Oral History of Ed Fries

Interviewed by:
Dag Spicer

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Dag Spicer: So we're here today on May 6, 2014, with Ed Fries from Microsoft, and various other ventures, but [now] in [his] post-Microsoft life. And, Ed, welcome to the Computer History Museum.

Ed Fries: Thanks. It's good to be here.

Spicer: Really glad to have you here today. Can you tell us a bit about your early years, where you grew up, where you went to school, that kind of thing?

Fries: Yeah, sure. So I grew up outside Seattle, [a] town called Bellevue. My mom and dad both moved out from the East Coast to work for Boeing, so Bellevue is kind of the engineer's town at Boeing. So everything was Boeing back then. It was the biggest employer. And so, yeah, that's where I grew up.

Spicer: Were your parents technically oriented or--

Fries: Yeah, they're both technical. Yeah. My dad was an electrical engineer, and my mom was a chemical engineer.

Spicer: Wow.

Fries: Yeah, so they met at Bucknell [University] and then both ended up getting hired by Boeing and moving out here.

Spicer: That's great. So tell me how they influenced you, then. Having two engineers as parents must have had some kind of influence.

Fries: Yeah, it gets worse actually, because my mom quit her job when she had the kids, and then when I was in sixth grade, she went back to school, back [to the] University of Washington, and got a master's [degree] in computer science and then went to work at DEC, Digital Equipment Corporation, as you know. So, yeah, dad was at Boeing, and mom was at DEC. And they had a huge influence. I mean, just sitting around the table talking at dinner was always, I don't know, technical stuff, and dad would bring home programmable calculators and stuff like that, which back then were hard to come by and expensive. I remember [the] HP-95 calculator [Fries: it was actually an HP-65] with a little mag[netic] tape that would go through it, and that was some of the first programming I did, was on that, was writing simple calculator games.

Spicer: Right. So I was going to ask you what your first computer was, but it sounds like it was a calculator.

Fries: Yeah, it really was a calculator. I had some other interesting things that maybe you have here at the museum. I had something called a Cardiac.

Spicer: Oh, yes.

Fries: Yeah, which was, for people who don't know, it was a cardboard computer put out by Bell Labs, and that was my first exposure to assembly language. And anyway, you look it up. I mean, there's no way to know what-- how can you have a cardboard computer, right? But it actually works quite well.

My dad brought home a little kit 6800 [computer with a] hex keypad and LED display, and I did some assembly programming on that when I was in junior high. Mom would bring home, sometimes, a printing terminal. Somebody was asking me about that, in an interview the other day, what a printing terminal was.

Spicer: Like a [Texas Instruments] Silent 700 or something--

Fries: I don't remember what it was, but yeah, it had the modem, the phone cradle, and then paper and that. It was basically like an electric typewriter, except the computer controls it half the time, and you control it the other half. So if you're playing something like a text adventure, [it] works really well. You type what you want to do, and then it prints out the response. So that kind of thing, those are some early memories.

Spicer: Did you have any hobbies or interests?

Fries: Other than computers?

Spicer: Other than computers, yes.

Fries: Yeah, sure, when I was a kid. Boy, what were my hobbies? I mean, I was a Cub Scout.

My dad was into fishing and flying model airplanes. He would build control line airplanes and fly. I just gave a speech at a conference called DICE, where I interviewed him for the talk, and I talked about flying control line airplanes.

Spicer: You interviewed your dad?

Fries: I did, yeah, which was a little scary. But anyway, so you should watch that talk.

Spicer: OK.

Fries: It's on YouTube if you search for my name and DICE.

Spicer: DICE? OK.

Fries: Yeah, you'll find that talk. But you know, *Dungeons and Dragons* in junior high, but I was also into drama. I was in a bunch of musicals and stuff like that. Had a close group of friends really into playing cards. [INAUDIBLE] so.

Spicer: Did you enjoy school for the most part?

Fries: Yeah, I guess I have pretty good memories of school. I mean, I went through, I think like every kid does, kind of trying to find your place in school and your group [of] friends. I was lucky, too. By the time I got to high school, I made a really good set of friends who are still friends with me today. In fact, we were just playing cards Saturday night, so we still get together and play. But, yeah, I mean, in high school, I spent-- by high school, I got an Atari 800 and really fell in love with that machine, and that really-- I wasn't sure what I was going to do until then, but once I found that machine, that really made clear I was going to spend my time with computers.

Spicer: Really?

Fries: Yeah.

Spicer: So that was it?

Fries: Yeah, that was it for me.

Spicer: Interesting. What year would that have been?

Fries: So I graduated from high school in '82, so I think I bought the 800 probably in 1980. And, yeah, I spent a lot of time with that machine.

Spicer: So what kind of things did you do with it?

Fries: Well, I started typing in games out of magazines. There were computer magazines, like *Creative Computing* or *Antic*, and they would print big basic games. And so you just sit there, type them in. At one point, I wrote a program to help me type in the programs, where you'd hit a key, and it would be a whole basic keyword kind of thing just make it faster.

At first, I only had a tape drive, a cassette tape drive, to save things on, and that was very unreliable. So it was sort of a minor tragedy if you couldn't save something. But I think probably typing things in helped me kind of learn how programs are structured. So then I started making my own, first in BASIC, and then when that wasn't fast enough, I started to do assembly programming.

Spicer: What were the kind of programs, games maybe?

Fries: Yeah, typically, I did games. I mean, some of the early games, if you ask my friends, some of them remember I did a game to play gin rummy called *Compufoe*. We would play against *Compufoe*.

I did a little game where you could make robots, and the robots would battle each other. And so you'd program the robots in sort of a pseudo assembly language, and then they would move around the screen and fight each other, and my friends made little robots. Anyway, that was a good time. Probably the first kind of semi-serious game I made was I did a copy of *SpaceWar!* in assembly language.

Spicer: The classic MIT game from 1961?

Fries: Exactly. So I had the sun, and I had the ships. And I needed to do the gravity for the sun, and to do that, I needed a square root routine. And that was tough to come by for [a] 6502 [processor]. And somehow I found one in the library. I went to the library, which back then you had to use a card catalog. But somehow, I found a square root routine in a magazine, and guess who wrote the square root routine article.

Spicer: Bill Gates?

Fries: Woz [Steve Wozniak].

Spicer: Woz? OK.

Fries: So anyway, so I used Woz's…

Spicer: Yeah, [the] 6502 is more Woz's style, I guess.

Fries: Woz's square root routine. And so I made a little *SpaceWar!* game and I submitted it to Atari. They had this thing called an Atari Program Exchange, where people could submit programs. It's funny. I found--

Spicer: APEX, wasn't it?

Fries: Right. I found the rejection letter the other day when I was going through some stuff, and I remember it. In my mind, I remember just like they turned it down, and I'm sort of crushed, and I moved on to something else. And when I read it now, it basically said, hey, if you could-- it's actually pretty cool, and if you could just fix these three things, we would take it. But I don't remember it that way. I remember it said they didn't like it.

Spicer: A crushing defeat. Well, that's a real keepsake now, given what you did after that. So what do you remember most about-- this is really the peak of the personal computer era, not necessarily the IBM PC, but Ataris and Amigas and Commodores and Apples and so on. Do you have any specific memories of that time and what game development, for example, was like for people back then?

Fries: Yeah, well, so when I was junior high, in junior high, the TRS-80 came out. And that machine-- I used to ride my bike down to Radio Shack and just play around with it in the store, and it was terrible. I mean, the keyboard had terrible bounce problems. You'd hit the letter, and you'd get three letters half the time.

Spicer: I remember that.

Fries: And it was just a terrible machine to work on. When I started high school, they'd just gotten the first Apple II's in, and so we had a set of maybe, I don't know, five or six Apple II's in the back of the classroom. And me and a half dozen other kids just made that our home. We just moved in there. And we played a lot of games we weren't supposed to, but of course, we did anyway-- *Choplifter* and *Wizardry* and stuff like that.

