Computer History Museum

John Sculley:
The Truth About Me, Apple, and Steve Jobs

Part One

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Hi. My name is David Greelish from ClassicComputing.com and I'm a computer historian. I write and produce podcasts about computer history nostalgia. I'm also a huge fan of the Macintosh, Apple Computer, and, of course, Steve Jobs. I am and have been very inspired by Steve. But I'm also a fan of John Sculley and have owned his book for many years. John Sculley has a bad rap. He is blamed for firing Steve Jobs, as well as almost bankrupting Apple. I fell in love with the Mac and Apple in late 1986, while John was at the helm. Thus began my romance with the company, the Mac, and other Apple products, and the culture in being one within the minority of personal computing. A non-DOS, then non-Windows user. A Mac user. It was a few years later that I started studying computer history. I've been learning more about the two Steves, Steve Jobs and Steve Wozniak.

In recent years, and now after Steve's death, John Sculley has been very remorseful for his actions surrounding Steve's departure from the company. I believe that John has been way too hard on himself about this. As he took his position seriously as CEO, took a stand on the decision about the Apple][, then was essentially forced by Steve to have the board vote between them. His direction won out. They agreed with John. I argue too that Apple was a very innovative and exciting company from 1985 until at least 1992 or so. As an avid user and fan, I felt that Apple was doing a lot of things right during most of that time. During John's leadership of Apple some significant products were introduced, like the Mac Plus, the Japanese Mac OS, the Apple][GS, the Mac SE, and especially the Macintosh 2, with open architecture and color, Mac operating system evolution, Apple][system evolution, low cost Macs, the PowerBook, which completely redefined laptop form factor, QuickTime, and think it a failure or not, the Newton. So, in this first part we discuss: did John Sculley really fire Steve Jobs? Lifestyle marketing brought to Apple, Bill Gates, what happened after John left the company, John, Alan Kay, the Dynabook and the Knowledge Navigator, plus Siri.

Hi John. Thank you very much for joining me today to conduct this interview. It's my pleasure to speak with you, and as I told you before the interview, it's my intention to mostly talk about you, and specifically your time running Apple Computer post-Steve Jobs. But I am certainly open to talking freely in any other direction as well, if you so wish. I know you have publicly expressed heartfelt regret recently in regards to Steve Jobs and what mistakes you felt you made at Apple, but I have researched where you also led the company very successfully for many years. It's not hard to simply look at the public record of Apple during your leadership and find growth, profitability, and innovation. So this is what I'd like to focus on.

So first, I'm just going to give our listeners a quick overview of your executive history, and this can be found in Wikipedia where I garnered most of it, so correct me if any of this comes off wrong. You joined Pepsi-Cola, division of PepsiCo, in 1967 as a trainee, and by 1970, at the age of 30, you became the company's youngest marketing vice-president. You are probably best known at Pepsi for the Pepsi Challenge, a heavily advertised taste-test campaign you started in 1975 to compete against Coca-Cola. When the Pepsi Challenge campaign kicked off, you had risen to senior vice-president of United States

sales and marketing operations. In 1977 you were named Pepsi's youngest ever president. So fast forward a little bit to 1983, and Apple began to lure you away from Pepsi because they wanted you to apply your marketing skills to the personal computer market. Steve Jobs successfully sealed the deal with you after he made that legendary pitch "do you want to sell sugar water for the rest of your life or do you want to come with me and change the world?"

Also, Apple's then president, Mike Markkula wanted to retire and believed that Steve Jobs, who wished to be the company's president, lacked the discipline and temperament needed to run Apple on a daily basis. Again, this is some opinions, I guess possibly of Wikipedia writers. He felt that you with your conventional business background and considerable recent success would give Apple an image of greater reliability and stability. So in April of 1983, you became both the CEO and president of Apple Computer. Then Steve Jobs left the company in September 1985 and you continued to lead the company until June 1993 with Michael Spindler then becoming CEO and you as the chairman, and then later you resigned, four months later in October 1993. You have co-founded, run, or been a part of a number of other companies, but I'm going to mention just a few of the standouts here, quickly.

