same thing. But now it's exactly the opposite. Every time I go to use a piece of software I have no idea what it's going to look like, because some eighteen-year-old at Google had decided that this is how he's going to change it or she's going to change it. And with no forewarning, no reason, no nothing! And all of a sudden,

and everyone complains about that, but you know what? Because it's free, people are putting up with the shit. The Macintosh wasn't free and neither were its successors. So, you had to make it so that the users don't complain.

Hsu: In related sort of dogma, the Mac is often compared to a religion or a cult. How much of—you know, from the user base—how much of that was a deliberate strategy from marketing to actually try to foment that?

Hoffman: I think we were actually surprised ourselves by it. Now one thing I should say is that we may have been surprised; I don't know if Steve was surprised, because the Apple II had become a cult, so he had lived through that already. And he knew that if you give people something that had a personality, even if that—you know, an inanimate object with a personality could garner a cult following. And that's what we did with the Macintosh as well, give that little twinkle, some things were unexpected. There were buried little messages here and there. And there was just a personality to the machine. So, I think in that sense I don't know that it was intentional, but it was something we enjoyed doing, right? But it may have been intentional on the part of Steve. But a lot of the things that went into the Macintosh were not dictated by Steve, but he would come and see that people had done it and say, "Well, that's great." I'd say it was at that level. As far as the marketing itself and making it, I don't think that there was any profound premeditation. I don't think you can actually create that out of thin air. You have to have a basis for the attraction, right? People have to be really attracted and get emotionally engaged with the technology in order for you to be able to create that. You can't just create that out of thin air. It's not sugar water.

<laughter>

Hsu: You were the first marketing person for the Macintosh. Could you talk about how you built out the group and working with people like Mike Murray and Mike Boich?

Hoffman: Yes, so, it became clear that we needed more people, <laughs> obviously. I'm very bad with dates, but I think it was in '82 that we started hiring additional marketing people and the first head of marketing that we had was Berry Cash. I don't know how well known that is, but Berry was living in Texas as I believe. So, he was commuting from Texas and Steve really liked him and got along with him and, so, he wanted Berry to be the head of the overall marketing umbrella. But the thing is that he couldn't do it part time and, so, Berry, at some point, said, "You got to hire more people." Berry was actively involved in hiring Mike Murray, and then Mike brought in Mike Boich and we just loved Mike. Both Mikes, but Mike Boich was, being very technical and ultra-brilliant, frankly, was immediately embraced by the engineering team. And you couldn't get anybody if they were not embraced by the engineering team. Engineering had to love them. And, so, Mike Murray's incredible sense of humor and sort of the creative twinkle, really appealed to everybody. Neither one of them had particularly long resumes of having done marketing, but they were product people both of them, especially Mike Boich. So, it was really being able to work with him. I had become obsessed at that point with education and international, and I wanted to really focus on those things. It was really nice to have Mike Boich, who was also working with third parties and he was technical enough to be able to give them all the answers and talk to our engineering and give feedback and so on. That was great. Mike Murray was extremely creative, so he could work with all the agencies and our internal Apple marcom team. It was great. It was a really fun group.

Q: So, speaking of marcom, working with Chiat/Day and also with Regis McKenna, were you involved in that at all?

Hoffman: I was initially, because we did a lot of brainstorming at first. The other reason why I was involved because I needed to make sure that we have consistency between what was happening here and what would be happening abroad. So, yes, I was involved and I got all the copy and got to comment on everything that was being produced. I was just not the primary interface for them. It wasn't my thing, to be honest with you. But it was very intriguing and it was fun, but it wasn't—I was more focused in working with other products. And I should also mention that the day we got Barbara Koalkin I think was the day when Macintosh went from being a research project to being a product. Because those introductions, the timelines, just the cohesion of it all coming together would not have happened without her. She was just amazing. It was the first time I had ever met anybody like that. No ego whatsoever and all she cared about is making it real. And introducing it and doing a really great job at it and uncompromising. I was just in awe of her abilities and to this day! She never will tout her horn. She's just not that kind of person. And when you tell her all of her accomplishments, she goes, "Oh, really? Yeah." It's just amazing. So, she was incredible, *is* incredible still. <laughs>

Hsu: You mentioned wanting to work more on education and international. Could you talk about deciding to go into those areas?

Hoffman: So, when we first wrote—and by “we” I mean Steve and I. When we wrote the original business plan for the Macintosh division, as I said at that executive committee where they were supposed to give us more funding and declare us a division, that business plan had a marketing break down and I had come from academia relatively recently, right? This was my first real job. My brain was in academia, I just wanted to make sure this could be used in academia, that students could use it, professors could use it, you know? So, I put in there, this educational market—not the educational market that Apple was already good at, because K through 12, Apple owned that for a long time with the Apple II. But the higher education market. And, so, that was very important to me. I shoved it in there as one of the markets that we would approach.

The other thing was international, because most of the computers that I had used and I had seen had forced everybody else to conform to not only the language, but all the nuances that go with the language. You don't have your currency in the computer you use. And, by the way, I have to, again, give credit where credit is due. The people who had started thinking about this profoundly and making it ground up international were the people on the Xerox Star. Becker was the name of the gentleman who was fundamental in making all of this a reality. I was very inspired by what he had done on the Star. And, of course, theirs was so comprehensive and the Star was a very expensive product when it shipped and so on. We had to figure out on the Macintosh how to do at least a fraction of that in a very clever and compact way that would fit into this tiny machine.

And I have to say that it was Bruce Horn who came up with a solution that ended up being a solution that was great for—much more general-purpose solution—that was also great for all apps writers in other domains. But it was very specifically useful for us in international, because of the resource manager and the resource files where you could separate data from code. Then you were working on the data separately. You never needed to be a programmer to go

and actually change the data portion of an application, data portion being the text, the currency, and also apply to any data actually, frankly.

Weber: And could you see that data in context or was it in a separate—

Hoffman: Separate—

Weber: Was it a text file?

Hoffman: Yeah, yeah, no, it was—

<overlapping conversation>

Weber: So, you wouldn't see, say, the dialog box, where it would fit in?

Hoffman: Well, it was called a resource manager and it had a user interface of its own. So, you could see that, for example, if you had it in German, it would over-flood the dialog box, so then you could modify the dialog box to fit it appropriately. It was a pretty cool way of doing things.

Hsu: Could you talk a bit about the Apple University Consortium and also bringing Dan'l Lewin onto the team?

Hoffman: Ah, yes. Who is now your fearless leader! That's right!

<laughter>

Hoffman: In working on the higher education I realized that sales is an area where --when I first came to be the marketing person on the Macintosh I knew zero about marketing. Well, I knew less than zero about sales. So, selling to the educational market and understanding how you go about that whole process was completely opaque to me. And so I knew that we could make a product that was great for that market, but I didn't know how you would get the feedback from them early on, so that you could make it so that it's particularly suited to their needs. So, I engaged the consultant, who had sold into higher education, and she came up with this proposal that what the higher education is used to coming together in consortia and working on—it's almost like standards committees, but it's universities deciding that they were going to cooperate towards a goal. We thought, "Oh, that's great. We should put together a Macintosh consortium with some pioneering universities and colleges who could also give us feedback during the development process." And I was very concerned about the fact that we had been somewhat insular in the Macintosh division and hadn't really engaged sales yet.

We weren't ready to engage sales, because the product was absolutely not ready yet. But in this particular case it was very important to engage sales. And I had a very good relationship with the Lisa division and I had talked to them quite a bit and I had met Dan'l, who was their sales liaison. And I thought, "My God, he's so great. I wonder if we could convince him to come to do this for us?" and he would be pretty independent. So, I wooed him <laughs> and he thought it would be a really great project and, so, he took the risk and came. He did all the charm offensive

on the universities in trying to get them to participate and Mike Boich did all the technical charm offensive. Dan'l and Mike were able to put together a group of universities that we worked with and were able to have actually direct sales into those universities once the Macintosh ships. They were our first solid customers that bought in quantity. So, that was very important and the international market also, specifically France, but also some of the others, but because Jean-Louis Gassée in France could do anything. And, so, with his evangelizing into the French market we were able to sell quite a few Macintoshes internationally and into the university market. Straight off the bat. So, the international was delayed by six months because of the power supply, but once we started shipping it was quite successful.