And we wrote programs, too, in BASIC in Pascal. A couple [of] math teachers took it on themselves to do some BASIC programming classes. I remember one particular class where a teacher had us write a program out in BASIC, just on paper, and then he typed them all in. And then he ran them one at a time in front of the class, so you never got to debug it right. You had to write it and hope, and the challenge was to make it a rocket and have the rocket blast off, draw a rocket on the screen and then have it blast off.

And it was made of memories because it was so funny. They would draw crazy, or they would take off and go sideways or every possible bug you could imagine. But that was fun.

Spicer: So he didn't use it as an opportunity for debugging as a class? You only got one shot?

Fries: For this particular assignment, we got one shot, yeah. Yeah, so that was funny. But at home, I had my 800, and I started to work on other things. After the *SpaceWar!* game that I mentioned, I did a *Frogger* clone called *Froggie*, and that was really my true entry into the video game business.

Spicer: Was that commercially successful,? Did you put it out there for sale?

Fries: Well, so I made it just like everything I was making, just because I enjoy programming, and I wasn't sure what to program. So when I saw something in an arcade case, it gave me something to emulate. So I decided to make a *Frogger* clone, and I built one in assembly language and just gave it to some friends and didn't really think about it. And a company-- it made its way through multiple-- you know, through bulletin boards. There was no internet back then, of course, but they were-- do you want me to talk about bulletin boards?

Spicer: Yes, absolutely.

Fries: OK, so a bulletin board-- there were little bulletin boards all over the country. They were just people with home computers that were set up with a modem that would answer if someone called in. And then they would put up this little bulletin board software, and you could do things.

Primarily, you could exchange messages, but the biggest thing is you could [do is] upload and download software. So only one person typically could be connected to a bulletin board at a time, and so you'd call, and it'd be busy. And eventually, you'd get in, and then you'd have maybe 10 minutes or 20 minutes to do whatever you wanted.

So my program ended up getting up on some bulletin boards, and then from there, it went to other bulletin boards. And that's how things would just move around the country that way. I mean, long distance [calls] cost money back then, so typically you only called the bulletin boards in your local area.

But anyway, somehow, my game made its way down to California, and guys who were starting a company called Romox, R-O-M-O-X, saw it. And I was a high school kid working at pizza place, programming when I had free time. Yeah, and they contacted me and wanted to publish the game.

Spicer: Wow. So did they?

Fries: --exciting. Yeah, yeah, they did. Well, first, they had to change the game because they were afraid we were going to get sued because it looked exactly like *Frogger*, and it was called *Froggie*. But I don't know, apparently they weren't too worried about getting sued. Their idea was that we should give it a medieval theme, and so they wanted me to replace the cars with jousting knights. And then the idea was that you were a prince who had been turned into a frog, and you were trying to get across to the princess to kiss the princess and turn back into a prince.

Spicer: I see.

Fries: So that's kind of, I guess, a nice twist on *Frogger*, but what it means is it's still a frog hopping across. And the road, instead of having cars, it just had jousting knights, but it still looked like a road. The frog hops across, and then the river was unchanged. It still had the crocodiles and stuff.

And then when you get across-- in *Frogger*, there's a fly that moves from spot to spot, and it's like a bonus if you jump on the fly. But my game had a big pair of lips that would move, and you jump on the lips. And it would kind of freak out, and then you turn into a little prince's head. So that game is called *Princess and Frog*, so *Froggie* became *Princess and Frog*. And, yeah, that was published by Romox.

Spicer: Right. Did you receive any royalties?

Fries: I did receive royalties. I had a very--

Spicer: Nice.

Fries: They showed up. They put a contract in front of me. I had no legal representation. The contract was 5% royalty, no advance. It's about as bad a contract as you could put in front of somebody, but that's

fine. I signed it, and I was happy. Yeah, and then after it sold, I started getting royalty checks, and they were not huge, but they were thousands of dollars. And that helped me go through college.

Spicer: Wow, that's nice. That's great.

Fries: I went off. I graduated from high school in '82 and went to college. I went to a little school called New Mexico Tech, little school in the middle of New Mexico, and that's where I finished that game. And then I did two more games for them-- a game called *Anteater*, which was kind of like *Dig-Dug*; and a game called *Sea Chase*, where you're a little submarine, and you go around. And then I was working on a fourth game when the entire game industry melted down in 1984, which has been in the news lately with the whole *ET* thing.

Spicer: Yeah, actually, since you bring it up, why don't you tell us a bit about that, and what were some of the forces? There were one or two major companies involved.

Fries: Yeah, I mean, I don't think it was my fault. I was just a little programmer in New Mexico doing a few games, but I think there are a lot of people like me cranking games out. A lot of games were coming into the market, and I think the market just really oversaturated. Too much product, and retailers started cutting prices.

And cut price, cut price, cut price, and pretty soon, they were basically giving cartridges away. They had tons of stock, and the flip side was all the game companies had just completely bet the farm on these games. I mean, Atari had put out-- I guess with *ET*, they made more cartridges than they had sold consoles, so they were betting that the cartridge would actually sell consoles.

[INTERPOSING VOICES]

Fries: So there's just a huge flood of content, as I understand it, in the market at the time, and everything, everything went away just [EXPLOSION NOISE] in a very short amount of time. And it was interesting, I mean. It was because a lot of people thought, nah, it's over. Video games were a fad like lots of other fads, like hula hoops or pet rocks, and now we'll move onto something else.

Spicer: So it wasn't just Atari. It was the whole ecosystem going down the drain.

Fries: Tons of little companies, more so than the big guys.

Spicer: Really?

Fries: Yes.

Spicer: That's interesting because you really-- you hear about Atari, of course, I guess because of the spectacular amount of money they lost. But obviously, there are a lot of other people involved.

Fries: Yeah.

Spicer: Jumping back to your education, what did you study in college?

Fries: Computer science, big surprise.

Spicer: Yeah, OK. And any particular specialization like compilers or architecture or--

Fries: I mean, I had classes in all those things. New Mexico Tech had a good computer science program. It was one of the top 10 in the nation at the time. I was admitted to [the] University of Washington. I was accepted to go there, but I didn't want to go there because they had huge classes and not enough equipment for the students and things like that.

Mexico Tech, small, they had a big DEC-20. They had a DEC-20, and they had a VAX 750. They had a bunch of equipment, so there was a lot of equipment to play with.

Spicer: More opportunity for you.

Fries: Yeah, and I was a pretty good programmer already, so computer science wasn't that hard for me, but I was totally untrained. I mean, if you went and looked at those old programs, you just see-- well, I still write 6502 assembly. It's not that different, but you'd see hundreds and hundreds of lines with no comments, for example. I remember one day, going in just when I first got there, looking over someone's shoulder in the computer lab as they were writing this game, and they were putting in all these comments, and I was like, wow, what a waste of time, just typing in giant comments. But, yeah, it's good to get a formal computer science--

Spicer: What's your position on commenting now? Is it a good idea, or a waste of time?

Fries: I'm somewhere [in] between. Sometimes, I'll write a comment, and then I'll delete it because the code says exactly what the comment says. And I think why did I put that comment in? But I try to

comment things that aren't obvious, especially in assembly language. You can do a lot of tricks that are not obvious.

Spicer: Oh, yes.

Fries: And probably my memory isn't as good as it was when I was 20, so it's good to leave myself a few hints when I go back and work on things later.

Spicer: Exactly. So you graduated from college and then what happened? Did you go right to Microsoft?

Fries: Well, so a little before I graduated from college-- so after the games thing melted down, I had to get a job, and so I got a job working in the computer lab at school. So I convinced them to make me a system administrator on VAXs, so I learned a lot about Unix, 4.2 BSD Unix, and ran the system, did a lot of early work with laser printers. We had a super early laser printer, and so got Tex up and working, this layout program you may know about. And a bunch of font stuff and spent time chasing hackers. All the young computer science students are hackers trying to become “root” and take over the system.

So I did that, and then in the summer between my sophomore and junior years, I looked for a summer job in [the] Seattle area, and so I sent resumes out to a bunch of people. But I don't know how I found these different computer companies, but I just looked them up. And one little computer company called Starcom-- I got a few interviews, and I went around, and I interviewed like three or four places. And all of them asked me if I interviewed at Microsoft, and Microsoft was really small back then, first of all.