In 1995 you became an investment partner of Sculley Brothers LLC, a private investment firm in New York City, you were chairman for Live Picture in 1997 as well as co-founding PopTech with Bob Metcalf and others, you joined the board at Buy.com in 1998 and partnered with Dennis M. Lynch to launch Signature21 in 2000, as well as joining the board of directors of InPhonic in that same year. In 2003 you helped in the founding of Verified Person, Inc. and in 2004 you joined the board of directors at OpenPeak. In March 2006 you were named chairman of IdenTrust and you became a venture partner at Rho Ventures.

So there you go, and I thought all you ever did was fire Steve Jobs and ruin Apple. And I'm joking everyone, especially to you John. But John I want to lead off with that. It kinda can't be helped but to talk about Steve Jobs a little bit, so you know this has come up a lot especially recently that you fired Steve Jobs, but isn't that kind of a fallacy? You didn't actually "fire", quote, unquote Steve Jobs. Can you tell me what happened there?

John Sculley: Sure. Steve and I were partners and I was brought in to Apple to help run the company, together with him. I had no computer background when I was brought to Apple. I was brought to Apple because they needed someone who had the management experience first to help solve the problem that Apple had introduced the Apple III in 1982, and it had failed. The Apple][was near end-of-life, technically, Commodore outsold Apple][almost two-to-one, Atari outsold Apple more than two-to-one, the IBM PC had been introduced in 1981 and was rapidly catching to up the Apple][and was expected to pass it and clearly it was going to dominate business.

So the real issue that I was brought in to help with was to be able to use my marketing experience to keep the Apple][commercially successful for at least three more years to generate enough cash to give Steve Jobs the time to go and create Macintosh, and launch Macintosh successfully. So that was the first reason I was brought to Apple, and it didn't take any particular computer experience to be able to do that. The way we approached it was it was a question of marketing and management and I recruited in a terrific executive, well known in Silicon Valley, Bill Campbell, who came in as our sales VP and he completely, you know, reenergized the dealer sales channel at that time. He took one of the key executives at Apple, named Del Yocam, and put him in charge of the Apple][as a group. Ironically, because Steve was no longer interested in the Apple][, Steve Jobs, even though he had created the Apple][.

DG: Right.

JS: And even though Apple][was a cult product in itself, much like Macintosh became, that Steve looked at the Apple][group as the bozos, and he looked at the Macintosh as the elite talent team that was going to create the next great computer. And so, the Apple][group was actually not even physically located on the Apple campus. They were off in an entirely different part of Silicon Valley in a building called the Triangle Building. So the first thing I did when I joined Apple was to move my office over to the Triangle Building and became the titular head of the Apple][group. Because I wanted to give it some attention and then I used these two talented directors, Del Yocam who eventually moved from manufacturing to head up the Apple][group as the operational head and Bill Campbell, a terrific sales and marketing executive, and between us we were able to recraft the strategy for the Apple][.

For those people who may remember the Apple][, it ran on an operating system called Apple DOS, it used the 6502 processor, which was near end-of-life, but what was interesting to me as I was trying to understand how do people use the computer and what do they do with it, a couple of interesting facts came out. One was that most heavy users used it for spreadsheets and most of the people who used spreadsheets didn't use the Apple operating system they put a card into the Apple][slots, which is called a CP/M card, and the CP/M had a different processor and different operating system on it and it became, not a different processor but a different operating system, and it became the way in which the Apple][was able to kind of stay up with the IBM PC in term of heavy lifting of spreadsheets. From a marketing standpoint, we wanted to find a differentiation for the Apple][and the Apple][is the first color computer, the reason why the Apple logo was multicolored back in those days, a multicolored apple with a bite out of it, was that it wanted to emphasize the fact that it actually had a color display, before anybody else did.