Hsu: Could you talk about Steve Capps' Alice game. Andy Hertzfeld writes that you were the best player of the game.

<laughter>

Hoffman: Well, to show the graphic capabilities of the Macintosh, Capps wrote—do you have Alice in the museum? I hope you do.

Weber: Yes.

Hoffman: Yes. First of all, it's gorgeous, right? But, secondly, the fact that the computer was powerful enough, or through the software you could make it powerful enough, to actually move those pieces quite rapidly, was quite an achievement and it showcased the Macintosh beautifully. And I got really intrigued in, how fast can it go? So, I was playing Alice—it's a chess game.— I was playing Alice for hours and I have to say, it was pretty fast. So, I loved the game and it was such a wonderful tension reliever, because we were there sometimes around the clock. And, so, at some point at night, you know, I would go and start playing Alice and it was just-- whooo! Yes, it was great and it just Capps' genius and his creativity. I mean, he's amazing.

Hsu: He had to make the game harder for you, specifically.

Hoffman: Right. Right! <laughs> Because I was whizzing along!

<laughter>

Hsu: Earlier you mentioned Barbara Koalkin. Could you talk about how many women were working on the Macintosh team?

Hoffman: Well, let's see. So, you know, I don't know the exact chronology, but pretty quickly once we started growing the team we brought in, of course, Barbara Koalkin; we brought in Debi Coleman; we brought in Susan Barnes. And they started their own teams and we were also working very closely with the people in Apple marcom and in Apple marcom were these brilliant women. You know, just too many to name! They were fantastic.

Susan Kare was the first one, I think, on the engineering team, if I'm not mistaken. So, Susan was there day and night working hand in hand on the user interface and on the graphics and everything with the engineering team. So, I would say Susan had a huge influence on how the Macintosh turned out visually. And you know, one of the things that is interesting is that when Steve decided that we're going to build our own factory, we went through several accomplished potential male leaders of that project that we brought in from distinguished American manufacturing establishments and they just couldn't cut it. They just couldn't do it. And one of the things you have to also understand is that somebody who is fantastic in a large corporation, I mean is able to manage a set-up, or to hone a set-up, or to improve on a set-up, is a very different person from somebody who has to build it themselves, who has to build a factory from scratch. So, we had a difficult time. Matt Carter was a man we brought in who was one of us, so to speak. He was one of the people that was involved. And then when time came to actually make it a production facility, it was Debi Coleman who moved from being essentially the CFO of the Macintosh division to running the factory. And Debi kept saying, "You know, I'm from a large Catholic family. I know how to manage projects like this" <laughs> So, but an English major. <laughter> And she did a great job.

Q: Wow.

Hoffman: And when Debi moved into manufacturing, Susan Barnes became our CFO. We were working with sales and with distribution, and in distribution we were working with Donna Dubinsky, who was constantly challenging us on our forecasts and our processes as well. So, outside of the Macintosh division, there was a whole host of women who supported the effort.

Hancock: Given the climate today in Silicon Valley and the discussion about women, opportunities, as well as roles, how would you describe the climate for you and other women at the time working on the team?

Hoffman: Well, I suppose I feel very fortunate, because I'm not currently in any organization, in Silicon Valley. So, I cannot speak to what's happening today. I am somewhat surprised and shocked by some of the reports. What I can tell you from my own experience—and I think we had a panel actually that Andy Cunningham put together—speaking of people on the outside who supported us—Andy Cunningham and Jane Andersen and the team at Regis McKenna, who were involved in bringing the Macintosh, having all the media relations and bringing the Macintosh into the market. Just a few months ago, Andy and I got together the women that worked on the Macintosh to recount our experiences and we all agreed that we worked as a team with all of our other team members, with all the men, we never—I don't think ever stopped to think, "Well, you know, I'm a woman, therefore—" or "They said this because I'm a woman." We were so much almost an extended family that I hesitate to say this, because you can't make absolute statements. There's probably always an exception, but I didn't know of one. Let's put it that way. I just never felt—and none of these other people also ever felt like they were singled out or treated any differently because they were women. There was a common cause. We were all involved in that common cause. And, you know, as I said, we were very fortunate in that respect. In retrospect, I give Steve Jobs a lot of credit for that, because he established the atmosphere of, as long as you're performing and doing what you were supposed to do, he didn't care what you were, who you were, what your gender was, what your sexual orientation was, how you chose to dress. None of it made any difference to him. So, that set the tone, I suppose. I didn't know it was exceptional, but

I suppose it was. It was my first job, so I don't know how it was in other parts of Silicon Valley at the time. All I can tell you is my own experience and the experience of my colleagues.

Hancock: Thank you.

Hsu: Could you talk a bit about working with the engineering team and people like Andy Hertzfeld and Bill Atkinson, Bruce Horn? What was that experience like?

Hoffman: Well, it was exhilarating. It was just exhilarating. I mean, I have to say that I think most of the people that we attracted to the Macintosh team, most of the developers that we attracted on the outside who chose to take a risk with their own efforts and money, did it because of their admiration for Andy Hertzfeld. Bill Atkinson, Bruce Horn—all of these people that were just so brilliant and devoted. They were willing to sacrifice their lives to make this a reality and the creativity was just astounding. To some extent, they were so creative and so productive that we had a very hard time shipping the product, because until the very last minute, they were putting in new things, more exciting features, more surprises and fun things. So, this exuberance, this overflowing of imagination, creativity, devotion, was so compelling that we managed to create an industry out of thin air. So, it was very exciting working with them. And anytime we would recruit, we would have to have them go and meet the engineering team, because the engineering team was the magnet. They were the galvanizing force. So, it was exciting. It was great. I mean, what can I say? This was just sort of a wonderful, wonderful group of people.

Hsu: Could you talk about meeting your husband and what was his role?

Hoffman: So, I met Alain because Barbara and I decided we needed to recruit more marketing people and we decided that it was time perhaps to look at some MBAs. And we got the book of graduating MBAs from Stanford and started going through various résumés. And both Barbara and I agreed on a few profiles. We wanted people with a very strong technical background. So there were a number of people who had come from the elite of the elite of international engineering schools and, so, we were looking at some of them. So, Alain was come from Polytechnique and we saw his résumé. There were several others who had come from Polytechnique. I was interested very much in getting somebody who could work on international. Bud Colligan was also in that same class and we also wanted somebody who could work on product and education and so on. So, Bud was very attractive from that point of view. So, we brought in those two people and about four or five others. These four or five others thought we were too amateurish for their liking. They were wanting to go and do serious things.

<laughter>

Hoffman: So, some of them went into the telecoms business, others went to HP, but they turned us down. Eventually, we decided to make an offer to, I think, four people, if I'm not mistaken, after they had talked to our engineering team as well. And two of the four people turned us down and never forgave themselves, by the way.

<laughter>

Hoffman: And Alain—when he met the engineering team, it was love at first sight. They loved him, he had built kits and programmed and so on and knew the Apple II inside out. And, so, the engineers loved him. They really liked Bud, because of his incredible enthusiasm. Bud was just enchanted by everything and he just really wanted to work with us. So, we hired the two of them. There were a couple others that were hired by others. Debi Coleman, I think, hired a couple people, too. But, anyway, Alain started working on international at first. But then what happened is because he was so technical and was able to really concisely not only explain to third parties what they needed to work on, but actually co-design products with them, the engineering team and the evangelism team, Guy Kawasaki, said, “You know, can we take him into our group please? Because we need his talent.” So, he went. After working on international for less than six months, I think, he was recruited by Guy Kawasaki. Because Mike Boich at that time started working on a terminal emulator for the Macintosh with Martin Haeberli, because it was deemed that it was important for the business market that we have a terminal emulator on a Macintosh. So, Mike Boich and Martin were working on something else and Guy Kawasaki recruited Alain to work on evangelism.