And I was like I didn't even think about Microsoft. They make BASIC, right? I mean, I don't know much more about them than that. But anyway, one little company hired me, a little company called Starcom, and it was a really small company. There was the CEO, his wife was the secretary, there was a sales guy, and then there was the programmer.

Spicer: That's about as small as you can get.

Fries: Yeah, and they made kind of database management stuff, personal PC management software. And so their main product was something called *Files and Folders*, and you organized data into files and folders. And so I went to work on that that summer. And so I shared a desk with the programmer, so we had our two computers facing each other-- or back-to-back, I should say. And I worked on that. I worked and added a bunch of features to it and just did a bunch of kind of database-y software-y stuff.

Back then it was… something a lot of people don't remember, is back then, although there were a bunch of IBM PC clones, they weren't compatible. So like DEC had something called the Rainbow. I worked on something called an Apricot. I don't know, they were all these different machines, and they all technically ran DOS. But you had to make changes to the program to make a run on all these, so they weren't truly compatible.

But anyway, so I worked for them that summer, and then the next summer, I sent out resumes again. And I sent one to Microsoft as well because everybody had mentioned Microsoft, so I thought why not. And they saw my resume and offered to fly me up to interview, which none of the other guys had done. It was like March or something.

So yeah, so I got to fly home and interview, which was great. And anyway I could talk more about the interview or whatever. Depends how much detail you want.

Spicer: Yes, please do. Coming into Microsoft, is that where you're--

Fries: Yeah, so I came-- I wasn't sure what to expect. Typical kind of Microsoft interview you kind of hear, this all day thing where they go around, and you just meet with one person after another. And they ask you to write code right there on a whiteboard and ask you tricky questions and stuff like that. And met with different people from different parts of the company.

I then had what is known as an 'as appropriate' interview. The "as appropriate" interviewer in Microsoft-speak is the final interviewer, usually the decision maker who will decide whether you will be hired or not. Because they are senior, you only get to talk to them "as appropriate." In other words, if you are failing the interview you will never see them, but if you are doing well, you will. So Microsoft-speak, I got to the As Appropriate, who was a guy named Charles Simonyi, and maybe you've heard of Charles, but he's a crazy Hungarian guy. He's been super nice to me ever since then, a really great, great guy. I went to Kazakhstan and watched him blast off into space for example.

Anyway, so he was super-- probably one of the most intense people I've ever met, by the way. --super intense, and he was my last guy. And he shows me a just a bunch of-- probably must've been 8086 assembly language and asked me what it did, and I had to go through and figure it out and explain it to him, stuff like that, which was tricky because I wasn't really an 8086 assembly programmer. But anyway, I convinced him, apparently, that I was the kind of Microsoft material, so then they offered me a job that summer.

So I joined Microsoft that summer, and they put me on kind of a-- so I was a summer intern by Microsoft terminology. So they gave me sort of a summer intern job, which was, they put me in charge of the tutorial system, the DOS tutorial system. Typically, a summer intern gets a job nobody else wants. And

every Microsoft application back then-- and so there were things like Multiplan, and Multiword, and other ones I'm forgetting, anyway there were these DOS business applications Microsoft did pre-Office-- they all shipped with a tutorial. And this is pre-Windows, this is character-based days, OK? Actually, the first version of Windows was being developed that summer and I have stories about that, too.

But so, there was a group whose job was just to create these tutorials, OK? And they had a small set of programmers. And all the real programmers, guys like Ross Hunter and C.B Leverie, all these guys, they were all working on the Windows version of the tools, because they were getting ready for Windows 1.0 to launch. And so the intern got put in charge of maintaining the old tools. So that was my job.

So there were three programs. There was an editor, a thing called *Pack*, which compressed it-- the thing that you made out of the editor-- and then there was a run time called *Runt*. Anyway, it was a great job for me, because I'm a new guy there and all the people who work for me-- or not who worked for me-- who used this tool were right down the hall. They were all artists and writers, OK?

And I worked for them, really. They would come to me and ask for features. And so I would add, make changes to it for what they wanted. And I'm a pretty good programmer, like I said. So, they would ask me for something and I would give it to them pretty quickly. And so they started calling me Fast Eddie, because my name is Eddie, and I was fast. So that became my nickname for a while. Fortunately, I got away from that.

But one day, this one artist walks into my office. Her name is Janet Vogelzang. And she said she was doing a dentist's office, OK? And they would draw these things with just character art, right? Slashes and asterisks and things like that. And they were very good at them. So it would have 3-D perspective and a desk and all this stuff.

Spicer: Like ASCII art?

Fries: ASCII art, exactly. She said she wanted to have a little tank in the corner where fish swam back and forth, like you see at a dentist's office. And so could I add this animation capability? Hey, I did games, I can do animation. So, sure, no problem. So I add this animation feature, give it to her later that day. But it gave me an idea. I said, if you give me more fish, like if you make some bigger fish for me out of ASCII art, I have this other program I want to make.

And so she did. She gave me a bunch of ASCII fish, and I wrote this game that made fish swim back and forth on the screen. OK? And it said *Microsoft Fish-O-Rama*. It had the Microsoft logo, and then the screen would blank, and then fish would go back and forth. And there was sort of waving grass on the bottom, which was made out of parentheses. So I just made it after work that night as like, just for fun, gave it to Janet and a few more people.

And after a while, as I'm going home at night, I started to see it running on more and more machines around the office. And so this fish program spread. And I don't know if it was the first screen saver, but it was certainly a very, very early screen saver. It was not my intent to make a screen saver. But anyway, I made this fish thing, which caused a whole other-- there's a whole fish thread that then goes through the next five or 10 years of my life.

But anyway, then I wasn't just Fast Eddie, but I was also the fish guy. So people started bringing me fish stuff, and you know how it is when people think you collect things. More and more people start bringing in, you know. So pretty soon, my office is full of fish crap that everyone has gotten on vacation somewhere. They see a fish-- oh, Ed would like that. And they get it and bring it to me. That's some of the stuff that started that summer.

Spicer: Well, that's great. And since you brought it up, tell us a bit about Windows 1.0 and the steps leading up to that.

Fries: I'll tell you a couple-- So I wasn't working directly on Windows 1.0. I knew it was a troubled project. Sometimes I would go, and C.B. Leverie was a guy who was one of those guys who would just rant. And I learned this pretty early. And so I would go into his office, maybe Friday afternoon, and I knew, I learned I only had to say a few words, you know--

Spicer: To trigger him?

Fries: Yeah, to trigger him, exactly. And then he would just go off about how screwed up things were, and blah blah blah. And this is pre-IPO Microsoft, by the way. So, I would hear about how low the pay was, how hard people worked, and how unhappy they were. And you know, and Windows, he would go off on all these rants about how screwed up Windows was, and blah blah blah blah blah.

And then one day, one week, for some reason, all the real programmers, the non-interns were busy or gone or something. Maybe they were on vacation. And so they needed someone to go to a Windows status meeting, and so they sent me. I was the only-- everyone else had already gone or couldn't go. So it got down to the interns. So they send me. My job is just to sit in this meeting and watch. And it's a status meeting, weekly status meeting on how Windows is doing, OK?

By then Ballmer has fired the head of Windows and is running it himself. And it's a very screwed up project, it's missed its deadlines. Anyway, so I'm just a little kid sitting in the back, watching this meeting, and Ballmer is up in front of this big whiteboard. And there's a chart on the whiteboard, and the chart is the bug count by week. And so there's like a solid line for the week's that have passed so far, and then a dotted line projecting forward in time, OK?

And the solid line looks maybe like this. And the dotted line looks like this. You've seen charts. So it's like, errr, errr, and then shifted. Total fantasy, you know? No way. And he's up there and he's being, rah rah. And he's talking about how-- we're going to do this. We can make these-- we can make the date. And I'm just looking around and I just see these programmers, and they all, they look, they just look like dogs who've been beaten over and over again until they just lay there and just take whatever.

