Oral History of Brad Silverberg

Interviewed by **Becky Monk** for the Microsoft Alumni Network

September 12, 2024

Preface

The following oral history is the result of a recorded interview with Brad Silverberg as conducted by Becky Monk on September 12, 2024, at Microsoft Studios in Redmond, Washington. This interview is part of the Microsoft Alumni Network's Microsoft Alumni Voices initiative. The goal of this project is to record the institutional history of Microsoft through the recollections of its former employees, so that the information may inform and inspire future generations. Readers are asked to bear in mind that they are reading a transcript of the spoken word captured through video rather than written prose. The content reflects the recollections of the interviewee. The following transcript was edited by the Microsoft Alumni Network, which holds the copyright to this work.

Interview

Becky Monk: Brad, I'm excited to chat with you today. So let's start with who you are and when you worked at Microsoft.

Brad Silverberg: My name is Brad Silverberg. I joined Microsoft in 1990 right after Windows 3.0 launched. I had actually accepted the offer a little bit before that, a few months before that, but they kept me on the shelf on the side until the product was actually announced, and so I joined in 1990 as Windows 3.0 was launched and as people know, Windows 3.0 was a big success and really an unexpected success. A company strategy at the time had been OS/2, Windows was really plan B and the company was surprised by just the wonderful enthusiastic reception that Windows 3.0 had in the market. I worked on, was head of the Windows team, as well as the MS-DOS team.

We introduced MS-DOS 5.0 later, Windows 3.1, Windows for Workgroups 3.11, then Windows 95, which is what I think I'm best known for, Windows 95 in 1995.

After that, we had two different OS groups before that, after Windows 95 was shipped, we combined those two groups. I went on to focus on the internet activities. I had also been leading the Internet Explorer effort and a couple other internet efforts while I was leading the Windows team. So then I focused primarily on internet related things, including Internet Explorer. I was in charge of the Developer Tools division, Office for a while, then I went on sabbatical in 1997. I went on a bicycle trip through the northwest and the Canadian Rockies and I never came back full-time. I ended up then working part-time primarily for Bill and Steve, a little bit for Ayase consulting with some internal activities until I finally left the company in 1999. I would say they were extraordinary years. I have incredible memories. They were, as far as I'm concerned, the golden years of Microsoft, the 1990s. We changed the world during those years and it was really a highlight of my life to be part of those years, to be lucky enough to work with some truly extraordinary people throughout the company to build products that change the world.

Becky Monk: Fantastic, fantastic. We know. Alright, I want to go back to the very beginning for you. Where were you born?

Brad Silverberg: I was born in Cleveland, Ohio, and very proud of being born in Cleveland. It was a great place to grow up. I graduated high school in 1972, went to college on the east coast at Brown University, graduated in 1976 and Cleveland was really a great place for a kid to grow up. They were tough years for Cleveland. My growing up years, to be honest. In the early mid-1950s, Cleveland was one of

the leading cities in the country. I think it was the seventh or eighth city by population in the country and next to New York City there were more Fortune 500 corporate headquarters in Cleveland. It was an industrial town, steel manufacturing, automobile manufacturing, very strong working class, blue collar values. But then Cleveland went through years of decline as the industrial Midwest went through decline. We had, never forget, the Cuyahoga River was burning.

That's how polluted it was. Cleveland was kind of a laughing stock in some ways for many people, but what people don't realize is what a great place it was to grow up. The people were good, solid people with good Midwestern values. We had a beautiful park system and I still go back there frequently. My sister lives there, my niece and her kids live there and areas like Shaker Heights or some of the other park areas are truly beautiful. The city has gone through a renaissance over the last decade or two. You go downtown now, it's full of life and been rebuilt and I think it had a lot to do with shaping who I am, the values of hard work and commitment and seeing industrial America and the consequence of not keeping up and some of that aspect stuck with me and really shaped who I am.

Becky Monk: Tell me about your family.

Brad Silverberg: My family. My family, my father was a physician. He was an obstetrician gynecologist. Both my parents were from Canada, from Toronto, Toronto area. They grew up there. My father back, Toronto is a huge city right now, but back in the ‘50s, Cleveland was a big city and Toronto was a little backwater in Ontario. So my father

moved to Cleveland to start his practice and we grew up there. I have a sister who's three years younger. My mom was a social worker, she was trained as a social worker in college and when I was in elementary school, my mom went back to school to get her master's degree and restart her career and she ran a consulting, inpatient consulting home for troubled kids in Cleveland area. She had a very accomplished career herself, but she was really a trailblazer in that regard. Back then most mothers, wives didn't work.

They were just housewives, which is great, but my mom was really a very smart and driven person and went back to school. We were all very proud of her when she got her degree and then went to work for the firm, a place that she originally worked with before she had kids and then she ended up becoming director of it and we were all very, very proud of her and in many ways she was my role model. My father, great guy, but he worked really hard. He was in sole practice as an obstetrician gynecologist, which meant he was always on call 24/7, 365. We very rarely took vacations and when we did, we would go to Toronto to visit family and so the closest bonds I had were with my mom who I admired tremendously and I miss them both.

Becky Monk: I know your mom's going to have play a big role later on in your Microsoft story. So what kind of a kid were you growing up?

Brad Silverberg: I was a nerd. I was awkward, a little bit introverted. I think I was pretty smart and I kind of stood out in school for my academic achievements, but it was like growing up in the '60s, we had a lot of freedom. We had our bikes, everybody rode around, we played

football or baseball or got in a little trouble or whatever. After school you just went off and did whatever you wanted as long as you were home by dinnertime and then parents didn't drive you around or it wasn't these kind of structured activities. It was just catching frogs and playing around, goofing around with your friends. I was pretty, I had a lot of friends. We laughed a lot. We had a lot of crazy stories. We still talk to each other through Facebook. I still am friends with kids that I went to kindergarten, elementary school with and there's kind of a bond that you have with kids that were through your formative years and in fact a few of them ended up working in Microsoft.

And so we have some fun stories to tell about both growing up in the Cleveland suburbs as well as what it was like working at Microsoft and still living in the Seattle area. But like I said, they were tough years for Cleveland. Burning river, the city went bankrupt, and we had race riots. There was a lot of racial tension in Cleveland. There was a lot of division amongst ethnic groups. It was like if you knew what area somebody lived in, you knew about their background. There wasn't a lot of integration in those days back then. So I knew when I graduated high school I wasn't going to be moving back to Cleveland. Cleveland had served me well and it was ready to go on to a new stage, a new part of my life. I went through public schools, which was, I think was great. I had a great experience because the kids I went to school with were all kids that I lived next to and lived nearby and we shared a lot of great experiences. Going off to college was really a huge change in my life.