And so, as we were thinking about how do we differentiate the Apple][and make it exciting, we said lets focus on spreadsheets, lets add color graphics to the spreadsheet as the appeal that differentiates us and let's create sales incentives for the sales channels to promote that particular solution. And let's start

designing new packaging for the industrial design of the Apple][that we later introduced a product called the Apple //c which was basically a repackaged Apple][and we were able to keep the Apple][extremely profitable, we started regaining market share, and it generated the cash flow that Steve needed to be able to create the Macintosh. So that was the first reason why I was brought in to Apple.

The second reason was that Steve Jobs believed that personal computers were eventually going to change the world in ways that would be every bit as important as any consumer product had ever been accepted by people. And therefore he said that we have to learn at Apple how to market personal computers the way that you, John, learned how to compete against Coke in the cola wars. Back in 1978, Pepsi actually passed Coca-cola in the United States as the largest selling packaged good in America. And so Steve was really interested in how we accomplished that. He and I spent months together getting to know one another, probably almost five months. Weekends. I'd go to California, he'd come to New York, and so forth. And in those discussions, I was trying to teach him what I had learned at Pepsi about marketing.

One of the key insights we learned was that you don't sell the product, you sell the experience. We did that with Pepsi Generation, and we did that in the early '70s with Pepsi Generation focused on baby boomers who were then young, and we did it when color television was first appearing, and large screen color television, meaning 21-inch screens were becoming the norm in the marketplace and we went to our ad agency, and they went to the best Hollywood directors with the instructions build lifestyle commercials that can appeal to the baby boomers with experiences that they can relate to. And we want you to do them as 60-second movies.

So Apple, no excuse me, Pepsi was the first company to do lifestyle marketing and that was called Pepsi Generation. So, the Pepsi Challenge was very much built on the same principles of experience marketing. In this case, we started out in markets where Pepsi was outsold as much as 9:1. I think the first market we started the Pepsi Challenge in was San Antonio, Texas. And nobody ever thought about even trying a Pepsi-Cola. They though Pepsi was something that shouldn't even be on the planet. I mean these were die-hard Coke drinkers who drank Coke for breakfast, for lunch, for dinner. And so we came up with this campaign called Pepsi Challenge, which basically said let's run a blind taste test and we, of course, had done taste tests on our own to find out how Pepsi compared to Coke, and actually on blind taste tests Pepsi actually beat Coca-Cola, even among Coca-Cola drinkers. So we took that fact and we did blind taste tests which we filmed with handheld cameras. The complete reverse of what we did with Pepsi Generation with very high production values. We wanted this to feel very realistic. We were capturing the moment when real people were taking taste tests in shopping centers, and malls, and places. And then discovering that they picked Pepsi instead of Coke and yet they were lifetime Coke drinkers. And so we were capturing that experience. And so the message I was conveying to Steve Jobs was it's all about experience marketing. And Steve totally related to that. Because he said that's how I think about

computers. He said Macintosh is all about experience, it's all about the user experience. We're gonna deal with graphics, things that no one's ever thought before in user interface, and we're gonna make it incredibly approachable. And so, Steve and I were completely aligned in terms of what we were, what our roles were.

My role was to keep the Apple][successful and keep it generating cash and then help build the marketing campaign for not only Apple][, but help Steve and his team with the marketing campaign to launch the Macintosh. In the meantime, Steve was focused on creating the Macintosh and so, the alignment of roles worked perfectly. Where things broke down was in 1985, the Macintosh office was Steve's vision of what we later called desktop publishing. But the reality was that the technology just wasn't powerful enough, Moore's law, the microprocessor were just too slow to be able to handle the heavy duty graphic geometries that had to be manipulated in order to do what we know today as desktop publishing, and then later desktop presentations.

The Macintosh office was introduced at the 1985 annual meeting and it came out with a lot of fanfare, but when it got out into the market it was a complete dud. Even though we had a laser printer, called the LaserWriter, and even though the Mac graphics were beautiful and what you saw on the screen was what you could print out, the reality was the system just wasn't powerful enough to be practical for anybody. And so it got treated as a toy. It got highly criticized. And Steve became very discouraged and people stopped buying the Macintosh and the curiosity wore off. So the early excitement that everyone had around the creation of the 128K Mac quickly wore off with the Macintosh office.