That's the look I saw in the eyes of the guys around the room. It's like, Ballmer could say whatever he wants, and these guys are just like, sigh. Obviously giving everything they can. And this is the projection, not this. So anyway, so that made an impression on me. So in the end what happened was, Ballmer came up with this clever marketing thing where he-- there's no way they were going to make the final date, so they put out what they called the Preview Edition. Preview Edition? Some word like that [Premiere Edition]. You guys should have a copy of this somewhere in your museum.

But they put these out, and it was what we would call beta today. But by putting out this preview edition of Windows, he could claim that he met that date that they were trying to make, even though it wasn't really close to being done. And Windows 1.0 was pretty useless to begin with. I mean, it didn't have overlapping windows, for example. It had a tiled window system.

Spicer: Wasn't 3.1 sort of the first really decent Windows? Something like that?

Fries: I'll talk about Windows 2. Windows 2 was the-- either Windows 2 or Windows 95. Between 2 and 95, yeah, maybe. Probably Windows 95 was the first Windows you could actually use. So anyway, let's just finish up. So I left Microsoft-- I mean I finished my internship-- I go back to school for my senior year. I do my senior year. I have a standing offer to come back and join Microsoft. They like the job that I did, and they wanted me to come back and work for them.

But it wasn't clear what project I would work on. A guy named Jeff Harbors called me, who I didn't know, but he was in charge of the applications group. Microsoft Desktop Applications Group. He told me that he couldn't decide which project I was going to go on. Either I was going to go on an old project or a new project. And I said, well, a new project sounds nice. That's all I knew, old and new. And then he called me back and said he decided put me on the old project. But he wouldn't tell me what the old project was. And I was like, OK.

But I hadn't committed to taking that job yet. I sent out a bunch of resumes, got a lot of rejection letters, including one from Lotus, which would later be funny. But I interviewed at Cray. I interviewed at HP. I interviewed with a Unix consulting company out of Chicago. I don't remember what they're called. Anyway, the Cray job turned out to be a test job, which I didn't want. But HP and the Unix company offered me jobs, so I had three job offers to choose between that we're all roughly equivalent.

And it was a tough choice. I mean, you've got to remember, I was definitely been C.B. Leverie in the sense that I'd heard all this bad stuff about Microsoft. But I had a good experience there, and I wasn't sure what project I'd be on, the old project or the new project, or whatever. Also, it seemed kind of like a-- for me, I went to New Mexico kind of to get away, as a chance to like-- and so going back to my hometown seemed like a little bit of a cop out. But in the end, I decided to take the Microsoft job, and so I joined full time in June of '86.

And when I walked in, it was almost like going into a completely different company. In the time that I had been gone, which had only been less than a year, the company had gone public. And so everybody was walking around with big smiles on their face. I couldn't believe how different the attitude was then pre-IPO. You know? All the old programmers seemed like they were whistling to themselves.

But also the company had completed the first part of its corporate headquarters, moved into the first four buildings, four X-shaped buildings around Lake Bill. Instead of being in kind of rented office space somewhere. And so it was really, really different.

And it turned out that the new project that I did not get put on was something they were starting from scratch, which was called Microsoft Works. And the old project was to take the Macintosh version of Excel, and turn it into a Windows application and take on Lotus 1-2-3. So the old project was actually way more interesting than the new project. And so I was really glad to be put on Excel. And that was an awesome experience.

Spicer: So ultimately, you would work on Word and Excel, I think, right?

Fries: I would, yeah.

Spicer: So, can you tell us a bit about what that was like?

Fries: Probably the first time in my life when I was working with programmers who were better than me, first of all. And there was a guy named Mark O'Brien who was the technical lead. And at Microsoft, especially at that time, the technical lead is like the god of the program. He knows everything about it, and you do what they say. He was like the guy I had to talk to every day. He was the one who assigned me my tasks and stuff like that.

I had a manager, a guy named Chris Peters, who's also an amazing guy. But Mark O'Brien was the technical guy I worked for. And there was another guy named Rick Powell, who was an incredibly, incredibly good programmer. And then John DeVaan a bunch of other guys. There were seven of us total, working on this version of Excel. So, a relatively small team by any modern standards. And we're taking

on Lotus 1-2-3. You gotta remember, Lotus is bigger than all of Microsoft at this time, and 1-2-3 is their flagship product. So seven guys were taking on that.

Spicer: Can you tell us, just for the benefit of the audience, what *1-2-3* was, or what it did?

Fries: Yeah, so both of these programs are, at their heart, they're a spreadsheet. But they also have some charting and database capability as well. So I believe that's the *1-2-3* in Lotus 1-2-3, the spreadsheet, charting, database. So yeah, I'm working with these guys and it was incredibly challenging. I had a great boss, Chris Peters, he was just a really inspirational manager. Everybody on the team worked hard. Everybody on the team was talented. Great camaraderie.

To give you a sense, our team motto was, “re-calc or die,” OK? And Chris had these motorcycle leather jackets made up with a Harley logo that was replaced and said, “re-calc or die.” That was like, sort of, the culture of that group. It was like, we're the best programmers, maybe not at Microsoft, because the Windows guys always held themselves up-- the systems guys-- as the best. OK, we'll ignore that. Certainly, of anyone else, we're the best, and maybe we could take them on, too.

All right. And so that was the attitude. There was a lot of attitude, and a lot of expectation. I remember-- so as the new guy, I got assigned to lots of different tasks, of porting parts of the Mac version over to Windows. And I had to create whole new things like the file format, the XLS format, I created with Mark's guidance. And so, you know, that's just like, OK, give the new guy to make the file format. Do this, do that.

In making the file format, I had to understand pretty much how most of the program worked, because everything ends up getting translated into something that gets put out onto disk and loaded back in again. And so I'm like digging through complicated code that's like dealing with formulas in reverse Polish notation. And you know, I remember one day coming in to Mark O'Brien's office, and so Mark was like this god to me.

I mean, as this young kid with bright eyes coming in, here's this experienced programmer, but he's not just an experienced programmer. At night he plays lead guitar for a rock band called Green Ice. So he's this musician as well as being this incredible programmer. And he was a friendly guy, but he could be intimidating, too. I mean, he was, I don't know. So anyway, yeah, so I come in and I'm like, I'm confused how this reverse Polish notation works and these nested formulas.

You know. And he looks at me and he's like, come on, Ed. It's just not that hard. And I walk out of there going, oh, it's not that hard. It's not that hard. OK. So that was the kind of stuff I would get from Mark. And then I'd go back and I'd figure it out. Nothing's hard once you understand it.

Spicer: Sure.

Fries: But anyway, so it was a real kind of trial by fire. Rick was almost the opposite. Rick was, I don't know where Rick was from. Rick Powell. He had kind of like a southern sort of accent, a little bit. And he was a little slow in the way he would talk. And when he had free time, like when he was compiling, he used to like to play this game called Daleks. Do you know what Daleks is?

Spicer: Doctor Who?

Fries: Yeah. But it's a super old game where you have robots, and they move towards you. Every step you move, all the robots move directly towards you, even if it means they're going to crash into each other and blow each other up. It dates all the way back to printing terminals. About the simplest game you could play. And that was his game of choice. He would play this game for hours. And you say like, Rick, what do you see in that game? You know? He'd be like, to win at Daleks, you've got to think like a Dalek. That's what he would say.

But the Daleks, all they do is move toward you, so thinking like a Dalek is not very hard. And this was Rick's way. And he would handle incredibly complicated parts the program. And he would make them seem easy. If he didn't like the code you wrote, you'd come in the next day and you'd find it re-written. Because he wasn't confrontational. He would just do it. You know what I mean? He was like that. So anyway.

Spicer: How did new features get introduced into Excel at that time? Was it from marketing, or did you guys come up with your own ideas?

Fries: It's a really good question for the next version of Excel. Can I tell--

Spicer: Oh, sure. Yeah, yeah.