Becky Monk: Yeah, so you went off to Brown?

Brad Silverberg: Yeah, I went to college at Brown University in Providence, Rhode Island. And it was interesting because I went to college thinking that I would be a lawyer. I was planning to major in Political Science or European History and one of the reasons I chose Brown as a university to go to was they had a special curriculum where there were no distribution requirements, there were no required courses, general courses that you had to take. You could take whatever you wanted to take and then you chose a major and you would have to take the recording courses for that major. And I thought, okay, I'm going to, although I was very good in math in high school, I thought what would I ever do with math as a career? So when I went to Brown, I thought, well, I don't ever have to take any more math science classes.

I could just take these political science classes, I could take language classes. I was very interested in languages and so that was my plan getting there and it opened my eyes to a whole new world. There were kids from all over the country, kids from public schools, kids from private schools, kids from more modest backgrounds, kids from very wealthy backgrounds, and it just completely opened my eyes to a different way of life, a different level of intellectual challenge and possibilities of a much bigger, bigger world. And the East Coast, you feel that energy. As it turns out, so, freshman year I signed up for my political science class, history class, German class, and then I needed a fourth class to fill out my schedule and for some still unknown reason to me, I decided to take a computer science class. In fact, I was standing in the registrar's line we had back then it was all done physically, and I was signing up for Linguistics 101 as my fourth course and I looked over the shoulder of the person in front of me and saw he was signing up for AM51. I didn't even know what department AM stood for. So pull out, we had this big course catalog that flip it open and read for the various departments, the class descriptions, and it was Applied

Mathematics 51, Introduction to Computer Languages. Well, I didn't know there was an Applied Mathematics department and had no exposure to computers at all in high school. This was 1972.

I had no concept of, what does it mean for a computer language? I have no idea what that meant, but I knew I loved languages. I was studying German, I was going to sign up for Linguistics 101. I love languages. So I was curious. It really struck my curiosity, geez, what does this mean? So I crossed off Linguistics 101, I wrote in AM51 and I said, okay, I'll give it a try. And the school curriculum encouraged people to take chances, to expand their horizons and take risks. Freshman year I took all my courses pass fail, so I didn't worry, well, if I don't do well on this, am I going to screw up my chances for getting into a good law school. I could just explore new intellectual horizons. I thought, okay, I'm curious. I'm a very curious person. I thought I'll give it a try.

And the first couple weeks I really struggled. The first month or two I really struggled. I just didn't get, I was really frustrated. But then one Saturday night just, I don't know, it was like this lightning bolt and I'm like, it hit me and I had these insights on how to program a computer that had escaped me for those previous two months and I was, I was hooked. I was hooked and I loved it. I spent all my time on my computer class and I just loved it. And I had decided at the end of the first semester I would take the following course and I loved that even more like, oh man, it just spoke to me. It gave me intellectual output, outlet that I hadn't had before. I found I was good at it, but I felt guilty because why am I spending all my time on this computer stuff?

What would I ever do with computers? Why am I spending all my time on this instead of—my parents sent me to school to study history and be a lawyer or something, but I decided this is college, I'm going to follow my heart. I'm going to follow what thrills me the most, that inspires me the most, motivates me the most. I find that I was good at and let fate take its course and see where that leads. So then second semester I took the core course in computer science and back then there wasn't even a Computer Science Department. It was part of the Applied Mathematics Department and there were only, the year I graduated, there were only eight or 10 people who majored in computer science. The computer science concentration within the Applied Mathematics Department. So there was a course first semester, second year that was notorious for how difficult it was.

It was the course that was meant to weed out people who wanted to major in computer science and I loved it even more. And I decided, okay, I talked to my previous advisor and told him that I was switching majors to Computer Science and had to take a bunch of remedial math classes, which I loved, to catch up, but at that point I knew that I was going to make computers my career where it would lead I had no idea because back then it still wasn't a very big business. Computers were primarily used like in banking or companies like IBM, big corporations or a defense, and I knew that's not what I wanted to work on. This was the ‘70s. It was like the idea of working for IBM or defense contractor during the Vietnam War was not really my idea where I wanted my career to go, but I knew I loved computers.

So when I graduated, I did what most, a lot of students did who really didn't know what they wanted to do. They went to grad school, just kind of kicked the can down the road a little bit and

stayed in school a little longer and I went to University of Toronto to get a master's degree and I loved it even more. My advisor wanted me to continue on to PhD, but at that point, I think I had enough school and this was as personal computers were really starting to take off and the great work that was going on in Silicon Valley, particularly at Xerox PARC (Palo Alto Research Center), I was reading all those papers, I was so excited about that vision of the future in computing that I didn't want to stay in academia anymore and I moved out west to Silicon Valley to start my career on the west coast.

Becky Monk: So when you landed in California, what was that first job?

Brad Silverberg: When I came to California, well back up a little bit. The previous two summers ago, I had gone on a cross-country trip, a driving trip with my girlfriend at the time from college. This was the year after I graduated, summer after I graduated college. Until then, I had never been west of Detroit. I'd never really seen the United States. So we got on a car trip and then we got to the west coast. I spent time in California, Oregon, Washington, British Columbia, and my mind was blown like, wow, I mean, this is where I want to be. I knew on that trip that I was going to live on the West Coast. It was going back to the East Coast, go back to the Cleveland area, like no, the West was so vast. It was so full of opportunities, so full of optimism, so full of potential that somebody could go out and create a career from without having all these structures in place that governed you. It was the land of opportunity.

So when I finished my master's, I knew I wanted to get a job on the West Coast. My No. 1 choice was to get a job at Xerox. I didn't get the job. I was crushed. In retrospect, they made the right decision. I was not ready. I didn't have the technical skills at that point that

they needed. I didn't have the temperament that they needed. I was still little raw. And as crushed as I was, they made the right decision. My second choice was a job at Stanford Research Institute in Menlo Park just down the road from Xerox in Palo Alto. And to me it was a bit of a halfway house, if you will, between industry and academia. It was a research organization, but it was not part of a university so you could get a taste of industry while still being able to do research.