As we moved out into March, the Macintosh sales were not doing well and Steve and I started to have major disagreements on what we should do about it. Steve wanted to lower the price of the Macintosh. And yet he still wanted to run substantial advertising behind the product. And he wanted to de-emphasize the Apple][. I said look Steve, we're a public company and we've set expectations in terms of our sales and our profits. The Mac just can't deliver what you want it to be able to do yet, we have to continue to focus on the Apple][, and we can't afford to lower the price on the Macintosh and still put advertising behind it.

So, that was a major disagreement between us. I said if you try to change that on your own, then I have no choice but to go to the board, and we need to bring this issue up with the board. And he didn't think I would do that. And I did. And so it was at the board level that, the board asked Mike Markkula, who was the third co-founder of Apple, was also vice-chairman of Apple, to go off and interview executives inside of Apple, all the key people, anybody he wanted to, and find out was John right or was Steve right.

Mike Markkula did that, took him about 10 days to conduct this project. He came back, reported to the board, and his conclusion was that I was right. That the Macintosh just wasn't ready to do the kinds of things that Steve wanted to do in terms of publishing. The processor technology just wasn't there yet. He

agreed that we had to keep the focus on the Apple][, that we should leave the price alone if we wanted to continue to advertise the Macintosh at the level Steve wanted. So, Steve was very unhappy about that. The board asked him to step down from the role of leader of the Macintosh division. To be quite honest, I didn't appreciate coming out of corporate America, because remember people get moved around all the time in corporate America, I didn't appreciate what it meant to a founder, the creator of the Macintosh, to be asked to step down from the very division that he created to leave the very product that he believed was going to change the world.

So, I think because we came from such different experiences, mine from the East Coast in corporate America and Steve as a start up entrepreneur in Silicon Valley, I wasn't as sensitive as I wish I had been on that. On the other hand, there was no question in my mind either then or later on, that we had no choice but to follow the business strategy, which we did. We continued to focus on the Apple][until the technology became powerful enough, which it later did by the way in 1986, when we could launch what we then renamed desktop publishing and it became wildly successful. It was a question of timing as much as anything.

So Steve was never actually "fired" from Apple, but he was demoted from the role of leading the Macintosh division and then he went off on sabbatical and then he eventually resigned from the company and took a number of key executives and started NeXT Computing. And the board was outraged, the outside board members, that he would do that, because he promised them that he wasn't going to do that and then turned around and did it. So, that's the actual facts. I think Walter Issacson delved into that in his book and talked to many different people on the Apple board, and actually corroborated that story.

DG: Yes, so this lines up perfectly with the research I've done and what I've read and heard, especially recently in leading up to our interview. In fact, I had a web page up here where someone's making a comment so, real quickly I'll read it, "after reading Walter Issacson's book, to the conclusion the Jobs-Sculley relationship, Sculley was literally forced by the board to run the company with a stronger opposition to Jobs." So this really lines up with what you're saying. But that's everywhere, about you "fired" Steve Jobs, so I just thought I'd cover that. So we're not going to spend a lot more time talking about Steve Jobs, but I wanted to quote one other thing, because this for me personally, as a computer historian, and I went and saw the extended documentary of Robert S. Cringely, you know, where he took the interview with Steve Jobs, and of course there was the 1996 PBS documentary *Triumph of the Nerds,* that you were involved in, as well as Steve Jobs. Anyway, there's a famous quote from Steve Jobs, where he says "what can I say, I hired the wrong guy" and then he goes on and says a few other things. But then was really always stood out to me, that was 1996, just slightly later in that segment, Robert S. Cringely goes on to say, "ironically the years after Jobs left, were Apple's most profitable." So, just to reiterate, you didn't fire Steve Jobs and you didn't ruin Apple as perhaps some people may want to make you out, to think you did. So moving forward John…

JS: Look, can I just make an observation there?

DG: Sure. By all means.