And more than evangelism, he was really co-designing products with the third parties. And I think it was in Macworld when Alain left the team to join Radius—there was a big ad that said, “Thank you, Alain, seriously.” And all the developers signed it. That’s how we met. We were working on the Macintosh and then what happened is that when Radius started with Burrell Smith—and we haven’t talked about Burrell, who was in his own right just so creative and so brilliant in working—creating the hardware from his head! You know, much later when Mike Boich and Burrell Smith left to start Radius, they recruited Alain to go join Radius. And, so, we didn’t actually get involved—we were good friends. But we didn’t actually get involved more intimately until he had left Apple, I had left Apple, and then sort of fate brought us together.

<laughter>

Hoffman: So, it’s kind of a funny development.

Hsu: Yeah, we’ve talked a lot about evangelism. Could you maybe go more into that and Mike Boich and Guy Kawasaki sort of starting that whole effort, and how important was that working with third-party developers?

Hoffman: It was extremely important, because if you think about the applications that made Macintosh take off, they were all done by third parties, right? And especially in the market of creative professionals, PageMaker was done by a third party; Adobe software for the Macintosh in the LaserWriter was done by third parties; and the suite of software done by Microsoft. And while Microsoft was working on theirs, Randy Wigginton did some of our software, but as a third-party developer. Not inside the team. He was working on it independently. So, FileMaker—I mean, the list goes on and on and almost everything was done outside. And it was from the very start that these people were approached and we’re working with our evangelists. The evangelists got them in and they worked with them on making them progress on their products. To be able to ship so quickly after we had shipped, it was very impressive. Because we had work with them, hand in glove—“We”: the evangelism team and tech support.

Hsu: Who came up with the term “evangelism”?

Hoffman: That may have been Guy Kawasaki. You should ask him, because I think it may have been Guy. Guy is really good at coining these phrases. I think it may have been Guy that coined the phrase. But everybody had a weird title, right? And it was “Software Wizard,” and everyone had very quirky titles and, so, I think Guy may have decided that’s what he wanted to name himself.

Weber: What was your title?

Hoffman: I didn’t have a title for the longest time. But then I had to have a serious title, because I was working with international and they weren’t quite as hip.

<laughter>

Hoffman: So, I had something like product marketing or amateur product marketing or something like that. Mine was not so quirky. I didn’t want a title for the longest time. But then I realized, “Wait a second, I know nothing about the business world. I have to establish credibility. I’d better do what is most efficacious!”

<laughter>

Hsu: What was your role for the rollout of the launch of the Macintosh?

Hoffman: So, I was responsible primarily for the international. I was on the team that rolled it out across the United States and then I was working with all the international groups to do the rollouts in their countries. The product introduction plan, the PIP, that Barbara Koalkin was—she had the whip and was, like, figurative whip. She held everybody’s feet to the fire. We were all—well, “all.” Barbara and I and Mike Murray were intimately involved in step-by-step planning of all of that, domestically and internationally. It was probably me with the third-party managers—not third parties, sorry—with the international country managers trying to do the intro. And then when the first intro happened here I was supposed to be abroad. I was supposed to be doing it in Australia actually.

Hsu: Oh, you mean when Steve--

Hoffman: And Steve said, “Under no circumstances are you going anywhere. You’re going to be here with us, with your family for this momentous event. You’re staying here.” So, I felt guilty, but I had to call Australia and say, “I’m not coming. You guys are on your own.” And he was right. Steve was right. It was the most incredible moment in my life and not to be there with Andy and Susan and Barbara and Steve—and, of course, Steve—and everybody else would have been just traumatizing I think, in retrospect. But I was so determined at the time that “I have a mission! I have to make it successful abroad!” I hadn’t thought about my own personal loss if I hadn’t been there. So, once again, Steve was right.

<laughter>

Hsu: So, you then transferred from international back to the main U.S. marketing in ’85.

Hoffman: Right.

Hsu: Could you talk about why you made that decision?

Hoffman: It wasn't really my decision. The marketing team and Steve came to me and said, "We need somebody who can continue working with engineering really closely, and you have a proven track record. You have to do this." I thought, "Okay. I'll do it." At the time also there was the effort for the Turbo Mac, which was supposed to be the Macintosh with the built-in hard disk. It was a tough time for Apple and a tough time for the Macintosh division, specifically. There was a big let-down after this, kind of "whoosh" after the Macintosh shipped, and it was really hard to harness the same energy again to work on maintenance and to work on new releases and so on. It was just very tough. And to work on this new effort, which would require a major engineering effort to do the Turbo Mac. So, we separated it into its own part of a building and I had two offices: one in the main Macintosh building and one in the Turbo Mac group to get people to mobilize and have the same level of enthusiasm for this product as they did for the Macintosh. But it was really tough, because people had been sprinting a marathon until-- and then all of a sudden to have that *whoosh* afterwards and then regain the momentum to continue working on it was not that easy. And, so, that's why I came in to do that.

Hsu: How did the Mac team change after the launch?

Hoffman: Well, we had a few people leave. So, people just simply left. Some took a break. And, so, it was not the same team anymore. It was harder to get it all together.

Hsu: We're talking about the Mac being in trouble in 1985. Why did the Mac not sell initially?

Hoffman: Well, all the limitations that we had built into it kind of came back to haunt us, right? The limited memory, the limited screen size, the performance was—some of the applications were way too ambitious for the umph that we had built in. So, it was important to keep iterating in response to the market and we just weren't quite as fast in doing that. So, the initial Mac was—and I mean, think about this for a minute: This is a product that sold essentially without a printer. The only thing it had was a dot matrix printer, because we wanted WYSIWYG and you couldn't do that with that letter quality printer, which was essentially a modified typewriter. You couldn't do that. So, despite all those limitations it still sold quite a bit. It's just that our forecast had been unrealistic. So, it's the expectation versus the reality that was haunting us at the time.

Hsu: I mean, you were responsible for reporting that forecast.

Hoffman: Right.

Hsu: How difficult was that?

Hoffman: The first forecasting meeting I walked into, I realized that the domestic forecast hadn't changed since we had shipped. There still were these crazy unrealistic forecasts, so I had to just slash them, which was a major relief to our sales and distribution. But, of course, it was not well received by anybody else. But you can't fight reality. It

was in our faces that we weren't selling as many as we had predicted, and yet we were still pretending like this was going to be happening any minute now. The forecast next month will be this gargantuan forecast. So, yeah, we had to slash it. I had to slash it and I think Donna may remember that actually, because I think it was a major relief to them.

Hsu: Mm-hm, right.

Weber: How big was the gap?

Hoffman: You know, I don't remember now, because since then so many numbers have been floated around, but it was significant. It was more than 50 percent.

Hsu: Did you work on the Macintosh Office campaign with Barbara?

Hoffman: Yes, I did. I was involved in the rollout and, again, the product interaction plans. But I was working on the Macintosh specifically at that point and the ill-fated Macintosh XL, and eventually re-named Lisa, which was one of the reasons I left Apple, frankly speaking. And, so, I was working on those two products, specifically as part of the Macintosh Office offering. So, trying to make sure that the Macintosh and the Lisa had—ugh!—had the same-

-

<laughter>

Hoffman: --had at least some of the kernels of what it took to approach the Office market. <laughs> But, actually, it was the LaserWriter that made that whole thing take off. They contributed to the Office market -- not Office market in the classical sense, but creative knowledge workers, we used to call them, which is a term I didn't like. But, at any rate, it turned out there were quite a few creative people that needed the tools and we were able to provide them the tools with the LaserWriter, PageMaker, the Adobe suite eventually and so on.

Hsu: So, desktop publishing.

Hoffman: Desktop publishing, that was it. Yes.