And I had a number of colleagues who worked at Xerox. I continued to stay in touch and current with what they were doing, and I was in heaven. Being in Silicon Valley for a person like myself, kind of a nerd, in the late ‘70swith all the work that was going on, had Xerox and then Apple, starting with the Apple I, the Apple II, the level of innovation and experimentation, excitement. I was incredibly lucky to be at the right place at the right time in history. I mean, I couldn't have felt any luckier and I felt like I'm with my people now. These are my people and I was just, there was electronic store called Fry's that originally started out as a grocery store, but then they started carrying computer supplies, both hardware and software, and they had a mixture, and they had a slogan, "The one-stop-shop for the Silicon Valley professional; where you can buy your chips and your dips".

Well, there's a pun on both of those. Chips is obvious, but dips also means Dual Inline Package, which is what chips, computer chips get mounted in on circuit boards and you would hang out there and it was incredible. Intel was going crazy and all these semiconductor companies and people were building interesting computers based on the Xerox model of computing, and I was just in heaven. I mean, I'll never forget one Sunday afternoon, which was a Sunday, Super Bowl Sunday. Now most cities around the country, Super Bowl

Sunday means everybody's at home watching the Super Bowl on TV. I went to Fry's and there was, the place was packed. People there were all just totally into technology and these were my people and I found my tribe and I was totally in love. Eventually I got tired of being in the research environment and I really wanted to be part of a company building next generation product. So I joined Apple.

Becky Monk: And you were at Apple at the beginning. You were there with Lisa.

Brad Silverberg: I was at Apple on the Lisa Project. To me, the ideal of Lisa was taking that Xerox type technology and bringing it to a broader audience, and to people who were buying Apple computers and taking it to a consumer product instead of something that was just in a lab as Xerox was. There were a lot of great ideas behind Lisa and I think it was very ambitious project, explored a lot of tremendous ideas about graphical user interfaces and graphical applications, so on. The project itself wasn't particularly well run and it failed, failed pretty badly. I was an individual contributor at the time writing code initially on Lisa Write, the word processor. My boss, Tom Loy had worked with Charles Simonyi at Xerox Park on the initial, the first WYSIWYG word processor called Bravo, and so Tommy came over to Apple. I worked on Tommy's team and he was a great inspiration to me.

There were incredibly smart people on that team. Bill Atkinson, who's a legend who from Macintosh, and probably one of the greatest programmers who ever lived, got to work with him, Steve Capps and so on, Wayne Rosing, so many people, but the project, for whatever reason, didn't come together and it was interesting to me because I was an individual contributor and I saw decisions that

were being made in a way that really struck me as that's the way we should be doing it. But like, hey, what do I know? I'm just a punk individual contributor at the beginning of my career. What do I know? These are seasoned experts. I listen to them. Well, but then when things kind of turned out the way I thought they would turn out, and it turned out, it was originally supposed to be a $2,500 machine, ended up being a $10,000 machine. It was supposed to originally be floppy only. It required a five-megabyte hard drive, was supposed to be 256K RAM, required a megabyte of RAM.

The whole thing didn't come together very well, so I left after the product was done, but before it was available. Because I could see it was going to be a big failure in the market. There was the Macintosh Group that was going on in parallel that Steve Jobs was leading and Steve did not care for the Lisa team very much. There was a fair amount of antipathy between him and the Lisa team, and I knew that once Lisa was released and it would fail, it was going to be a blood bath, and it was. I'm glad I was out of there because it was pretty rough. Steve had already handpicked what he felt were the best people from the Lisa team to move over to the Mac team and what was left, there wasn't much left after Steve was done, so I'd left. I joined a startup in Silicon Valley in 1982, and it was fun. We did some great work, but we were a little bit ahead of our time. Product didn't really take off. We got acquired by a company called Borland in Scotts Valley, which is a little bit south of Silicon Valley, just north of Santa Cruz. And we had a great time. We had an amazing group of developers at Borland and we had spunk, we had swagger. We loved our customers.

We were probably best known for our programming languages. Turbo Pascal, a lot of people learned to program with Turbo Pascal, Turbo C and Quattro Pro, a spreadsheet. The camaraderie, the

teamwork, the sense that we have all working together at Boland, we felt we were like the elite and we competed with Microsoft. We tend to win a lot of awards against Microsoft and languages group. I know we got under Bill and Steve's skin at Microsoft and we enjoyed that. We were still the little guy. They were the big behemoth, but I wouldn't necessarily say it was friendly competition, but at times it was, but it got...

Becky Monk: Well talk a little bit about that because as people are reading this, talk a little bit about the industry because there was Borland, there was Microsoft, but what was that competition like in the industry?

Brad Silverberg: Yeah, it was a time, it was still primarily PC based. So when did the PC come out? Somewhere around 1983. I think it was before the Mac. I think the original PC, so most development went to the PC. There was the Mac. The Mac itself was a flop initially commercially, there were an incredible number of great ideas and very inspiring design, but the hardware wasn't really up to the task. There were also some really, I think, bad decisions that were made that crippled the product when it first hit the market and it didn't sell very well. It was pretty much a disaster commercially until they were able to increase the memory size. What was called in the original one was only 128K RAM, which something like 30K was taken away for the frame bumper for the screen display. So it was very, very little RAM available to write applications, which meant people had to write their applications in assembly language, which was very difficult.

It wasn't until the Fat Mac came out, which was 512K, which gave a little bit more room to be able to write more powerful applications be easier to develop for it, that the Mac got much traction commercially, but still it was the bulk of the business was IBM PC and then there was WordStar and WordPerfect and Lotus 1-2-3 and

Microsoft Word and MultiPlan and all those initial, and it was really greenfield opportunity for everybody. We all could see the potential and power of the PC and as these new application areas were opening up, it was exciting. There was a tremendous amount of innovation and competition, and it was really, really fun to be part of that environment. It really felt like, to me, being in Silicon Valley then felt world historic. I mean, I really felt like this was something akin to a new industrial revolution.

This was not just incrementing whatever the previous technology was that we were working. We were on the frontier of a technology and economic impact that was going to change the world in fundamental ways like the industrial revolution did. And then coupled out with connectivity that Xerox invented with the ethernet to be able to network computers together and be able to do distributed computing. I mean, it was such an intoxicating vision for me, and I felt, going back to my training as a historian, it felt to me like we were in the French Revolution, that we were tearing down the old state and we were building a new modern democratic state with all kinds of new opportunity. I really did feel like we were, this was a world historic opportunity and I want to take full advantage of it.