JS: That when Steve left, I was a complete believer in all of Steve's brilliant ideas. Remember, we were totally aligned as partners. You couldn't have found two people who were, who trusted each other, enjoyed working with each other, could finish each other's sentences than Steve and I during the times when things were going well between us. So, the breakup between Steve and me was incredibly painful for me, but it was also one where during the rest of my tenure at Apple, even though I was not a technologist, never pretended to be a technologist, that I believed in his first principles. And those principles were that we had to have proprietary technology because Apple was constantly making the tradeoffs between hardware and software. Because we were always trying to do things that the technology was just a little too early to be able to do in software alone. Or in hardware alone. So the first Mac 128K, people said "well, gee, why don't you go license the operating system?" What most people don't realize, that it wasn't until Apple introduced System 7, System 7 was an operating system release, that we actually had our first real operating system.

That the early Mac had a lot of very, very talented people doing clever tricks offloading things into specialized blue chips to do hardware subroutines because you couldn't do those subroutines in software on the microprocessor. We had 400 calls in ROM that were stored there, that were subroutines that were already cached so that a developer could call on those subroutines without having to create something unique because those subroutines had been purposely designed to be able to work between the several different chips, not only the 68-thousand microprocessor, but also some of the support chips around it. Without having done all of those things, some in hardware, some in software, turning things on, turning things off, at exactly the right time so that you didn't waste processing power, without having done that you couldn't have had anything like desktop publishing in 1986 or 1987 or 1988. To put that into context, David, if you look at what Bill Gates was doing, 'cause Bill is brilliant just like Steve, and he wanted to change the world, he had an entirely different approach to it. Steve was about perfection. It was about art, and design, and systems. Bill was about land grab, and Bill was trying to introduce a version of what became later Windows back in 1985, Windows 1.0. He introduced Windows 2.0 I think around 1987 and he introduced Windows 3.0 around 1990. But it wasn't until we got to Windows 3.1 and the Intel 386 processor, which I think was around 1991, that you could actually say you could do the graphics in software independent of the microprocessor and all the little blue chips and the calls in ROM and such that Apple did. Why? Because of Moore's Law. And so, I strongly believed, even though I wasn't a computer engineer, that Apple should not license its technology, it should focus on building the absolute best products it could it should only do a few products at a time, and it should not compromise on anything, it should focus on user experience. And these weren't my ideas, these were all Steve's. So, during my tenure at Apple, we never changed any of those first principles Steve had. The reality was, I

didn't have the technical skills or the personal charisma to be able to lead Apple, technically, the way Steve could. So we had to parse that out to various individuals. It wasn't one person making every decision the way Steve did so successfully.

The reality was that when Steve left Apple and started NeXT, he took those same principles and used them again with NeXT. And NeXT was a beautiful product from an industrial design standpoint. You know, it was a black cube. It had an incredible, talented team working on the operating system and graphics and things of that sort. But the end result was that there were certain things he couldn't control. Just like he couldn't control for, back in 1985, the fact that microprocessors weren't powerful enough to do what later became desktop publishing. The Mac office failed. Steve could not control the fact that the things he was doing at NeXT were just too darned expensive. So he came out with a 10-thousand dollar computer focused at education, and the reality was nobody wanted to buy a 10-thousand dollar computer for education. So ironically, Steve applying those same principles, and sort of elevating it to try get even beyond Apple, failed.

The rest of the story is that Steve's work with NeXT, again Moore's Law, caught up to it. By the time he came back, I think in 1996 or 1997, the computers were powerful enough, the cost of technology had come down enough, that he was able to take all the work he did at NeXT, which failed in the late 1980s, and he was able to use that as the core for Apple's recovery.

The reason I was pushed out of Apple, and so you said I resigned from Apple, well, yeah I resigned. I resigned because the board forced me to step down as CEO and I was put in the titular role of chairman and basically without portfolio. Pretty much the way Steve had been given the role of chairman with no assignment. So that's OK, but when I left Apple, Apple dramatically changed its strategy. At the time I left, Apple was the number one selling personal computer in the world. Our competitor had been IBM PC, and I remember Jim Cannavino that was running that part of IBM called me up, remember this was before email, called me up and said "John, I just want to congratulate you and acknowledge that Macintosh has passed IBM PC as the largest selling personal computer in the world." And we had an 8.3 [percent] worldwide market share at that point. We were the most profitable personal computer company in the world. We were, by the way, the most profitable computer company in the world, because IBM was losing money, HP was making almost no money from computers, the were making it all from printers then, Dell barely existed at that point, Compaq was failing.