Fries: Can I tell a funny story about this version first? That includes this set of characters, and then I'll answer that question, because I have a good story for that. OK. So we're getting near the end of the first version of Excel *for* Windows. It was going to be called Excel 2.0 and it was going to be launched with Windows 2.0. It was going to launch for, whatever, September, November, 1997. Right? 1987. We don't want to miss a decade. Sorry. 1987. OK.

And it's all coming together. It's looking good. When you're working on a big, complicated program like this, the scariest thing is that you could find a bug at the last minute that could be-- I mean, bugs go from

really easy to really, really hard. And so when you're getting down and you're closing things off, and you're fixing the last bugs, you just never know if somebody's going to find this really bad bug. So one day, one of our crazy testers submits a bug called “Sindogs” into our bug database. And it gets assigned to Mark O'Brien, who's our lead programmer, technical lead.

And the bug was, you run this macro, and the macro does all kinds of different, crazy things. It makes charts, make spreadsheets, it closes and opens new ones, does all this stuff for about 10 minutes. And at the very end, a message box pops up and it says Sindogs. And then the machine hangs. The bug doesn't make any sense. Look through the code. The word Sindogs, no one's heard of it. Doesn't appear anywhere in the code.

Mark's working on it. Mark's got it. If anyone can fix it, Mark can fix it. Couple days go by. We're probably a few weeks from shipping. He's still working on this bug. And some of us are done. Some of us are just sitting around making test things, and making little games in Excel, trying to find our own bugs. And so he starts to farm the bug out to some more of us, to try to get more of us to work on it. But we can't reproduce it.

We run the macro, it works fine. He's got the tester's machine in his office. It works on tester's machine. Try cutting down the macro, make it simpler. Any time I change the macro at all, the bug goes away. And we try it, we can't even reproduce the bug, much less change the macro. We're no help. Few more days go by. And we're working long days, were working late at night. We're starting to tiptoe around his office, because he's in there. I've never seen him work this long on a bug.

You know, three days, four days, five days I go by. And all of the sudden I see something in his office I've never seen before. There's just a mass of wires coming out of this machine. You know. And so I whisper to Rick, you know, I'm like, what is that? It's an ice machine. What's an ICE machine? He says, in-circuit emulator. He can put it in, he can replace the CPU with that-- something that goes out to another machine-- and it will record all the assembly instructions as they execute. And then he can basically go backwards through. OK.

Anyway, another day or so goes by, and he has the bug. It's nighttime, it's probably 10 o'clock at night, and we hear him yell, he's got the bug. And it's the Windows guy's fault. OK. Here's the bug. There was no protected memory back then. And so memory was just in blocks, it could be scattered together. OK, so we'd allocate a piece of memory, the system would allocate a piece of memory. They just could be bumped up right across, right next to each other. OK.

One of those memory blocks belonged to the chart. And the charting code was drawing a line, and that line was clipped to a rectangle. So you really only want the line to go from here to here. You put a clipping rectangle around it, but you draw the line really big and you only get that little part. OK. So there was a

bug in the clipping code. So when that line got drawn, it didn't just draw in the little part where the memory bitmap was. It drew outside the memory bitmap, across one memory block into the next memory block. That in this situation, because of just the randomness of how everything winds up, was a system memory block.

Spicer: Oops.

Fries: And in that system memory box was the word “Windows.” And as that line went through memory, flipping bits, it flipped a few bits and the word Windows to change it to be Sindogs. OK. So then, the message box came up and said Sindogs, which was a corrupted version of Windows from the system.

So anyway, we were pretty close to the Windows group back then, because we were their main client. There was nobody else really writing Windows apps. And so we worked-- I mean, to give you a sense, earlier I had been working on scrolling speed, trying to get the spreadsheet to scroll faster. And I got it as fast as I could until, in my profiles, what was showing up, number one, was redrawing the scroll bar. So I could draw the whole spreadsheet and scroll it, but all my time was being spent on the stupid scroll bar.

So I sent mail to the Windows guys and said, hey, can I rewrite your stupid scroll bar code? And they So I checked in to their project, rewrote the scroll bar so it would be fast. So that's how close we worked. So anyway. So when we found that bug, Mark and some other people literally went to the programmer's apartment. First they checked, he wasn't working. At 10 o'clock at night, he's not working? They go to his apartment, and get this guy out of his apartment to come back and fix this bug.

We ultimately, we ship on our original date. Windows was late, of course. So we ended up shipping with a runtime version of Windows. So that when Excel 2.0 shipped, it came with a version of Windows packaged around it, so it would boot into Windows, just to run that one program, and then it would quit back out.

Spicer: Interesting

Fries: Anyway. So that's the “Sindogs” bug story. So you asked about features.

Spicer: Yeah and how they spring up, how they're implemented.

OK, so after Excel 2, we go into Excel 3. Mark O'Brien leaves to go to Juilliard, to go to music school. Rick Powell becomes technical lead, clearly the best programmer left on the team. And we grow from seven people to 15 people to do the next version of Excel. At the beginning of our project, we built a

schedule. And the schedule had a whole bunch of features. And the schedule is pretty detailed. This was Chris Peters real magic, was running projects on time. He was a master of doing this. Better than anyone in the company, probably before or since. And he insisted that we build up the schedule. And it was really, at that time, very detailed.

Probably the smallest task would be an hour kind of basis. Big complicated spreadsheet. And we updated it every week. So every week, you knew as programmer, you are expected to do at least 40 hours of work on the schedule. Well, by having a schedule, and knowing exactly when our ship date is, and working backwards from, that how much time we have, and how many programmers we have, we know how many little units of work we can do. And so then we fill those in. OK.

There's a group of people, started as one on Excel 2.0, is a guy named Ralf Harteneck who's a program manager. And the program managers were responsible for feature design. OK. They were not programmers, although some of them had programming background, which was always incredibly annoying to us, because they would come tell us the feature and then they try to explain how they would implement it. And it was always like, make a big table. We would joke but this and say, what is a table? Anyway, it's like, just tell me what you want, I'll make it.

But anyway, Ralph is like this fiery Argentinian guy, who one day, the police came and took him away in handcuffs. And we're like, what was that? And it turns out he had just bought a new car, and he was driving to work across one of the floating bridges we have in Seattle, and the police started to chase him because he was speeding, and he decided, in his fancy new car, he could escape. So he goes as fast as he can, and actually manages to dodge this police car. And he pulls into an apartment complex near work, ditches his car and walks to work. And a few hours later the police find the car, look up the license plate, find out who owns it, and then go and arrest him. Which he ultimately actually got out of it, because they couldn't prove that he was driving the car at the time.

But anyway, so this gives you a sense of Ralph. But anyway, so the program managers would have a whole set of features they wanted to do. Some of which were great, some of which were ridiculous. Our job wasn't really to argue with them about features, but our job was to schedule them. So if we thought it was ridiculous, it would probably take longer to do than something that we liked.

Also, we needed a certain amount of time every version to redo parts of the program, the internal parts that were getting kind of creaky. So there was always a certain amount of time that we would spend redoing core systems. And then sometimes the programmers had their own ideas about what they wanted to do as features, and they would propose them. And if they could kind of negotiate with the program managers, they could get features in.

Chris Peters, the head of our group, his title was development manager, he liked to work on some features on the side. Development manager, technically isn't scheduled, but he liked to have some kind of stuff to do when he wasn't managing. So for Excel 3, he came up with this feature called Auto Sum. And the idea of Auto Sum was you would push a button and it would insert a summing formula into the formula bar.

Now, we all thought it was ridiculous. We being the programmers. It was like, that's it? I mean, we're all working really hard, technical, complicated, database-y, spreadsheet-y things. And his feature is you push a button and it inserts text into the formula bar. Really? That's your feature? So we tease them about, it know, but he didn't listen. He did his feature. And when we get near the end of the project, the marketing people start to get involved, and they're figuring out how to market this thing. And they loved this feature. You could push this button and it would insert text. Sum, you know, in the formula bar. And they were so excited about this that they put it on the front of the box, and they made a big deal about it, and they made sure it got talked about in the reviews. And we're all like, “Oh my God, I cant believe this.” But it into ended at just shows Chris is a smart guy. People like it. They're still there, people like Auto Sum today. And it all started with Chris.