Becky Monk: That's incredible that you had the wherewithal during that time to see that and think at it. You were at Borland, you were kicking Microsoft's butt. You were in Silicon Valley where you were loving life. Who came calling? How did you get lured away?

Brad Silverberg: I did love living in Silicon Valley. I lived in Saratoga, which is the southern end of Silicon Valley. It's near just below Cupertino, just

before Los Gatos. The heart of Silicon Valley back then was for software was Palo Alto, Mountain View, Mid-Peninsula. San Jose was where the hardcore hardware companies were. Semiconductor disc drive manufacturers. That was the hardcore hardware companies were down in the San Jose area. San Francisco as it is today, was not really part of Silicon Valley. San Francisco was really financial district, a blue collar town, very different from what it is today. I commuted from Saratoga over the hill to Scotts Valley every day. I loved being in Scotts Valley. It was close to Santa Cruz. I could go to the ocean at lunch.

I had a lot of people calling to go work on this or that, and there were companies who were building workstations, personal computer workstations with map displays and mice and graphical user interfaces and all that kind of stuff. Interviewed with a number of them, got tempted, but I truly loved the people that I was working with at Borland and CEO of Borland, Philippe Kahn, flamboyant Frenchman, super fun guy to be with. We had a great team. But there were some things at Borland that I didn't care for, namely, we went, we had, I think an A+ development team, but I think our business management was not very good. We didn't have much financial management or business planning. It was really driven by Philippe's whims here or there. And so we went through a lot of boom bust cycles. We'd do well, we, Philippe would start up a bunch of projects, we'd hire too many people. Business would soften, then we'd have to cut projects and lay off people, and I was head of R&D, and that was hard. That was really hard to lay off a substantial part of our workforce. People who were good people and you have to go to them and say, I'm sorry, we're eliminating your job.

That really took a toll on me. I didn't like that. Microsoft came calling in 1989, early 89, and I met with Bill. I met with Steve. I got to know the company. They made me an offer. And in the end, I didn't take it. I was still too committed to my team at Borland. They depended on me to provide some stability throughout the chaos that sometimes Philippe created. I wasn't quite ready to say goodbye, and there was a mental leap of faith I had to make to come to Microsoft. The rivalry sometimes was pretty tough. So the sense of leaving Boland to go to Microsoft, it's not leaving Boland to go to another company. It was like defecting. It was like taking a MiG-21 and flying to Poland or flying... It was defection and Philippe would regard it as such. So I had an offer and I spoke with Philippe that summer and told him I was thinking of leaving, here are some things that I really would like to see changed in the company, and he convinced me to stay, committed that he'd make those changes. And so I turned Microsoft down.

But then as so often happens in organizations, those commitments, once I stayed, those commitments kind of went by the wayside and nothing really changed. And in fact, they probably got worse. And then the famous earthquake hit, the 1989 Loma Prieta Earthquake hit, I think that was October 17th, 5:04 p.m. We were in the process of cutting the master discs for Quattro Pro when the earthquake hit and the building shook and nearly collapsed, and it was probably the most terrified I was in my life. And things continued to kind of not go the direction I wanted at Borland. So that November, I picked up the phone, I called, I sent Bill an email knowing that, okay, this time, if there's an offer that I'm willing to take, I got to say yes this time I can't fool around anymore. So Bill offered me the opportunity. The previous job was in the applications group.

This job was going to be leading the MS-DOS and Windows Group. Now, I had been a beta tester of Windows 3.0 while I was at Borland, we were also a user of OS/2 at Borland. I didn't think much of OS/2. My team at Borland didn't really think much of OS/2. It was command line oriented. It was corporate oriented. It didn't really have much soul. It just wasn't very exciting. We didn't really see much opportunity for writing applications, for OS/2, we didn't. But Windows 3.0 I thought, huh, this one's got a chance. I thought this one could be exciting. This one could be the one that breaks through. I mean, the Mac took the idea of graphical user interface, took it to market, but it was still a very limited market. And then by design, they didn't really go after a mass market.

They were going after a much narrower slice of the market, higher margin to a much more say, cultural elite type user. Whereas Microsoft really targeted a very mass market, and I wanted to bring graphical computing, that model of computing to the mass market to everyday people all over the world. And so when Bill gave me the opportunity to be in charge of Windows, I said yes. And it took me a few months to negotiate the terms, and then I was ready to say, and then I couldn't really start because Windows 3.0 was about to be released, and Bill understandably didn't want to announce a new leader while we're going through the launch for the existing product. That wouldn't be very good and be very destabilizing, so I stayed in the background for a couple months, and I also needed to wait. Philippe was French.

He was spending a month in France, the month of March, and I needed to, this was a conversation I needed to have with him face-to-face. I couldn't do it over email. I couldn't do it over the phone. I didn't really want to fly to France. So I waited until he came back, told him I was leaving the company. He then asked me, are you

going to Microsoft? I go, "Yeah," he got the guards and I was escorted out of the building within five minutes, shut down all my email accounts, he prohibited the team from having a going away party for me. He's told people that if you have a going away party, you're going to lose your, you're going to get fired. So it was a painful situation to leave behind my close friends, but it all worked out. I loved coming to Microsoft. As it turns out, those next couple of years of Borland were, they continued to decline, they made a terrible mistake in buying a company called Ashton-Tate, which was known for a database product called dBASE. Borland, we had a product called Paradox, which was the first PC SQL based database.

Ashton-Tate was on the decline, we were winning, but for whatever reason, Philippe decided to buy Ashton-Tate, which accelerated the downfall. And as a result, Microsoft was a huge winner because we hired a lot of people from Borland to come to Microsoft. Now, I never solicited any of them, but I stayed in touch with my friends, and as I knew people were thinking of leaving, I wanted them to feel free that they could call me and then initiate the contact to be able to come to Microsoft. We hired Anders Hejlsberg, we hired Paul Rose, we hired Peter Kukol. We hired a lot of really tremendous talent from Borland. Anders is still here. He's still working full-time. The contributions that Anders has made are obviously legendary.