Hsu: So, in your view, is that what would save the Macintosh?

Hoffman: Oh, yeah, absolutely. No question. Yes. That was it.

Hsu: You mentioned the Mac XL--

Hoffman: And Blumberg was involved in that.

Hsu: Bruce Blumberg?

Hoffman: Yes, Bruce Blumberg was the product manager for the LaserWriter and the Desktop publishing market.

Hsu: You mentioned the Mac XL. Could you talk a little bit more about that? <laughs>

Hoffman: So, at some point—the Lisa was not out—obviously, was not succeeding. And, frankly speaking, I don't know exactly the details of why things didn't quite work out except that it was ultra-expensive. Well, "ultra." It was ten thousand dollars, but it was expensive, right? Compared to the nearest competition, which was the IBM PC, which was significantly cheaper. Or even the Apple II with the suite of VisiCalc software and Lotus software eventually-- Lotus software on the IBM PC. Anyway, so it wasn't selling, and meanwhile we had the Macintosh users clamoring for bigger screen and more memory. And we thought, okay—"We": I wasn't involved in the decision. *Somebody* thought that after we merged—by the way, we merged the two divisions. We had their product managers as well as ours working together, their international and our international working together, so we combined the teams. And we had attrition, of course, as always happens in such cases.

But, in any case, there was this decision before I took over that we should have an emulation mode on Lisa to emulate the Macintosh and call it the Macintosh XL. Extra-large, I guess. Well, the problem was, it was a bit of a farce in that when you emulated the Macintosh, it wasn't a full emulation; only a certain percentage of applications could run. The two operating systems were not—you know, it was slower because it was built on top of the Lisa or it was already built into it, right?

However, the pent-up demand in the market was such that when I came onto the project, it had just been announced, and I told them that this is going to sell out in three months. And then we are in the deep doo-doo, because having a three-month product that we had no intention of supporting into the future was going to cause a major dissatisfaction in the marketplace. The forecasts that were presented based on Lisa's previous sales was that it would take eighteen months and it will slowly dwindle, and it would just peter out into the sunset with nobody noticing. Well, guess what? We sold out in less than three months! We had no intention of building more. And it was a major scandal except that it was overshadowed by a different scandal: Steve being kicked out of Apple. So, nobody noticed the XL fiasco. But I felt like I was put in a position to lie to the customers and I just didn't like that. So, I went on a leave of absence and then eventually I decided not to go back. But with Steve gone and with various things happening at Apple, it wasn't my Apple anymore. But I tell you that it would have been a public relations—a total disaster if it hadn't been for bigger news. But there was clearly demand, right? There was clearly demand for a bigger Macintosh with a larger screen, with a built-in hard disk, . So, it happened eventually. It took a while.

Weber: But who was buying it? Was that business customers?

Hoffman: Businesses were buying it. Yeah. Even with the dot matrix printer. Can you imagine?

Hsu: But the Turbo Mac that you said was also supposed to be addressing those needs as well--

Hoffman: Yeah, but it wasn't there yet. It took a while for it to-- we just couldn't get people motivated to really work on it. Burrell Smith was working on the hardware. He just went and he was able to just focus and get it done.

Burrell was doing it, but we couldn't get the software people to be there to work on it, to work on all the other software, all the other firmware and systems software that needed to be there to make it work. So, it was a challenge.

Hsu: And could you talk about Steve leaving and that whole situation?

Hoffman: Well, so apparently, there were all these palace intrigues that were going on that I wasn't really privy to. I was too busy trying to figure out how we're going to salvage the situation. The one thing I did notice is that Steve was not as involved in the Macintosh and that was hurting us. And, so, I kept trying to get him back and focusing on the Mac. But, of course, being unaware of the fact that there were all these big forces going on behind the scenes, I had a grudge against him. I thought, "What the hell is he doing? Why isn't he focusing on the Mac? He needs to be here; he needs to be motivating the people; he needs to be presenting the vision for the next generation, and what we're going to do to maintain it," and all of that. And his heart wasn't in it and that's because he was having these battles at the executive level, which, as I said, I wasn't privy to. And I only found out after he left, because then, of course, he was profoundly depressed and we talked a lot about that.

Hsu: So, then you leave. What point did you decide to join NeXT?

Hoffman: I--

Hsu: Did you take time off in between?

Hoffman: I did take a little, yes. I took some time off and then Steve started NeXT. He had told me about NeXT and everything that was going to happen. And I didn't join NeXT actually as an employee, I don't think. You know, I don't remember now. I think I was a contractor, if I'm not mistaken, because I wasn't feeling a hundred percent. I was kind of depressed, myself, at the time. And also I was marveling at Steve after everything he had been through, being able to pick up and run again and get all excited in the new technology and everything else. But I also felt that the vision of that original NeXT eventually--of course, it was an incredible thing that saved Apple--but that original NeXT, that vision was not big enough for Steve. It was a very constrained vision, you know, based on where the Macintosh was successful, which was the education market. So, Mac is successful in that market, let's build a machine that's tailored to that market. But it didn't have the scope of Steve's potential, right? <laughs> Steve changes the world! He doesn't focus on a little market that he's going to cater to. So, I felt a little bit ambivalent from the very beginning and then it turned out that I had an autoimmune disease, I had a thyroid problem that needed attention. And, so, after nine months at NeXT I left. And I have to be honest, I think I felt a little bit jaded, like, "Steve, not again!"

<laughter>

Hoffman: Like, "Eighteen months we're going to have this incredible product and it's going to do this and that and twenty other things." And "not again!" with focusing on an unrealistic storage device! And so on. <laughs> So, I was kind of feeling, "I don't think I have the energy for this. A new group of people needs to get in here and be all gung ho." Obviously, they go in there, they were gung ho, and they created a wonderful operating system and so on.

Despite all the trials and tribulations that NeXT went through, their product software was amazing, right? And, so, that was great, but it was a long road. I just didn't have the stamina for that road, not at that time anyway. <laughs>

Hsu: Well, a lot of your friends who had been on the Mac were among the co-founders, right?

Hoffman: Mm-hm.

Hsu: So, Susan Barnes, Bud Tribble, Dan'l--

Hoffman: Right.

Hsu: What was the atmosphere like there working with all your friends?

Hoffman: That part was really wonderful and fun, but in the first nine months there was a bit of a disorientation, right? Exactly what are we going to do, how we're going to start, what are we going to focus on? There was the 3M machine, and we were going to various colleges and asking them what they wanted to do with their computers, what would they like in their computing device, how much they were willing to pay. So, there was a lot of exploratory work going on. So, that was interesting, but, again, I felt like you can't ask people what they want today, given that it's going to take a few years for you to produce this product. Even if they are focused on what they need right now, right? Even academics and even futurists are not going to say, "Hey! In five years, I think I'll need this," or "in three years, I think I'll need that." They focus on what they want now. And I could see that when I was present in these interviews, that they were all enthusiastic about something that they could have tomorrow. Or in the three months. Not something that they could have in three years. And that's why I thought this is not something that Steve had ever done before: do a product based on market research. You hone a product based on market research. You don't invent a revolutionary offering based on people's limited imagination at the moment! <laughs> Right? So, that's why I'm also saying that it didn't live up to Steve's potential. He had much grander capacity to shape the future than talking to academics to see what they wanted tomorrow for their computer lab. You know? Mismatch.

Hsu: I'm wondering if that focus on higher education partly due—I mean, there was a non-compete agreement signed with Apple that, because of the fact that so many of the founders had come from—had been on the Macintosh team—so, there was a lawsuit, right? And, so, there was the idea that NeXT couldn't compete directly with Apple.

Hoffman: You know what? I don't remember. You know, because none of that interested me, to be honest with you. So, I don't know exactly what the details of that were. And since I wasn't there at the very beginning of NeXT, it was a few months later that I joined. I think they had ironed all that out somehow or they had come to some kind of agreement before I got there. So, I don't really know exactly. So, what I can say is that I think the model was, where is there a market ripe for picking for this new technology? Well, look at that! They bought into the Macintosh in the very early stages, so, let's talk to them and see what they want as their next great thing. You know? So, I think that was the primary motivation.