Spicer: That's great. So you moved at some point on to Word, I think, after Excel?

Fries: I did.

Spicer: Is that right?

Fries: I did. I did. Can I tell another story.

Spicer: Yes. Yes. About Excel or whatever you like.

Fries: OK. One more story. This is an important one. So still I'm a bad golfer. OK? A good friend of mine who's a good athlete, started dragging me out hitting golf balls with him. He needed somebody to play with in high school.

Spicer: OK.

Fries: And we still play together today. And so when you're a programmer, especially back then, you have a lot of free time, because you make changes and you compile. And for a big project, a compile would take about 10 minutes. And so that's why programmers all know how to juggle and we used to pick

locks. I'm a pretty good lock pick, and stuff like that, because we'd have these 10 minute chunks of nothing to do while we're waiting for the program to compile a link and be able to test it.

So I thought, I'll bring my golf club. I'll bring a putter in to work and a little hole, and all practice like putting while I'm waiting. So I'm putting, one day I'm out in the hallway putting, and I think was Rick Powell who comes to me and he says, you know, what if you went all the way. I was like, what do you mean? He's like, what if you went all the way around the building. I'm like, I don't know, I never thought of that before. It's probably 10 o'clock at night, something like that.

And we were in these x-shaped buildings, so we'd have a long hall, and then kind of an angle wall, and an angled wall, and then the long haul coming back, angled wall, angled wall. So instead of going the short way, to put into the hole, what if we went the long way, all the way around. So we tried it. Hit the ball as hard as you can, it goes flying down the hallway, bounding down the hallway, and if you hit it straight enough, you can get it all the way down the hall, bounce off the angled wall, and go around the corner. If you nick something, it might go bouncing into someone's office, or it could even in the middle part, bounce down the stairs. So we started playing at night. And this became something we call “the swing around the wing.”

Spicer: Now are you putting or are you--

Fries: Putting. You have to use a putter. We're using real golf balls. And you're hitting them pretty hard.

Spicer: Yeah. How long are these hallways?

Fries: Long. I mean--

Spicer: --Like a hundred feet?

Fries: Couple hundred feet, I'd say.

Spicer: Couple hundred feet.

Fries: Probably a hundred feet, and then the middle, and then another 100 feet. So anyway, over a period of months, they game evolves, and starts to become more structured, more people start to show up and they want to play. I have to organize it, so I have to limit it to Friday night, 6 o'clock, and I have to start organizing tee times. And so people would contact me on Friday, they'd want to get a tee time for

that night, and I would organize them into groups of six, and then send them off starting at 6 o'clock. And I would have five, six, seven groups of six.

And they would go as a group. And once they were around the corner, then I could start the next group. The guys on the back hallway, they didn't like this so much, so they started interfering with our game. So they started to put stuff out at night to interfere. And management was super generous about this. I think they saw it as a good morale thing. They didn't mind that there were golf ball bumping divots. [INAUDIBLE] new balls. Sometimes I'd tangle with the security guys, but I had approval from above to do it. Charles SImonyi knew we did it and it was OK with him. And ultimately Bill and Steve even came and watched and stuff.

So anyway, it was this big thing that went on for years. There was a big database of scores and there was a trophy. I got this idea. It's an old MIT idea where it just started with a single Gumby, and that was the trophy, called the Gumbopolis. OK? And the Gumby, then if you won that week, you got the Gumby, and you had to add something to it, and bring it back next week. So it got bigger, it got added to an actual trophy thing, and then lights got added to it, and ultimately it was like this huge thing and with lights and stuff stuck all over it.

Different teams from the company would win, and they would put their logos on it. And anyway, I still have the top half of it at home still. But anyway, I mean this went on for years, and as we move to multiple buildings and stuff like that. And all sorts of stories. But there was an intern named Nate Osgood. And he-- summer intern-- he wouldn't play all summer long. And then finally on his last day, we're like, Nate, you got to play. It's your last chance. He's like, OK, fine. So he stands on the tee box, that spot in the carpet, and he swings the putter back and as hard as he can he hits the ball, and it fly straight sideways into the wall. And it just like sticks in the wall, and then falls out, and it's the biggest divot we've ever seen before.

And we're all looking at that and we're like, that will be the measure of all divots from here on. So that became the unit of measurement. It became known as the Osgood. So from then on, every time somebody left a dent, we'd be like, that's about a quarter Osgood, or it has an eighth Osgood. So anyway, stuff like that.

Spicer: That's great.

Fries: Anyway, you better ask me some real questions.

Spicer: Well, that's a lot of fun. Let's talk about Word, and how you transitioned from Excel to Word?

Fries: I'll try to do Word. I can do Word faster. So what happened was we did multiple versions of Excel, Excel was very successful, Excel really started to beat Lotus 1, 2, 3 in the marketplace. My boss got promoted. Chris Peters got promoted from development manager to business unit manager, and moved over to run Word. OK. And he immediately got [into a] fight with the development manager over there. They were working on two versions of Word at once. They had kind of the poor, beat down, bad part of the team working on the old version of Word. And then the best people on the team were re-writing Word from scratch, which is a thing programmers always think they want to do, rewrite it from scratch, [since] it's going to be better. And Excel, our theory mostly from Chris Peters was, that's stupid.

Yeah you rewrite it from scratch, it looks clean at first, but then once you go and deal with all the special cases, it looks just as bad as they old stuff did, which was just a giant waste of time. So it's completely different philosophies. So he goes, and we had a much better track record, frankly, then Word did on meeting our goals and doing well in the market. So he goes over and gets in a fight with a dev manager. He's his boss. Dev manager quits. See you later.

So he has no development manager. By this time I'm tech lead on Excel. So I'm lead programmer. And so he comes to me and says, come be dev manager on Word. I really like Chris, really respect, and so I'm like, yeah, sure, how hard can it be? I was managing it. By then, Excel had about 60 people and I was managing what's called a feature team. So I had a group of like seven or eight programmers working for me. Plus I was technical lead for the whole project. And when you're technical lead in a project that big, typically I would have a line of people waiting in front of my office. And they would just come in one at a time with their problem and I would tell them, go look at this, go do this, go work on that, here's the answer to your problem, go. And they would just come one after another. Plus I'm trying to do my own stuff.

But I was good at it by then. I could handle that. It was totally fine. Anyway, so I go over to run Word development, and it was a very different place than Excel. It had a different culture, programmers were a little older, some were married-- I didn't know very many married Excel programmers--, there were some women on the team-- no Excel women programmers. Very different culture. And it was a culture at war with itself because there was this team that was in charge of maintaining the old version of Word, and they were the hot shots working on the new version of Word, basically looking down on these guys. And when the dev manager quit, Chris said, I'm going to cancel this new version, it's stupid, all of you guys are going to work on the old version.

So these people are pissed because not only do they have to throw away their work, they have to go work on the old code-- which they think is gross-- but they have to work for the people who they'd been pissing on for months, who are like the lesser people, who didn't get put on the new project. So this is my first job as a big manager, is to deal with this. And it was really a nightmare.

Spicer: How did you get them to get along?

Fries: It was really a nightmare. I came in for probably about two months. I tried to run it. First I tried to do things like the Excel way-- we would get together and we'd have these group meetings, and in Excel we'd all talk about issues and blah blah blah. In Word, I got everybody together in a room and nobody would talk. Like they would just stare at me. Nobody would talk. It's like, OK. This is harder than it looked.

Then I'm going around and all these hot shot guys-- and they were hotshot guys, they were really good-- they're all threatening to quit. I don't like who I'm working for, I don't like what I'm working on, blah, blah, blah. And I'm spending all my time with them, trying to convince them, no, stay, it's going to work, blah, blah, blah, blah. And finally one day, I'm driving home, and I just had this epiphany, and this phrase came into my head. And the phrase was, if your job isn't fun, you're not doing it right. And my job sucks, and I realize it's my fault I'm not doing it right.