And so, the reality was that Apple for that last year that I was there was not only the largest selling personal computer in the world it was the most profitable computer company in the world. And yet there was a major disagreement inside of the management who believed that I was making the wrong decision not to license the Macintosh technology, and the reason I refused to do it was that we had run models and it always came out with the same result, that unless we could get to about 25-percent market share, and unless we were able to price our operating system at a higher price than Windows and unless we laid

off what could be between 70- and 80-percent of our workforce, there was no way we could make money as the license model for the reason that Bill Gates in his brilliance of pricing had purposely kept the license fees for Windows at about $11 a copy to OEMs. And he made all of his profits back on Microsoft Office.

If you remember that IBM had a competitor to Windows which was called OS2, and they actually spent about 4-billion dollars until they gave up and shut it down because they couldn't make any money competing against Microsoft because Bill kept the price of Windows so low. IBM didn't have an office suite comparable to the Microsoft Office and Apple wasn't in the software applications business in any significant way, and so we didn't have anything comparable to that. So my conclusion was there was just no way that Apple could do that without eventually bankrupting the company. So I refused to do it. And I was pushed out. The management didn't support me, and the board didn't support me.

In those intervening years after I left, Apple went in an entirely different direction. It started to license its technology. It started to build many, many different versions of Mac. Steve always believed you should only be building one or two products at a time, with no compromises and that's what we did during my ten years at Apple. When I left, Apple started putting out model after model of products from itself. It lost its high standards of industrial design. It advertising deteriorated from the high standards that had been during the time that Steve and I worked together. It licensed other companies that came out and built their versions of compatible Macintoshes, and the whole thing was a disaster. So the next CEO was replaced by another CEO and then eventually, as you know, Steve came back and rescued the company. But a lot of people, just like there's this myth that I fired Steve Jobs, there's this myth that I ran the company into the ground and Steve came back and rescued it. But there was about four-and-a-half years between the time that I was pushed out and Steve was brought back.

DG: Yeah, exactly. And I remember. I was kind of there. Not at Apple obviously, but I was one of the customers, and actually I used to be an Apple technician, I actually worked for Kodak. But where I'm from, Jacksonville, Florida, if you had a Macintosh under warranty, I'm the guy that came to you for like a 200-mile radius around Jacksonville, Florida. In fact, I worked there, or did that, for those kinda dark years, I think starting in '95 or so, or '94 maybe, anyway, and I'd have four or five calls a day and then I finally got laid off when it went down to like one and two calls and none on somedays during those performa times. So, yeah, I remember. And so, yeah, you hit it on the head. It's also fallacy too, or another misconception, that, I don't know, they just all lump it on you. You made all that happen I guess, before Gil Amelio, and ultimately Steve Jobs, came back.

JS: You know, one of the things that happened in my tenure, was that in 1985, Alan Kay, who was an Apple fellow, and Alan was credited as the creator of the Dynabook, which was a conceptual concept of a personal computer, back in the days of DARPA creating the Internet and Xerox PARC just beginning to think about what could computing be like. The Dynabook was an inspiration for many things that

happened 10-15 years later. But Alan was also the inventor of the first object-oriented programming language, called SmallTalk. And Alan came to me, and he said John the next time we're not going to have Xerox. And I said, what are you talking about. And he said, well, you know Apple doesn't really invent anything. What Apple does, it's skillful at borrowing other people's inventions and then Steve's brilliance is being the impresario and knowing how to put the pieces together to create incredible systems. Steve is a systems designer. He actually doesn't even, he's not a, not even an engineer. But he's a brilliant systems designer. This next time we don't have Xerox to go an poach the ideas from. So I said, Alan what are we gonna do? Alan was then starting to become my mentor, because I didn't have the technical background to lead a technology company based on my experience. So I looked to Alan to sort of give me guidance much like a don does in say Oxford or Cambridge.