Hsu: Right. So, what was your role specifically there?

Hoffman: So, ironically, my role was supposed to be product marketing, like on the Macintosh, except that they had an immediate issue at hand, which was that for some reason they had bought software that was written for the Macintosh, a word processing software-- MacAuthor?-- was it MacAuthor? Jeez, I'm so terrible with remembering. But anyway--

Hsu: WriteNow?

Weber: Is that--

Hoffman: WriteNow.

Weber: Oh, yeah, yeah.

Hoffman: Fantastic!

Weber: It was a great program.

Hoffman: It was a fantastic program. It was just really brilliant. It was a great word processor for the Macintosh. NeXT had bought it. So, the question is, what do you do with it? Okay, you can have them ported to the NeXT, but the NeXT didn't have yet anything to port it onto—and what do we do with the Macintosh version? Well. So, this was my immediate concern is, what do we do with this product that we have? And we're not going to go into the Macintosh dealer business or selling the Macintosh software business. So, what do we do with it? So, of course, I thought of Heidi Roizen . She knows how to do this. She knows how to sell these products. Let's sell it to Heidi!

<laughter>

Hoffman: And, so, she and I got together and “This would be a really good product for your offering, the T/Maker,” and Heidi agreed and they bought right now. And meanwhile the team that was there was supposed to be porting it-- I don't know what happened with that, because I left by that time. So, I don't know if it ever had an incarnation on the NeXT machine or not. That was my immediate project and as soon as I had completed it, I decided to take off to try and deal with my health issue.

Hsu: I think you're on a video on a retreat that NeXT had talking about the unrealistic release schedule.

<laughter>

Hsu: Could you speak to that a little bit?

Hoffman: Well, because as I was telling you, maybe I was too jaded at that point. But I thought, “Come on! We've done this before!” We had this crazy schedule and it really damaged not only people's psyches, but it also damaged the product concept itself. Because by the time we shipped it, some of it was already obsolete, because we thought we would ship it in eighteen months and it was twenty-four months with the Macintosh. So, let's not do that again

on the NeXT machine. So, that's what was my primary concern is that, come on, let's be just a little bit more realistic this time. But, you know, to Steve's credit, the fact that he can—like, a phoenix rising up out of ashes and all of a sudden going gung ho with the same enthusiasm, “In eighteen months, we're going to do this amazing new product!” You know, guess what? He did attract some really great people to do it again, as I said. But I was not getting into the groove, so to speak.

<laughter>

Hoffman: So, yes, I think I irritated Steve at that point. Like, you know, “What's wrong with you? Why can't you muster the enthusiasm again?” I blame it on my thyroid.

<laughter>

Weber: You had said earlier that Steve was very depressed. You were talking on that. When he had left Apple, but NeXT clearly was a way that brought him out of that.

Hoffman: Right.

Weber: Talk about that relationship between having that energy and, was it in some way therapeutic for him to throw himself into that?

Hoffman: I think, you know, Steve had just been part of a creative process since he was very, very young! And I think he was having withdrawal symptoms, frankly speaking, from not being in the crucible of creating something new and something exciting. So, he was able to focus enough to be able to say, “Okay, I'm going to do the NeXT thing,” and it was certainly therapeutic, but it was, I think, such a blow to Steve. The whole Apple ouster was really emotionally very, very difficult for him, not only because he was parted from his creation, but because he had some profound relationships with the people who did it, who'd ousted him. There were multiple blows there. But, to his credit, he was able to come up with something else to start harnessing his energies. And it was a ramp, I think. That's why when I was at NeXT, I saw only the beginning of that ramp, but it eventually grew into something much bigger than that original mission.

Hsu: So, what was that original mission statement at the time that you were there and how did that change over the years?

Hoffman: Well, the original mission statement was that they were going to create the 3M machine, right? For the educational market, based on an advanced operating system. So, it was going to be Unix-based, some flavor of Unix, and it was going to have state-of-the-art development tools based on some language, which they decided to be Objective C eventually. And it didn't take very long for that part to gel. It was going to be an amazing, unbelievable case. It was going to be the most beautiful machine ever created. It was gorgeous. No question about that.

Hsu: Was networking a part of that plan?

Hoffman: Yes. Networking was part of that, yes.

Weber: As consciously more networking than the Mac?

Hoffman: Yes. Yes, yes, because-- well, it depends what you mean by-

Weber: They recognized that networking had not been a big part of the Mac, at least early on.

Hoffman: But the Apple Talk eventually became part of--

Weber: Right, eventually.

Hoffman: --the Mac. Well, not even eventually. That actually--

Weber: True. By the LaserWriter time.

Hoffman: Yeah, by the LaserWriter time it was part of the-- so, from that experience and the industry had moved on. So, yes, networking was very much--

Hsu: But was it the universities that you had gone to doing that market research that were telling you that they wanted Unix and they wanted TCP/IP and all those things?

Hoffman: I think that was actually from the very beginning, but the universities confirmed it. They definitely confirmed it.

Weber: Yeah, I guess that would be my question. With UNIX TCP/IP kind of coming as part of the package--

Hoffman: Right.

Weber: --but was there more of an interest in it than that, seeing it as a really important connectivity is an important--

<overlapping conversation>

Hoffman: By that time, I think it was seen as important, because we were all relying so much on email. So, at Apple we had been relying on communicating with each other and so on. And part of the Apple Office concept was supposed to be the not only the LaserWriter as being a shared resource, you know, a networked product, but also the fact that that we're working on a file server, which never materialized, of course. But the concepts were already there. The networking was already being thought of as something that was very important. Now, of course, it was Ethernet inside *internetworking*, not *intranetworking*—or vice versa. Did I just do the wrong--

Weber: Yeah, intra-- Ethernet *intra*, inter-outer.

Hoffman: Yeah, but that came. That came later, yes.

Hsu: Looking back on NeXT's trajectory, shipping in '88-'89 and then eventually killing off the hardware, becoming a software company and then getting acquired by Apple, what was your sort of view on all that looking from the outside?

Hoffman: You know, I don't know that I had any particular view. I knew that somehow Steve would salvage this effort. I knew that the effort was worthwhile and, so, I had faith in Steve that somehow he was going to manage to make it successful. When he went back to Apple, oh, my God. I think I wasn't the only one, but I think many of us thought, "Okay, this is Apple's re-birth. This is Apple's renaissance." Because Apple couldn't go much lower at that point, right? Apple had just degenerated so profoundly that the next step would have been to close shop. So, Steve was always good at resurrecting things out of ashes. There was no future for Pixar when Steve came in and was able to give so much fuel for it to continue, at huge risk to himself. I mean, he invested most of his net worth, I think. A substantial portion of his net worth into Pixar. I mean, who does that? Right? Only someone who doesn't care about his net worth.

<laughter>

Hoffman: And he's so convinced that the potential that he sees is going to be realized. So, I think we thought, this is going to breathe a new life into Apple. Now, nobody knew exactly how he would do that. But the Macintoshes changed immediately, right? They all of a sudden started having personalities again. They started to have that magnetism. They started attracting attention and customers, and that was amazing. And, of course, the NeXT software, God bless them, I mean, it's revived the Macintosh. You know, I keep saying the first Macintosh's success was really Windows, right? But I don't want people to misunderstand, what is today's Macintosh has really gained market share and is the success that it is. The definition of the Macintosh today is very different from the Macintosh that we shipped. Right? It was NeXT's software that created that Macintosh to the exclusion of the previous Macintosh. People don't remember the previous Macintosh. So, I don't want there to be a misunderstanding, because I think the last time I spoke to you I said that the real success in terms of market acceptance was really in Windows, because Windows was essentially a copy of the Macintosh and took over the world. But today's Macintosh success is NeXT. You know? No question.