Becky Monk: When we were talking to him, he and several others have said, oh yeah, and then I was at Borland, and then I talked to Brad and came to Microsoft,

Brad Silverberg: And it's just like when I came, it pulled the plug, and all these people had a desire to come to Microsoft. And one of the big

reasons I came to Microsoft was, I mean, obviously Bill and Steve world-class smart. I mean, you can't be anything but just completely blown away by how smart they are. The hard questions they ask and their strategic sense. I mean, they're some of the best who've ever lived. But beyond that, as I got to meet and know Jon Shirley, Mike Maples, and Frank Gaudette what I saw was this was a rock-solid business that they ran a tight discipline ship that I was just blown away by. Every conversation I had with Jon Shirley, in fact, I'd probably say Jon Shirley and Mike Maples were more influential in getting me to come to Microsoft than even Bill and Steve were. It's probably not a hundred percent true, but close. They had an incredible impact on me that this was a well-run company.

It was going to be around for decades to come. Coming from Borland where it was pretty sloppily run, and we never knew quarter-to-quarter, year-to-year what was going to happen. So that stability that Jon and Frank and the people in operations provided, they allowed us in development to really innovate and go for it and not have to worry about how the company's running. We're going to go through these boom bust cycles. We're going to be well-funded. We never needed to go get venture capital. It allowed us to fund launches like Windows 95, which weren't cheap because the company was so well run.

Becky Monk: Okay, so you've been hired, Windows 3.0 was just launched. Now you're in charge of Windows and MS-DOS. What were the first marching orders that you had for the new group? What was the goal?

Brad Silverberg: When I first started on the Windows and MS-DOS team, I was really lucky. A product had just been launched May 22, Radio City Music Hall in New York. It was extremely well received in the market. There was a tremendous amount of interest. The first objective was to be able to continue to maintain that momentum. Once you get momentum, it's easy to lose it. And there were a bunch of issues that came up with Windows 3.0. It was a little bit raw, being able to get it installed, work with devices, be able to deploy it within departments in companies. We needed to implement a number of support programs to be able to give people the help that they needed to be able to successfully deploy and use Windows 3.0. We developed something called the Champions Program. We developed something called the Windows Resource Kit, a big document, a book to help people deploy and have successful Windows experiences because our view was we also needed to work with developers to help them develop Windows applications.

That was clear that Windows was going to be a big market, so that that was a tremendous amount of interest in third-party developers to write applications for Windows so we need to give them all the documentation and help, support, direct access to development team to get their questions answered. Our view was we needed to do whatever we possibly could to help our users be successful users, whether they be end users or IT managers or OEMs or software, independent software developers. We had to go above and beyond to help them be successful. Because we knew that our success would be a byproduct of them being successful, and if they were successful, then we would have good word of mouth. They would then feel comfortable about investing their careers or their investments. For a department manager to say, "We're going to use Windows," if that doesn't go well, he puts his career at risk.

If it goes well, then things go great. So we devoted a tremendous amount of resources to being able to support the product as well as listening to what the issues were so that we could develop a 3.1, which addressed from a product standpoint, a number of the shortcomings and failures Windows 3.0 had. And we knew we needed to get 3.1 to the market pretty quickly because there were a significant number of bugs. We had explored new territory technically with Windows 3.0, and there was such a diverse set of devices and applications out there that there was no way using the previous approaches to testing that we had been able to do a good enough job testing. So we did make some major improvements with stability, and performance, bug fixing, robustness for Windows 3.1. We understood that one of the major issues with Windows 3.0 stability was printer drivers. Device drivers in general, and printer drivers in particular were just, they were garbage and they were the cause of so many system crashes.

So, we took it upon ourselves to write a universal printer driver that could then with text files, be able to work with every other printer out there, including for the HP Laser printer, which was a huge challenge, but we were able to succeed in doing that. We had a true type font, so you could have scalable fonts. We got 3.0, so we wanted to get 3.1 out there and all the support programs out there. So, I think 3.0 was good enough for people to take attention of, take notice of, pay attention to consider, 3.1 was good enough that okay, now you could feel comfortable deploying it broadly. So we succeeded in that. Then the next step was to incorporate connectivity and networking natively at a fundamental level into Windows. And so we developed as the next step, because the goal was to get to Windows 95.

I wanted to get to Windows 95. 3.0 and 3.1 were still DOS based. I knew I wanted to get to an integrated operating system with graphical user interface completely built in, but I wanted to get there in steps, not just one big step. That was something I learned from the Lisa. They tried to go too far in one big step, and it was just a bridge too far. So I wanted to get there in smaller steps. First step was Windows 3.1 that was very well received and it was, we needed to create enough end user demand that was very important to us to create end user demand, whether it's individual consumers or whether it was individuals or department managers and companies to create the end user demand for the OEMs, because we wanted Windows 3.1 pre-installed on new computers. They were reluctant to do that.

They wanted to just ship DOS and then let the buyer install a new operating system. Well, the user experience obviously is way better if it's pre-installed. They were reluctant to do it, both because they'd have to pay us more money and a whole bunch of other reasons. But by creating enough end user demand and finding that if this OEM included, bundled a Windows 3.1 with the new machine and they were taking sales away from this OEM who wasn't, that was a very persuasive argument to get the OEMs to bundle 3.1. And we were very successful with that. With 3.0, we were not that successful, with 3.1, we were very successful. So now Windows 3.1 became part of a new machine that you bought. We wanted to get the next step with Windows 4 groups, incorporate connectivity, and we also with Windows 4 groups 3.11, we wanted to build the underlying platform, the underlying kernel for what was going to be in Windows 95, namely the 32-bit kernel with protect mode device drivers.

Now, back then in the MS-DOS days, we were operating in what was called real mode, which was limited memory space with the ability for every application to write all over memory and cause crashes, and that was a problem. And plus device drivers took a lot of memory and we were limited to 640K memory for everything, for the operating system, for device drivers, for applications. So if you wanted to load a device driver for say, TCP/IP to connect to the internet, they were big and it didn't allow for much application space. It was always this juggling with Windows 4 groups 3.11, we introduced the 32-bit device driver model. So device drivers now could live up in protect mode land and not take away from any of the memory that was needed for your application.

We wrote the file system, so we developed a new file system. We wanted to get some roadmap. Writing a file system from scratch is, it's a scary proposition because you're dealing with people's data. If you crash, you lose people's data. That's a problem. People are not very happy when you lose their data. So we wanted to get some road miles on the new file system. We wanted to get the underlying architecture for what we call Chicago in place of Windows 4 groups 3.11, and that was in 1993. Windows 3.1 was in, 3.1 was April of '92 and Windows 4 groups 3.11, and I think was November of '93, sometime in '93. At that point, then we could turn all our attention to building Windows 95.