The don's role is to lead you to the good stuff. So Alan kept giving me books to read and we spent time with long discussions of things and one time he came to me and he said, "you know, it takes about 20 years for any idea, no matter how simple or how complex, to be able to percolate its way through all the different stages before it eventually becomes commercially successful." I thought about that, and came back to him and said "well if that's true, that means that things that are gonna happen 5 or 10 years from now are actually already out there percolating at some stage of this developmental process." He said, "yeah, that's true." I said, "well if we don't have Xerox, why don't we go around, and why don't you be my guide and start showing me what are the things we should be paying attention to that may not be in just one place, but may be happening in many different places that could be important to us in the next era of computing."

And so we did that over a period of over probably the better part of a year. And we went to major university laboratories and we went to other companies who would show us stuff. It was really quite exciting. At the end of that process, in 1987, I wrote a book called Odyssey, and I wanted to write about that particular adventure, because to me that was really, for someone who is sort of innately curious, that was the most interesting experience that I had at Apple post-Steve Jobs. So I had taken many of these things that Apple that Alan Kay had been my guide and had helped crystallize the thinking and we assembled it into something. And then, because I'm a marketing guy, we had to name it and package it. So I called it the Knowledge Navigator.

DG: Okay…

JS: The Knowledge Navigator was built on many of the things that we know today, we just take for granted, but were revolutionary back in that era. Again, I didn't invent any of these ideas. These are things that Alan pointed the way, that we together discussed, and I helped package the story. And then out of that, I had gotten to know George Lucas back in the 1980s, and I said, gee, I wonder if it's possible to take the Knowledge Navigator (and it's in the addendum of my book Odyssey, it tells the whole story of Knowledge Navigator) I wonder if we could build a simulation of it, even if you can't actually build a

computer, can we use special effects to get people a visual concept of what computing is going to be like 20 years from now. So, George said absolutely. He said that can all be done with illusion and special effects. So, we took a couple of key executives at Apple, and Hugh Dubberley, who later went on to be one of the early guys at Google, and Doris Mitsch, and Alan Kay's wife, Bonnie MacBird, and myself, and we went and we created a video of what the Knowledge Navigator would look like.

DG: Legendary now, the video.

JS: And I think it's **still available on YouTube**, so I'm told.

DG: Oh yeah.

JS: So in any event, this was now 1988 or '89, I don't remember the exact year, and so when we first showed it, I used it, because remember I'm a marketing person, not a computer engineer, I would use it at conferences and I would go around to conferences like Educom because Apple was big in higher education, and we would show this as here's where computing is going. People got all excited about it. It became very controversial. There was actually a symposium at Stanford University, I wasn't invited to it, because they didn't think I was technical enough to be invited to it, but they had one group that felt the Knowledge Navigator, it was all about the Knowledge Navigator, there was one group of engineers that said the future is about anthropomorphic agents, you can see that today in Siri on the iPhone 4S, which will be like your little personal assistant. And another group said no, it's not, the future isn't going to be like that at all, it's going to be like the movie Aliens that Sigourney Weaver was in where she put on this prosthetic sort of….

DG: Exoskeleton

JS: … extension of herself, and so the computer is really not going to have a little character agent inside it, it's going to be an extension, much the way Aliens had the extension of the prosthesis for Sigourney Weaver. And so there was this big debate over it. And the Knowledge Navigator was something that I showed it all over the world. I even showed it in Russia with Andrei Sakharov, Evgeny Velikhov, and some others in a symposium we had on television for two hours, when the Soviet Union was collapsing. At that time Gorbachev wanted to inspire people of what the world could be like in Russia in the future as freedom became possible and people could express their own ideas and things like that. So the Knowledge Navigator became one of those iconic symbols on Russian television. So I always believed, as I was involved in anything to do with future decisions for Apple, that the Knowledge Navigator was probably the best representation that we could use as a reference point as to where it was all headed.

END OF PART ONE