Hsu: So, how much time did you take off after leaving NeXT to focus on your health?

Hoffman: You know, I don't remember, because I got involved in a bunch of little startups that were doing things for the Macintosh and I can't tell you exactly how long that lasted. I have such a tough time with chronology. So, I don't know, but it was a few months. And then I got involved in a whole bunch of other things and got involved with Hartmut Esslinger on Frog, with Andy Hertzfeld. I got involved with Lucid, which was doing Common Lisp, and because I was all excited that AI software is going to finally take off. As I said, I'm the queen of failures.

<laughter>

Hoffman: I don't know whether it's just that I jinx things, or whether it's just that I'm attracted to the bleeding edge at a time when there is not the prerequisite set of ingredients to make it successful. But that's what makes it really fun, right? Is to be there at the very edge of what's possible. So, I worked there and then eventually I joined General Magic.

Weber: Okay, so, how did you come to join General Magic? Obviously, you knew many of the people.

Hoffman: Yes, I joined General Magic because Andy Hertzfeld and Bill Atkinson were the co-founders. And when they started thinking about marketing, they told Marc Porat that they know me and they would like me to join. And, so, I met Marc and, of course, Marc's vision was unbelievable, right? His famous book—you guys should have a copy of that book. Do you have a copy of that book?

Hancock: I don't, but it's going to be part of our request.

Hoffman: Yeah, you have to have a copy of that book, because the book is incredible. So, the book essentially talked about a personal digital assistant, something that you would have with you all the time. Something that was essentially your amanuensis in the sense that it helped you research things, it helped you buy things, it helped you—I don't want to recreate Marc's vision here, because he had highways, destinations, and the three circles overlapping. It was just this grand seductive vision that once you saw it, you couldn't help but think, "Okay, sign me on." Not only was it supposed to be a personal digital assistant, but incarnations of it he imagined—and communication was huge part of it. It was, you know, communicate, buy, and research, essentially. Information, communication, and—he called it highways, destinations, and something else. I'm drawing a blank, I'm sorry. But it was supposed to be able to communicate. You were supposed to be able to buy on it. You were supposed to be able to do all kinds of research. And not only that, but in this book, he had several pictures of something that looked very much like an iPhone, a smartphone with various attachments for medical applications, for meteorological applications, you know, for market-specific niche applications and vertical applications. So, it was just incredible in its scope. The scope was phenomenal. So, it was a no brainer for me to join, and especially since I knew Bill and Andy, and I knew that I loved working with them. And it was a fantastic team. We were able to attract the most amazing group of people. When you start thinking about people in this valley-- Tony Fadell, Andy Rubin, Steve Perlman, the list goes on. Megan Smith! The CTO of the United States was part of our team. And Lee Migdall [ph?]. It was just really an amazing group of people. So, they were the next generation. They were the ones that, despite the fact that General Magic failed, they took on the mantle of the vision and they went onto this valley, into Apple and Google and Facebook and various other places, Amazon, and re-created it. How could I forget. Amazon! Amazon [eBay] was started at General Magic, because we said to him that we weren't interested in—he came to us! Pierre Omidyar said, "I'm thinking of doing this. Is General Magic interested? Because I was working on it while I was here, but not on your time, but on my time, but I wanted to out of courtesy let you guys invest." And we said, "Oh, no, no. We'll sign the paper. It's all yours. Go. With our blessing, go forth and multiply." And he did.

Weber: Tell me more about--

Hoffman: Mm?

Weber: Tell me more about that?

Hoffman: Well, you know, it started with Pez dispensers, right?

Weber: Right.

Hoffman: Pierre Omidyar was actually working in my group. Just before I left we hired him.

Weber: Ah, at eBay.

Hoffman: eBay. Did I say Amazon?

Hancock: You said Amazon.

Hoffman: Oh, I'm so sorry! That was a mistake.

Hsu: I was like, "Wow! I didn't know that!"

Hoffman: No, no, no, no, no. eBay, eBay, eBay.

Weber: So, tell me more. So, he was selling the Pez dispensers.

Hoffman: Yeah, he was doing the Pez dispensers. And his girlfriend at the time, his current wife, if I'm not mistaken, was collecting Pez dispensers and they were trying to create a site that would allow collectors to exchange information and to exchange product info and so on and find each other. And, so, that's how eBay got started. Yeah, I really apologize. I mean, eBay.

Weber: No, no. That's--

Hancock: We were really amazed. We were leaning in. This is new news!

Hoffman: No, no, no, no, no!

Hsu: What a scoop!

Hoffman: No, no, no, no, no. Sorry.

Hancock: eBay is an amazing story.

Weber: No, but that's still—I didn't actually know that either.

Hoffman: No, no. That's it. Yeah. Pierre started it while he was at General Magic and so, an amazing group of people. Darin Adler, who went back to Apple to work on the new incarnations of the Macintosh after the NeXT-- I mean, I can't even name everybody.

Weber: Now, you know about the Dynabook, presumably, from early on.

Hoffman: Oh, yeah, of course.

Weber: And, obviously, this came out of the milieu of the Knowledge Navigator and all that.

Hoffman: Right.

Weber: But, I mean, how much did the vision make you think, for instance, of some of the things that park around the wilder visions for the Dynabook?

Hoffman: Well, you know, the communications part of this was really, really critical, and much better defined in terms of exactly what it could and couldn't do. And the Dynabook was really more of a computer that was with you all the time. The DNA of Dynabook came from computing and the DNA of what General Magic was trying to do actually came from communications. So, I think that would have been the biggest distinction, because the focus really was on email first and foremost and then secondly on being able to purchase things and work together and collaborate, but having all your information with you at all times.

Weber: And how about Jef Raskin's Mac concept? Did it remind you at all of that? The communication aspect.

Hoffman: Mm. Not really. I mean that's why I say you really need to look at that book, because its center of gravity is very different from anything that came before. And that's why, by the way, John Sculley decided to launch the Newton project, where he used a lot of the language of Marc Porat's communication-centered vision, except that because communication wasn't there quite yet, they focused more on a PDA facet of it. But it was, essentially, one of those things that eventually, this was going to be your email machine.

Weber: So, that's why they gave it names that sounded more--

Hoffman: Yeah.

Weber: --communication-oriented.

Hoffman: Yeah.

Weber: And the original plan was to build a proprietary network or--

Hoffman: I mean, there were many missteps and that was definitely one of them. The analysis of what happened with General Magic is rather profound and a little bit multi-faceted, shall we say? General Magic's model was to

have multiple licenses. So, we were going to create the core software and hardware and communications software and hardware prototype, and we were going to license it to many people. Now, what happened is that the licensees were also the investors. The licensees were on the board. When you don't have any VCs, right, and you have your customers on your board, your customers' interests are that you stay alive enough to supply them with what they need. But they don't want you to become terribly successful or powerful or succeed on your own in your own right. And even if they did, there is an underlying motive there where they have to care for their interests first, right? So, that model was flawed, number one. Number two, the technology, the communications technology simply wasn't there. The wireless was not there yet. There was no wireless infrastructure that we could plug into a wall and essentially use a modem to be able to communicate, which is still, okay, not terrible, because you could line up all your emails and so on and plug in-- which is what people were doing with their computers, right? But with the portable device that you carry around with you all the time and everything, right? That was not ideal. So, the infrastructure wasn't there yet and that's why we went with AT&T, because we thought that they could build out part of the infrastructure and with Motorola, which could give us the wireless. Well, you know, a small company cannot get these behemoths to work together and create something. Also, we had a flawed model of what that infrastructure could be, because we should have understood the Internet and said, "This is going to be the infrastructure." Instead, when once we decided to go with AT&T, then we had to commit to it being proprietary and that was a big mistake, of course. And you have to consider the fact that although all of these companies really bought into the vision, it was not at the core of any of their businesses.