Becky Monk: So let's stop there and talk about the entire company pivoted and really focused on Windows 95. What was the proposition when you were pitching what this product was going to be, what Chicago was going to end up being?

Brad Silverberg: We had a very expansive vision for Windows 95. We wanted it to be the operating system that brought the joy and power of personal computing to everybody. To people around the world of all different shapes and colors and backgrounds and professions, from moms and dads and kids and mechanics and spreadsheet jockeys and grandparents. We wanted this to be fulfilling that vision of a graphical operating system taken to the mass market that something everybody around the world could and would want to use, that they could be able to explore more, to do more, to be more productive, have more fun, do it more easily, more reliably, faster, but on mainstream, affordable everyday computers. Computers at that point had gotten relatively more affordable and relatively more powerful. As the 386, Intel 386, chip became popular, it opened up the door to technological innovation that had really been blocked before that.

And so now the mainstream computers that people were buying had the capability to be able to provide something dramatically more powerful, dramatically easier to use, and be an incredible tool that people would be able to use. We want PCs to be part of your everyday life, not just something that you went to the office to bang out spreadsheets or word processors or fill out forms in a database or something that techies came home with and built around computers and twiddled around and or played some computer games. We wanted it to be part of everyday life. That was the vision for Windows 95, and we felt that it was the right time because the technology had finally gotten to a point that we could provide that level of experience with mainstream computers. The ones that you just went down to Best Buy or whatever to buy. Didn't have to buy high-end PC. Be able to bring that experience, the joy, because we all loved computers. We felt tremendous joy using personal computers, especially in this new modern style. We

wanted to bring that joy to people around the world, and that was the goal.

Basically nobody else was doing it. We saw there was this incredible opportunity and we wanted to go for it. I mean, there was IBM building kind of corporate oriented stuff, wasn't very exciting. There was the Mac, which was interesting for what it did, but it was still very narrowly targeted. They didn't have that expansive vision that we had. There were other people trying to build graphical environments, but nobody had the expansive vision that we did. And that starts with Bill. I mean, Bill, a computer on every desktop running Microsoft software. I mean, it really started with Bill and Steve, and I think they bonded with the mission that we had, which was that expansive vision for Windows 95. And then it was also the transition to 32-bits. That we could then support 32-bit Windows applications so they could be much larger and be able to be much more accomplished in the types of problems and applications that they provided. So Windows 95 had the 32-bit API for Windows applications, which then allowed us to embrace that for Office 95 and MSN came out there, and really the whole company rallied around Windows 95s being the 10th pole to create that next generation.

Becky Monk: Okay.

Brad Silverberg: It was an inflection point. It was really, we saw that there could be an inflection point in the industry by the migration of 32-bits, graphical computing, connected computing available to the mass market, and we went for it.

Becky Monk: Yeah. Okay. So in order to get there, in order to get this product that everybody and their grandmothers would come and stand in line for you, had some pretty interesting ways of getting the folks motivated to do that. Talk a little bit about how you were able to get there.

Brad Silverberg: It was a big challenge, for sure, to be able to implement this really expansive vision. But we had a great team. It was a small team. It was really kind of shockingly small in today's numbers. I think the Windows 95 team was about 360 people. And that includes development tests, program management, product management, user ed, management overhead. It was a small team. We knew each other super well. I had great leaders with David Cole and John Ludwig, Brad Chase, other people throughout the organization like Ralph Lipe and Moshe Lichtman, David Treadwell and so on. People who rose, who shared this vision, shared this love for computing. We wanted to democratize computing and we wanted to take it global. We wanted to make it worldwide.

So, we spent a lot of time kind of talking about what we wanted to accomplish and getting, people were really excited and they kind of self-selected people who didn't really want to be part of that mission and wanted to work on some other things. Great. They go work on other team. So we had a team really of true believers who believed in the mission. And so we then took, I think a fairly innovative approach to the development at the time. Which was we laid out a set of principles for the project. What we wanted the project, product to accomplish. We didn't spend a lot of time, we didn't spend years writing specs and working over those specs and revising the specs and then throwing the specs over the wall to the

developers to code it up. We decided it was better to lay down the principles. This is what we want this product to do. Get everybody bought into those principles. We call them at that time, the ten commandments for Windows 95. We repeated them over and over and over so that everybody knew what they were. They could recite them, they could get bought into them, and then we were able to push responsibility down through the organization. We didn't need a lot of layers.

There was a lot of trust involved if they understood what the principles were. The principles gave people a framework for making decisions because everyday people come into the office, they make all kinds of decisions about how they're going to spend their time with features to work on how they're going to design it. If they get inspired by that vision, you trust that they're really strong people and they're going to make good decisions. You give them a lot of freedom. We pushed decision making way down through the organization. And those principles gave people that framework for making decisions. It told them not just what to do, but it also gave them clear guardrails on what not to do. So if it was something within that framework, go write great software. If it's not, don't do it. Even if it sounds cool or you thought it would be a great feature to have, it doesn't fit in that framework, we're not doing it. If you have any questions, then you can escalate it and we can discuss it. But then it always came from first principles. What are the principles? So what were the principles? It started out as 10. The 10 Commandments. I'm not sure I can reconstruct the 10 now because we eventually boil it down into a smaller number of principles and then requirements. The first one was build a modern, integrated, protective mode, 32-bit, reliable operating system. We didn't want to have DOS. We wanted to boot up into Windows, and it all ran in protect mode with 32-bit device drivers and could be, relative to the hardware requirements, be fast and robust and reliable. So that

was number one. And we were able to build on what we had started with Windows 4.0 groups to do that. No. 2 was it needed to be easy and fun.

As much as Windows 3.0 3.1 were made steps in the right direction, they still weren't that easy. We knew we needed, we didn't want to have the file manager, program manager dichotomy. We wanted to create a new user interface that was easy to use. And in fact, as we talked earlier, the way I helped describe this to the team, and they really loved the idea, was we wanted it to be easy enough for Brad's mom to use. This was, again, early 1993, '94, '95. Computers weren't that common. Most moms, dads didn't really have computers. Dads might've been at work, but my mom had been interested in learning how to use a computer. She had a Windows 3.0 computer.