And I came in the next day and I said to everybody, had a group meeting I said, this is what we're going to do. We're going to make one version Word. We're going to kick Word Perfect's ass, it's going to be an awesome program, and if you want to be part of it, great. If you don't want to be part of that leave now, so I don't want you on the team. And probably half of the hotshot programmers left.

And everything was great from then on. It was so great, because the people who stayed were dedicated to the mission. And we hired new people who were great. And we had a very clear, focused goal, and we maybe that person were internal code name was T3. Ed Fries: T3 was a reference to the *Terminator* movies, like *Terminator 3.* Because it was the sequel to Word 2, we thought it would be called Word 3 when it shipped, but because Word Perfect was at version 5, the marketing people decided to call it Word 6.] It came out as Word 6*.*

Spicer: Can you tell us where Word came from? Like version one, where does that come from?

So it's before my time. And I never really knew Word. I was a manager on Word and I did some programming on it. I was not like the technical lead or like Excel I really understood in internals. Word, there are parts I didn't venture into. But the story is I understand it, Word started with Charles Simonyi.

So Charles, when he was at Xerox PARC, worked on a graphical word processor.

Spicer: Right. Bravo. I think.

Fries: Yeah. And I believe at that time, he worked with a guy named Richard Brody. But certainly when it came to Microsoft, Richard Brody is the one who implemented Charles' idea. So there's some conflict between these two about who created Word. Richard would say-- and Richard is a very smart guy-- Richard would say, he was the one [who created] Word. And it's true in the sense that he programmed it.

But there's a thing called the Piece Table, which is the core way that Word keeps track of data. My understanding [is that this] comes from Charles, and Charles' ideas. So anyway, that's the core of Word, is those two guys.

Both these guys are incredible characters, by the way. And different, but I mean Richard Brody ended up leaving the company, he goes on *Sale of the Century*, the TV show, and just demolishes all the people.

Spicer: What is that show? What's their thing?

I don't even remember. All I remember is *Sale of the Century*, he beat everybody all week long, there'd be any random question and he would know and be like, T.S. Eliot. None of the other contestants could keep up with him. He won everything you could win. Won the car, Ford Probe, and then that was his car for years. And then he went off and pursued his dream to become a major league umpire.

Spicer: Wow.

Fries: And he went and tried really hard to become a major league umpire, and he just couldn't-- he did minor league, he did college, but major league umpires turns out have to be in a really good shape, apparently.

Spicer: Oh yeah. I'm sure.

Fries: Like he couldn't run a fast enough for 40 or whatever. And he wrote a couple self-help books, and then he became a professional poker player. That's what he's been doing recently. The ”Quiet Lion” Richard Brody.

Spicer: Interesting.

Fries: And Charles, more stories about Charles. I mean, Charles is the only two-time space tourist, the only person who's been into space twice, as a tourist. But anyway. So these are like the guys I'm working with.

Spicer: He's a neat guy, Charles.

Fries: Yeah, he is.

Spicer: Let's see. OK. So how do you transition from the office group to the Xbox?

Fries: Yeah. Good question. So maybe one more Word story?

Spicer: Yes. Please do.

Fries: So we're getting near the end of T3, the first version of Word that I managed, what would be known as Word 6, and we're missing our goals. I'm new to managing this team, but things are certainly better than the old days. But we're at same situation, we're drawing that bug line, and I on Excel, we would meet our line. People would just, they'd stay late, they'd work hard. On Word, every week, 10 percent off. And I tried everything I could think of. I tried to being really nice to people and helpful, I tried being really mean to people, and nasty, I tried everything I could think of. And every week we're missing by 10 percent.

Spicer: Is this a cumulative situation?

Fries: Yeah. If I don't solve it pretty quickly, it's going to be a problem. And finally, as a final act of desperation, when all the ideas that I had failed, I actually asked the team, like if they had any ideas.

Spicer: **"**What does it take to motivate you?"

Fries: Asked how we could do it. And pretty quickly, through having a group conversation about it, we settled on this idea, which was called Workaholic Wednesdays. And the theory behind Workaholic Wednesday was, one day a week, we would all work late, really late, as late as we had to, until we met our goal. OK. The rest the day, it was like crunch, but put into a single day, because most of these people had families, and they needed to be home. But if there was one day a week that they could dedicate-- this was what I learned from asking them-- then they could just let their family know, I'm not going to be home Wednesday night. So we did Workaholic Wednesdays. So Wednesday, I'd bring in dinner at six, I'd bring in a snack at nine, another snack at midnight, and we were often there till 2:00, 3:00, 4:00 in the morning, working very, very late.

And we would leave when we've met our goal. OK. So when we got that extra 10 percent, we were done. We would leave. Everybody knew what the bug count was that [they] had to meet. And once we got our count to there…

Spicer: So there was no expectation they would stay late on the other days. It was the one day you alotted for-…

Fries: …just the one day… Workaholic Wednesday was psycho workday. But if you can get ahead on your bugs other days, maybe we'll get out a little earlier on Wednesday. And so it had a nice effect in that sense. And we started to meet our goals, every week, which is good. It was brutal on Wednesday. It was definitely brutal.

The bad thing was, the testers started to stay later. And every time a tester entered a new bug, we were one step farther behind. And so the testers didn't work for me. They were a separate group. So I couldn't control them. I could only sort of influence them. So I said, I made a rule, I said, I don't want to see any new bugs on Wednesdays after 9 o'clock. If a bug comes in after 9 o'clock, something bad is going to happen to the tester, and it's that bug. I'm not [going to] say what it is, but I would not want to be that tester.

So I put this out. So of course, some snot nose tester decides to challenge my rule. And there's a bug at like 9:05 on Wednesday. What he doesn't know is that I've gone around and I've given cans of Silly String to every programmer, 60 programmers, cans of Silly String. So everybody goes down at his office, and just fills the office was Silly String. I mean, covers the tester, covers the entire office, and it was a thing of beauty. It was exactly what I hoped for. But the problem was, people we're a little crazy on Wednesdays. They didn't stop with just that one office. Then they spread out in the hall and they did the whole test wing, and then they went up and they did all the development wing, and there was Silly String across two whole wings of this building. Everything was trashed. We had a great time, but everything-- and people just went wild, I mean they went crazy.

Spicer: You guys have fun at Microsoft.

Fries: Yeah.

Spicer: Occasionally anyway.

Fries: I tried to have fun when I was there. So about 2:00 AM or so the cleaning crew would show up, the janitorial service. And they looked at our halls and they refused to even come into our hall. So I had to hire an outside cleaning crew to even clean up.

Spicer: A SWAT team.

Fries: I did, I had to pay for an outside cleaning company to come in and clean up all the Silly String so that then our Microsoft cleaning crew would do their job. But it was worth it. It was totally worth it. And in the end, we met our goals and we shipped the product on time and it was all--

Spicer: Oh that's great.

Fries: happy, happy story. That's the Silly String story. I was on Excel for five years roughly. I was on Word for five years roughly. At the end of that time, my boss had moved on, Chris Peters had moved on and become a vice president working on some other stuff. I had a new boss. A little bit rougher relationship between him and me.

And I was approached at that time and my managers basically said, hey, you've been a development manager for five years. Next step up would be for you to be a Business Unit Manager like Chris had done. Maybe you'd like to do that. And maybe I would, yeah. It'd be Interesting to think about. I don't know anything about business but OK.

So they sent me down to California to look at the PowerPoint team, which I didn't really like. I looked at some TV initiative stuff that was going on in the company. Interactive TV stuff. But the thing about me is I had originally written those games like we talked about.

But I had played video games, that was what I did when I wasn't at work. I loved video games and played them all the time. That was my hobby away from work. So I wasn't writing games at that time but I was definitely playing them.

So I got to thinking about Microsoft's games group. And I happened to run into somebody at an airport, who worked in that group and I asked him about it and he said, oh yeah, our boss just left and we actually need a new Business Unit Manager. It was great.

So I wrote an email to Patty Stonecipher, who was the head of that group and said hey, I really want to do this job and I think I'm the right guy for it and blah, blah, blah. Interviewed with her, she was willing to have me have the job.