Therefore, except for Sony—which was so keen and they were just the most wonderful partner, and I can't say enough good things about Sony—all the others had assigned the B or the C team in their companies, right? We're talking about the leading, leading edge of technology where you have to have the most creative minds coming up with breakthroughs almost every day, and when your partners have not made that commitment, it's very difficult to drag them along, right? So, that was also a problem. There were many issues. We were trying to do too much, too many partners, proprietary, not seeing the Internet in time to be able to latch onto the Internet. Now, I was trying to do something which was, I was working to get the AOL communications structure working on our software. And my thinking was AT&T, no AT&T, whatever. If we have at least AOL, we are eventually going to graduate with AOL even if we don't do anything else, right? We're going to go with them. And they were wonderful. They actually decided to take the risk and they were working on it. Of course, that did not appeal to some of our licensees. But we had way too many. I mean, we had Philips, AT&T, Sony, Panasonic, IBM—I mean, one of those giant partners—again, I put Sony in a category by itself, because they were absolutely amazing. One of those other partners is enough to kill a start-up. Having them all together being your customers is-- -

<overlapping conversation>

Weber: And they had their own sort of board within the-- what was it called? You had the--

Hoffman: The--

Weber: Founding Partners Council.

Hoffman: Founding Partners Council.

Weber: So, was that effective or very slow moving or--?

Hoffman: Well, you know, that was the board of directors, essentially, the Founding Partners Council, and that included all the licensees, AT&T and Motorola. So, this was a pretty large group as I recall. But, again, you couldn't discuss anything in those meetings, because everything was proprietary to each crew. They were competitors. So, how are you going to get them to provide any kind of guidance, governance or management guidance when you can't discuss anything that is specific, right? So, that was also problematic. When I say "Sony," I mean Sony Japan. I recall that one of the guys—I don't remember whether it was Sony America or if it was somebody from AT&T or whatever, when Marc talked to him about the book and what we should start with, where should we concentrate? Right? I kept saying that maxim-- that startups die of indigestion and not starvation. That was true in spades for General Magic. We needed to focus. We needed to pare down. We needed to make it less ambitious.. And, so, I had urged Marc to talk to the boards and some of the licensees in private and ask them, "What would be the most compelling product for you?" And believe it or not, one of them—I don't recall now who it was—said, "Do them all."

<laughter>

Hoffman: Clearly, they had no experience with startups. They had no idea. They had divisions competing with each other and everything. They did not grasp the fact that we have to focus and you have to make choices and you have to make decisions and so on. Anyway, those were all issues.

Hancock: In retrospect, hindsight is-- more like a 20/20 vision. At the time, when you have these hard decisions, what was the dynamic among the leadership for—you said you had so many brilliant people with a big vision and yet the execution was lacking. What kinds of ways did you address those kind of difficult decisions?

Hoffman: Well, actually in the end we sort of punted I think, which is one of the reasons why the Motorola product and the Sony products, when they came out, you know, were rather cumbersome and difficult to use and slow, because some of these really hard decisions, we didn't make them. We just put too much into the product, we made it too cumbersome. Couldn't really pare it down. And the infrastructure that we were expecting anytime now, anytime now, Motorola was going to announce a wireless network and so on. It didn't happen in time. So, we couldn't quite--

Weber: And you were VP of marketing there. What were the main business and marketing strategies? What were you using as the main selling points? The Magic?

Hoffman: The main selling points were that it's portable, which it turned out to be less portable than we had liked, because it was not that form factor. This is a technology that's with you all the time. It has all your information at all times and it helps you communicate and email, email, email. You know. And rich content email. Not just text, but having other content in your email. So, those were the main selling points.

Weber: So, news was not part of it, particularly reading the newspaper. How about navigating information like AOL or looking up things?

Hoffman: Not yet, no. Not at the time. We didn't have that. You know, the thing is, well, that was the issue. I was waiting for, again, the AOL product, and once we had that we could've had more things to-- but we were selling the vision, the future. You know, "In the future it's going to be doing this and this and this." But at the present we didn't have that.

Weber: And the AOL product would have been basically the AOL client running on the General Magic device.

Hoffman: Mm-hm. Yes. But with the user interface of the Magic Cap.

Weber: Right. And being able to do direct transactions perhaps or have your agent buy things for you.

Hoffman: Yes. Exactly.

Weber: In the marketing, how did you differentiate General Magic from the Newton?

Hoffman: Well, by that time I think we didn't have to, because the Newton was not successful and none of our partners even tried to position themselves against the Newton or anything. The partners were in competition with Sculley rather than with the Newton, frankly speaking. The partners wanted to all seem visionary, like Sculley did. When Sculley had that video of himself with the PDA vision, every one of our partners, except Sony Japan-- <laughs> when I say "everyone," always exclude Sony. They're saints. But everyone else wanted to get that vision thing going. They all wanted their own videos and they wanted to be able to go out there and announce right away—the product was at least a year from shipping—and they wanted to make a partnership announcement, so they could all talk about the vision, because that was critical to them. And that was my biggest fight trying to hold them back, because I knew they had limited budgets and I knew if they blew their budgets on that announcement they won't have much left for when the product actually ships. Sure enough, they blew it on their vision announcements and the big thing in New York and everything else and by the time the product was in the market, very little marketing dollars remained to actually make a push.

Weber: Describe the big thing in New York.

Hoffman: We had this big announcement in New York of the partnership and the licensees without actually giving out any details of which licensees' products, but with the vision. And they all got up there and talked about, they're committed to making these products that are going to be communicating and they're going to be portable and always with you. Each one took a piece of Marc's visions and elaborated on it as their vision of their company, which is fine, except that it all went from the budget that was committed to General Magic product shipment. So, by the time we shipped the product, there was no money to train the dealers, there was no money to do any meaningful advertising. We were able to keep that buzz of that announcement going through PR in our group for a year, believe it or not. You know, the things kept coming out in the press over and over again and everything, we were able to maintain that. Somebody reminded me of that. Actually, Mike Stern reminded me of that recently, because there's a

documentary being made on the whole General Magic journey. And, so, a lot of this has been re-hashed now, people are remembering what actually happened and are looking at some of the artifacts from that period. And Mike was saying, “Oh, my God, I’m looking at all the press and you guys were able to keep it alive for over a year after the announcement.” But you needed more than that. When you have a channel, unless things sell themselves, you’re not going to be able to sell at full price without some investment in how it’s going to be presented and how it’s going to be talked about.

Weber: Now, your husband was working for one of the main competitors at that time.

Hoffman: Yes, EO.

Weber: Yes. So, how did that play out? And you had obviously gotten involved somewhere between the Macintosh and then.

Hoffman: Yeah.

Weber: So, you were literally both working for direct competitors, but within a community of people that knew each other very well. I mean, what was that like?

Hoffman: Well, it was interesting. We never talked about work. We were working with some of the same licensees, by the way. So, that was kind of interesting, because we couldn’t share any of that. Now what helped is that a few months after I joined General Magic, it turned out I was pregnant. And, so, in that process we had a child, so there was a lot to talk about without--

<laughter>

Hoffman: --concentrating on work. So, it was a bit tense, I have to say. And, of course, you know, my colleagues at General Magic were a little bit resentful and his colleagues at EO were a little suspicious, but, yeah, we somehow managed to get through that. I think people realized that we really didn’t communicate at all about any of what was going on in our companies and we were dead set on succeeding in our own right against the competitors.

Weber: But, obviously, you both were excited by a similar vision of portable, easy to use. I mean, did you talk in more general terms about-- or you just sort of avoided that whole--

Hoffman: I remembered, like, we had decided that all of that was totally taboo. And so, for a few years there we just had no professional talk whatsoever. And we didn’t even talk about the licensees. Sometimes we were itching to say, “Oh! And so-and-so, did you have this experience with—what did you tell him when you—”. Off limits. On the other hand, some of the licensees didn’t have the same qualms. So, they would tell them what we were doing, they would tell us what they were doing. But it didn’t come through this channel.