She couldn't use it. It was too techy. It was not worth it. But she did want to play Bridge online. She wanted to email her friends. She wanted look up recipes or do that kind of stuff. And so whenever there was an issue that came up on making a decision how to use the product, people would ask, is this going to be easy enough for Brad's mom? And she was a good proxy for everybody's mom. Everybody could identify that, would their mom be able to figure this out? And that really, in fact, if you look at the Easter egg in Windows 95, no, we don't have Easter eggs in products anymore for very good reasons, but back then we did. If you scroll through it, there's a dedication to Brad's mom. And that was an inspiration to people to help make it easier. So that involved a new UI, it involved what we call plug and play. So you could just plug in the devices and have the device drivers be devices automatically recognized, device drivers would be loaded. And it worked with legacy devices too, which was really, really hard. We developed a plug and play spec for new devices and new drivers, and in fact, the plug and play

spec that we developed in 1995 is still the plug and play spec that's used today. The really hard part with plug and play was being able to defect and automatically install device drivers for legacy devices that were not developed for plug and play. And that turned out to be an incredibly difficult challenge, but we rose to it. We added long file names. Now we all take that for granted today, as we should. But back in the old MS-DOS days, file names were what we called 8.3.

It was eight letters followed by a three-letter file extension. Now that's obviously archaic, and it was a very, very hard problem to solve to be able to add long file name support in a backward compatibility fashion so that if there was an application that was written previously that only knew about 8.3 names, but the user gave it a long file name, how would that application still work? It didn't know anything about long file names. It had eleven characters set aside for storing file names. It was a very, very difficult problem that the teams in the past had given up on. They said, we can't solve it. But I went to the team and I said, guys, this is 1995. We are not shipping a product with 8.3. I'm not going to do it. You just got to go back and figure it out. They did, and they came up with a brilliant, brilliant solution.

We added great multimedia support. We know, look, people like to play videos or play games. We developed DirectX for Windows 95, which it was the game changer for the game industry. It was like the most significant thing that happened is blew the game industry apart because prior to that, Windows was a poor platform for games. It introduced a layer between the game and the hardware and games needed very quick response to be able to provide the graphics and input techniques needed to have good gameplay. So most developers have written directly to DOS where they could get

direct access to the hardware. With Windows 95, we developed DirectX, so it was a controlled way underneath Windows for games to be written in a very high-performance way. And that, I mean, it took over. Xbox itself is essentially a DirectX machine.

That's where the name Xbox was, it's a DirectX machine. It was all built on DirectX. So we wanted to make it easy and fun. The next thing was we wanted to be connected. We felt that we were building on Windows work groups, but now the internet was taking off when we wanted people to be able to connect to the internet in a very plug and play transparent way. You previously, in the earlier days, to be able to run a TCP/IP, which is the protocol required setting up static IP addresses, setting up your subnet masks. So we at Microsoft took the lead to develop new standards for TCP/IP to make it be able to work plug and play. We developed ones to also be able to use internet over dial-up lines, something called "PPP" protocol for that, we developed that, we incorporated all that into Windows 95, so that people could from day one be able to use the internet out of the box.

So those were the main feature areas. But then we added some requirements that made the project even more difficult. We wanted it to be fully compatible with the user's existing environment and run well on their existing environment and mainstream affordable machines. That meant all their existing devices, all their existing applications and be able to run quickly. We wanted, our target was on eight megabyte machines. Now, I'm talking megabytes, not gigabytes, megabytes, eight megabytes. We would run faster than Windows 3.1 on all scenarios and even on four megabyte scenarios, we would be able to run in single application scenarios, we would run comparable to Windows 3.1. And I did something which the team wasn't all that thrilled about and I still get a lot of crap about,

to be honest, is that developers are typically used to having very high-end machines that they write software for and then check the software in and then testing runs it.

Well, I restricted the developers to have eight megabyte machines. I wanted them to have the machines that our customers had, and I didn't want to have machines all from one company. I wanted them to have a smattering from a representative sample of Packard Bell and Gateway and Dell and Compaq and IBM and all the different computers. So I wanted them to be able to feel themselves every day, the experience that our end users would feel. Now, did they complain that their compiles were slower? Yeah, they did. Do I still hear about it 30 years later that, "Hey Brad, those eight megabyte machines you made us use." But you know what? The end result, I can't tell you that that was the cause for our success, but we never let performance get out of hand. We never got to a stage where, okay, we're get to the end of the project, but now it's way too slow and we got to go back and find ways to speed it up because every day the developers ran Windows 95 themselves, and if it was too slow for them, they were then motivated to make sure that it worked well, and it didn't have the bugs.

A lot of these machines, they had pretty crummy biases, they were pretty buggy. But we had to work on them because this is what our customers had. We loved our customers, and we were dedicated to that customer end user experience. And so yeah, they went through some pain that they probably didn't appreciate at the time, but when they saw how well the product succeeded, I think they're okay with it now.

There were two other things that we wanted to add to those requirements. The first one was to make it global from the

beginning. Up until then, software had been basically coded for English in the U.S., and that when you wanted to localize it for another country, another language, you had to go into the code. It wasn't just a matter of changing the strings for the menus and so on. You had to go into the code and make the change. It was very painful. We had a philosophy because we wanted this to be worldwide from the beginning of that the code would be entirely language and localization independent. And that every localization would just be a text file. We had a term for, I call it EJAL, English as Just Another Language. And when we came up with this idea at the beginning, people thought we were nuts.

Like, this is crazy. Nobody ever does it this way. It's just too hard. But we stuck to it and we ended up being able to launch in eight languages simultaneously. We had teams from Japan, from NEC and Toshiba, embedded in our team to make sure that we worked well on Japanese machines. The ones from NEC were not IBM PC compatible, so there were particular things that needed to be done to work on the NEC machines. Toshiba specialized in laptops, so power management was particular concerned to them. So they had teams embedded in our Windows 95 team to make sure that out of the gate we worked well all over the world and we succeeded. I mean, if there's a language, Windows exists in that language. The other thing that we added, and this one was added more towards the end, was accessibility. Until that point, accessibility really wasn't that important to the computer industry. Computers were still so new and things were moving so fast, taking care of the needs for accessibility needs, people with disabilities, was second priority, I have to say. And we were doing a good job. We were probably doing a better job than any other operating system or other applications, but it wasn't good enough. We had made some commitments to the CIO of the Commonwealth of Massachusetts about things that we would do to improve accessibility in Windows

95, and we were falling behind. We were not meeting those commitments. So he called me up. He summoned me to Boston. And I brought with me the head of the accessibility team because I wanted the pain to be shared. And he read us the riot act. He threatened that if we didn't meet the commitments that we had made to him previously that he was going to ban Microsoft software from the Commonwealth of Massachusetts. And he did a really good, he changed my whole outlook on it. To that point, I think most people in software companies had viewed accessibility as just another feature that would go through a typical ROI analysis. We're going to put it this much effort, resources into, and what's the return, how many more copies are we going to sell?