Weber: So, you found out what your husband was doing through these very circuitous--

Hoffman: Right. And people would come and say to me, “Did you know--?” And I’d say, “No, I didn’t know. Well, how do you know?” “Well, you know, one of our licensees told us.”

<laughter>

Weber: Oh, that’s funny. And the IPO was quite an exciting period, right?

Hoffman: Yeah, yeah.

Weber: And that’s when hopes were very--

Hoffman: Very high.

Weber: Any recollections of that or stories?

Hoffman: Well, my group and I worked mostly with the analysts. So, we were involved with the groups that were separate from the investment arms and we were talking in broad terms about the market, the potential of the market and so on. The actual IPO involved mainly Marc, because we were in the throes of actually producing the product. So, he managed to insulate us from that effort so that we didn’t have to participate so much. It was Marc Porat and Marco DeMiroz and the licensees, but not even so many licensees I think. It was mostly Marc and Marco and Mike Stern who was the general counsel doing all the prep work and working on it and so on. We edited the materials in our group, but we try to insulate the engineering group and some of the product marketing and so on, very intentionally from what was going on.

Weber: But in terms of excitement and feeling that you were moved or--

Hoffman: Yes! Of course, it gave people a boost, because, again, it was another one of those efforts where everyone had thought that it would take a couple years and it was taking longer, and it was more exasperating. So, it gave an enormous moral boost at a time when everybody needed to regroup and continue, you know, pushing forward.

Weber: In the middle of all this, the web did start to get a buzz.

Hoffman: Yeah, right.

Weber: So, what was the attitude about--

Hoffman: I think wistful, actually, because at that point we really wanted to be able to take advantage of the web, but we were locked in.

Weber: I mean, a web browser would have never come up, because it would have been--

Hoffman: No.

Weber: Even when AOL went that direction.

Hoffman: Well, no. We were hoping that AOL would move in that direction and that we would be able to-- we wanted to, but it was just that we were constrained. Contractually constrained. And the thing that I should mention is that very early on, we had a consultant, and I wish I could remember his name. He was a friend of Rich Miller's who said, "Why don't you guys just use the Internet, the World Wide Web?" You know? And the problem was that at the time it was ARPANET. "Why not use the ARPANET?" I think it was still the ARPANET, if I'm not mistaken. But, anyway, the problem is that we had this motto that somehow we have to have a partner that is a communications biggie. You know, with AT&T we could also think in the future of phones and, so, you know, it was our problem. It was somehow we didn't see it, you know what I mean? We just didn't see it, even though we were told. We did not grab onto that idea, which I wish we had, but, obviously...

Weber: So, you stayed until 1995. Talk about what made you decide to leave.

Hoffman: Well, there were a number of things. I think I was just too exasperated and at that point I was becoming, I think, rather—how should I put it? Non-diplomatic with our partners?

<laughter>

Hoffman: And I thought at that point that, wait a second, you know, this can't go on, because I was coming to heads, you know? And I think Megan in her infinite wisdom—and she's always wise, even beyond her years—because at the time she was a kid and I was supposed to be the adult—Megan told me once, "You can't do this! You can't just insult them to their faces." You know? I had had it with them. So, I thought, "Okay, this is not good for General Magic," so, that's number one. The other thing was that I was sorely disappointed in the products that came out and, frankly, I couldn't see how I could help it change. I just didn't see, what could I do? How can I help this succeed? And at a time when I couldn't see that, I thought, "I can't stay on." They better get somebody else who can. Fresh blood or newer thinking or whatever. Somebody who has a way to see past the obstacles. I was just getting mired in the obstacles. So, I think that those were the main reasons.

Weber: One minor question I think, but Philips in the Netherlands was important in Wi-Fi, but that was not the part of Philips you were dealing with.

Hoffman: No.

Weber: Okay.

Hoffman: Yeah.

Hancock: May I ask a question about the--

Weber: Of course.

Hancock: --partners just before we leave that? Partners were clearly important impetus for you deciding ultimately to leave, but ultimately was part of the strategy for the company.

Hoffman: Right.

Hancock: You mentioned a couple of times that you put Sony Japan separately, as a saint. What differentiated both them as partners as well as the relationship with you?

Hoffman: They had a great team. Their team was really good and very different from all the others. Very committed, working long hours along with us, unlike the others who were strictly nine-to-five kind of people-- or some of the others who were nine-to-five people. They were just willing to put up with so much, you know, waffling on our part. And Sony had this dedication to product quality and we would sneak something in at the last minute after all the quality control was already supposed to be done. I mean, that happened several times and they were just incredible and they would turn on a dime and do what they needed to do. So, they were really committed and they were really working very, very hard. So, this was Sony Japan and their engineers and their product managers.

Weber: The Palmtop was in that rough period, the Sony Palmtop?

Hoffman: You know, I don't recall.

Weber: Okay. So, you weren't interacting with that team specifically.

Hoffman: No, no.

Weber: And then, so, after General Magic, what did you do next?

Hoffman: After General Magic, I took some time off and then I started working on non-profits. So, working in educational non-profits and environmental non-profits. So, I was working with an environmental think-tank called Redefining Progress that was working on the pollution legislation and climate legislation in California. And that group was working with the governor and the legislature to pass some of the legislation that we have today in California on various climate initiatives. So, that was really important to me. So, since then I've been doing mostly non-profit work and also helping any start-ups that come to ask for help, whether it's with business plans or what have you. But not in the past several years, because I really feel that the industry has moved into a space that I no longer am completely in touch with from the industry point of view. I use their products, but I am not as up-to-date to be able to provide any kind of constructive advice on the creation side.

Weber: And then your husband, Alain, went and created, what was it? WAP with Unwired. What's the--

Hoffman: Right. The company changed names several times. It was Unwired Planet and then phone.com and so on.

Weber: Now that became very influential, but it's kind of opposite end of, say, the General Magic or the go vision.

Hoffman: Right. Right.

Weber: At this point, you guys could talk about it I assume.

Hoffman: Yeah, Alain was convinced that the right thing-- he actually had told people that most people are going to be texting each other much more on these devices than they're even going to be talking from the very beginning. His thing was the Internet in your pocket. He was very focused. He thought the grander visions right now cannot be realized because the technologies aren't quite there yet. So, but Internet in your pocket with very focused and limited capability, we can do that. So, that's what he focused on. I was kind of like, "That's not this huge grand thing!" But millions and millions of people used it.

<laughter>

Hoffman: So, it's kind of funny when we watch our children going on and on on their phones--

Hancock: One hand in the pocket, actually, right?

Hoffman: Oh, one hand in the pocket and Alain looks at me and smiles, like, "Mm? You see?"

<laughter>

Q: But they're using phones that have some of the features now that General Magic was trying to use.

Hoffman: Yes, of course, of course. And that's Steve again. That is a vision that was really of Steve and he made it happen.

Hancock: Well, we, today, thank you so much for your time. We had hoped to cover three topics. We covered two. You need to go, so we want to be mindful of your time.

Hoffman: Thank you.

Hancock: Thank you so much.

Hoffman: Thank you. And I wanted to mention the thing several times as I was talking and the reason I said curiosity, and it's the Russian word is "lyuboznatel'nost'" <speaks Russian: "любопытность">, which is a very specific kind of curiosity, which is curiosity relating to knowledge as opposed to curiosity relating to gossip or-- you know. So, I think for me, the guiding principle has always been because I was intrigued by the leading-edge technology. It was always the seduction. And I think if you're a product person and if you're in high-tech, that thrill of seeing and knowing and being curious about the future is what guides you. And that is so profoundly satisfying that no matter how many times you lose and fail, the satisfaction of having—because I don't regret a minute of my time spent on General Magic. It was just this incredible feeling of seeing the future, being within a grasp, trying to

identify the most leading-edge technologies and understanding how they work and what can and cannot be done. That is so profoundly satisfying to somebody who's a product person. It's worth everything.

Hancock: Perfect way to end today. Thank you so much, Joanna.

Weber: Thank you.

END OF THE INTERVIEW