He made it very clear, in very painful terms that he had a responsibility to advocate for people who are unable to advocate for themselves that people who are in disabilities, you can't view it in an ROI framework. You have to view it as we are a big enough company now we have a moral and ethical responsibility to these people. And it was painful meeting. It was one of the most painful meetings, it was as bad as some of the bad Bill meetings. I knew it was going to be. That's why I brought Chuck Oppermann with me because I wanted him to feel the pain. And we came back, we moved some people over, took some of my top people like Laura Butler, she rose to the occasion, led a huge effort and last-minute effort, and it was a huge sense of gratification that the CIO of Massachusetts gave his stamp of approval.

And I think it changed, it was also an inflection point in the way accessibility was viewed in the industry. I think Microsoft with Windows 95 became leader. To be honest, there were still many parts of the company that were reluctant to embrace, who still viewed accessibility through that ROI lens, and we did our best to convince them otherwise. It's still a work in progress, but I think

where we are today is a dramatically better place. And I think the localization and the accessibility stuff, people aren't as aware of the accessibility stuff unless you really need it, but I give a lot of credit to that CIO who lashed me very painfully, but it had the intended effect and we did, I think, become real advocates for accessibility.

Becky Monk: Fantastic. Okay, so you were able to roll out really the product, the change the world.

Brad Silverberg: Yeah.

Becky Monk: So how did you celebrate?

Brad Silverberg: Boy. We knew Windows 95 was going to be big. We could feel in our bones. We felt it was going to be a great product. There were actually two celebrations. The first celebration was on RTM Day. Now again, people here today may not fully understand how software used to be. Back then, it was distributed on floppies or CD-ROMs. We didn't really have any online ways of distributing software. So we had to release the product to manufacturing of what we call a golden disc that got released to the OEM so that they could install it on their machines that could be ready for a launch. And that we could also then build packages that would be in the retail stores for launch day. So, RTM day was July 14th, Bastille Day, and David Cole and I signed the master disc in front of the team members and we kind of went crazy on campus.

We had a legendary RTM party that people still talk about today. That was three years' worth of tension, stress, anxiety, hard work, long hours that just got popped, like champagne. David, he had this little pickup truck, little red Toyota pickup truck. We bought cases of Dom Pérignon and we also bought some cheap champagne. The Dom was for drinking, the cheap champagne was for spraying, and we went pretty crazy on campus. We were running through the fountain, we were running through offices. We got pretty, I was reprimanded later by operations, but there were rumors of people riding motorcycles in the hallways of our building and all kinds of hijinks and stuff, but that was an incredible release of tension and pride. And that party, that celebration was really for the team. That was for ourselves. August 24th, general availability launch date, that was for the world. That was for the company, that was for the world. That was an event on campus.

We had a carnival atmosphere. It was a beautiful day. We schedule it, usually we schedule an outdoor event, because usually August 24th is a good day in Seattle. The previous couple of days it was a little bit rainy and we were getting a little nervous. But August 24, the skies cleared and the skies were full of clouds that looked like the box. And this is the box. This is actually the very first unit of Windows 95 that rolled off the production line that was given to me as a gift by the team. The production lines was then in Canyon Park, which is in a suburb of Bothell nearby. And I said, this is the first unit of Windows 95 ever made. It was produced Friday afternoon, July 14th, 1995, at 5:15 PM. And I have not kept many mementos from my years at Microsoft, but this one will always be special.

And the sky looked like the clouds and it looked like a divine omen. We had Jay Leno, as everybody knows, on stage with Bill. I got on the stage at the end and probably the proudest moment of my

entire career, no, not probably, certainly the proudest moment of my entire career was at the end of the event, at the end of the speeches, the stage opened up to reveal the entire development team sitting in bleachers behind in colored shirts that matched the color of the Windows flag to a standing ovation for all the attendees. Many of them were journalists, and journalists tend to be fairly critical people and not very sentimental about the companies that they're covering, and I could see tears in the eyes, and the appreciation, the standing ovation and the team standing up and cheering. It was quite a moment. And you can still get it online. It's on YouTube. You scroll to the end and see that moment is still an incredibly inspiring moment. And the pride of the team, all that they put into that product, their hearts and souls, you could see it and you could see the appreciation. I was so proud of that team. Still am to the day. I'm sorry. I get a little emotional, but that was we, and even then, we didn't, as big as we thought it would be, it was bigger. It was transcendent. It changed the world. And we had the Rolling Stones TV ad, which probably I'm sure Brad Chase talked about some in the saga and getting the commercial made with Wieden+Kennedy and some of the launch events. We had the Empire State Building lit up. We had CN Tower in Toronto lit up. We had Tower of London. It was a worldwide event, we captured people's imagination worldwide. We captured the moment. We were the moment, it was us, it was us. It was like the future had just arrived. And it was an exciting, joyful, optimistic future. And we were at the center of it. And this event was now personal computers, the tech industry, Microsoft, us. We were now part of the world stage.

It was no longer just this niche thing. It was now part, and it was everyday people all over the world, now having access to computers and having computers be part of our everyday lives. And that's true today, whether with the PC, the internet took it the next

step, I think the internet made it even easier for people to be able to use PCs as part of their everyday environment to be able to discover, learn, be more productive, have more fun. And then smartphones, take it even the next step as computers become part of our everyday life. And I think the big inflection point for all that happening was Windows 95. It was the largest software event in history and still is the largest software event. It was a unique place in time with the right product, at the right time, with the right marketing. Now the marketing was incredible, and Brad Chase deserves a lot of credit for what he and the team accomplished. But the product had to hold up. And the product, good marketing can only get you so far and can get people get you noticed. But people love the product. People told their friends about it, and we sold ridiculous amounts. And those of us at Microsoft, there were friends.

Becky Monk: Brad, thank you for sharing these fantastic memories and your history with us.