But then my management freaked out about it and multiple vice presidents called me into their offices and told me I was committing career suicide. They told me why would you leave Office, one of the most important parts of the company, to go work on something nobody cares about.

Spicer: Interesting.

Fries: But I'd been at the company long enough and had enough success and enough clout that I could commit career suicide if I wanted and I could basically do what I wanted. And so I said no, put my foot down this is really the job I want, this is what I want to do. And finally they just rolled their eyes and gave in. Said fine, go do your game thing. I went over to this new group.

Spicer: Not exactly a ringing endorsement.

Fries: No, it definitely was not. No. I had to fight for this job.

Spicer: Was the project itself viewed as kind of kind of an orphan within Microsoft?

Fries: Oh very much so Yeah. Was in a little group called the Kids and Games Group.

Spicer: Really? Literally the “Kids and Games Group?”

Fries: “Kids and Games Group” was what it was called at that time. There was a group doing stuff for kids and a group doing stuff for games. And they were doing flight simulator. But I had met with the team over there and they had some interesting new projects in development.

One of which was a game with a little company in Texas called Ensemble Studios, and they were working on something called *Age of Empires*. And I was a big *Dune 2*, *Command and Conquer* fan and so I looked at this and I was pretty excited about that. And some of the other stuff that they were doing.

There were some real game industry people over there. People like Stuart Moulder who came from Sierra, and just a whole bunch of people.

So I went over there and it was nice. Almost from the very beginning it was nice because-- well in some ways it was nice, and some ways it was challenging. It was nice in the sense that nobody really cared about what I was doing. It was challenging because, I didn't really know what I was doing.

And I had a problem where my bosses kept quitting. So I originally worked for someone named Charlotte Guyman and three months in she quit. And then I was working for a vice president and then they quit. And then so technically--

Spicer: Is that J Allard or Seamus Blackley?

Fries: No, no, no, we're not into him yet.

Spicer: That's way in the future?

Fries: Yeah, yeah, way in the future.

Spicer: OK.

Fries: Neither [were] vice presidents till much later. So no these are people you wouldn't know but they were internal Microsoft people. And then they quit and then now all of a sudden, I'm reporting to this senior vice president, who's one of the people tried to talk me out of taking the job in first place.

And I have this P&L review meeting. I'm not even sure what a P&L is at that point. And he's going over my profit and loss statement, and he's jumping from line to line on the spreadsheet, and I'm just trying to keep up with him.

And he's like, how come your revenue is growing by 6% but you're growing your marketing spend by 9%? I don't know, I inherited half this stuff, you know. And the other half I don't understand. So it was tough at the start from that sense.

Yeah, I didn't have any real mentorship, I mean, especially after Charlotte left and people would come into my office like they were working on this F1 game, racing game, Formula One racing game. And this guy walks in my office and says, we need a million dollars for to sign the F1 license. I'm like OK, I'll get back to you on that.

I go and talk to Charlotte and I'm like somebody just asked me for a million dollars, what do I do? She's like, well, it's up to you, it's your group. Here at this level, you need approval from me, at this level you need approval from here. But generally, just do what you think is right.

It's like, OK. I'm going to go do what I think is right. And that's basically how I ran the group for the next bunch of years. So probably four more years we just grew our PC gaming group. Grew it up, grew it up doing more and more games.

Age of Empires was a huge success for us, brought in a lot of money. *Flight Simulator* was also very profitable for us. It allowed us to go and buy multiple other companies. We started to expand, we got up to 300, 400, 500 people. And then by then we were doing pretty well.

And then that's when Seamus and some other crazy guys, who were kind of low level guys working for the DirectX team, came in to see me. And they had this idea to take Direct X and make this “DirectX box.” DirectX is the Windows API for doing gaming.

And so they wanted to spread that into the console world through the Direct Xbox, which was basically just a Windows machine. At first the original concept was it's a Windows machine but it doesn't act like it's a Windows machine. It acts like a game console. You put in a disk and it plays the game.

You don't know that it is installing it [Windows] in the background and doing all the gross Windows stuff that a game has to do. It just acts nice and easy to the consumer. That was the original pitch. I had been thinking about boy you know, I've grown our PC business a lot and the next place for me to grow the business would really be if I could get in the console business.

But I don't really know anything about the console business. Sony and Nintendo aren't the friendliest companies to Microsoft. I'm not sure how to make that transition. So here these guys came in and I pretty early on decided that this was fit with the strategy of where I was trying to go with our group. And that I could team up with them, and we could try to push this idea of Microsoft getting into the console business.

So I was a pretty senior guy at that point so having me on board really helped. We brought in some other people, who are pretty senior. Rick Thompson, who was the head of the hardware group at that time, really spearheaded the early stuff. And one of the first things that we had was we had a big fight with another group within Microsoft. And so as often happens with ideas like this at Microsoft, somebody already owns your idea.

And so there was a group of people who were ex-3DO people. The 3DO console, doomed 3DO console [team], who had come to Microsoft, and they had worked as part of the Windows CE team--it's an embedded version of Windows--to put Windows on the Dreamcast, the Sega Dreamcast.

And so the Sega Dreamcast, if you look, actually has a little Windows logo sticker on it. Somebody didn't peel it off. And there was a way to reboot a Dreamcast into a Windows mode, believe it or not.

Spicer: Wow.

Fries: Virtually no one ever did it, and there was almost no reason to do it. But that shipped. They're next thing was to do a console. So we had to have a fight with them to do this console. So they got all their vice presidents together, we got all our vice presidents together.

Maybe Rick [Thompson] was a vice president . . . I wasn't certainly one of them. J and Seamus wouldn't be vice. Seamus never was a vice president. Jay wouldn't be until after I left. Anyway we got our vice presidents together, they got their vice presidents together. We battled and came into a big meeting with Bill and Steve. Bill chose us, nuked their team. The remnants of their team, their team explodes in flames. Poor guys are like half dead. We pick up a few remnants, they join our team.

Spicer: What is the difference between the two teams again? One is heading towards a console, the other one's a Windows PC?

Fries: Yeah that's a good question.

Spicer: Is that the division?

Fries: So their version, their idea of the future was that we're going a build a completely custom console. It's going to have custom operating system, custom hardware. It's going to be like the PlayStation. OK. And it's going to be this custom built, screaming game machine.

We're like that's off strategy, so non-Microsoft, we're going to build a machine that's based on x86 architecture that uses a graphics accelerator that's already out in the market. That uses standard PC bus and it's going to run Windows. They're like, you're crazy, it'll never work. We're like, you're crazy, you're off strategy. Big battle. We win.

Spicer: OK.

Fries: We're more Microsoft then them. So we win. So then we spend the next year figuring out what we're really going to do. And then we come back with a big meeting.

Spicer: What year would this be?

Fries: So battle end of '99. Yeah, battle was in '99. Big meeting I'm about to tell you about is in 2000.

Spicer: OK.

Fries: February, 2000. Famous meeting called the Valentine's Day Massacre, OK? So we've spent a year, basically, since this last meeting. By then Rick Thompson has left because he's decided this project

is doomed. He doesn't like it. A new guy come in. My boss for many years, named Robbie Bach, he is the vice president over me.

We bring in J Allard to do systems stuff. Todd Holmdahl to build the hardware. That's the core team. Then we add a marketing guy. We have a couple different marketing people over the years. J's doing system software in third party. I'm doing first party games. Todd's doing the hardware. We work for Robbie. OK?

So we all go into this big meeting February, 2000. Valentine's Day Massacre. On Valentine's Day, 4 o'clock on Valentine's Day. Board meeting, it's our check up meeting with Bill and Steve, to tell them a year later, here's the project, here's what we want to build and we need approval to spend like a billion dollars to make this all happen. Because next month is the Game Developers Conference. And we're going to announce this officially at the Game Developers Conference.

So Bill walks into the meeting, he's got our PowerPoint deck, throws it down on the table, he says, this is an insult to everything I've accomplished at this company. There might have been a few swear words mixed [in] there. We're all like, we'll step back.

The room is the Microsoft board room. So about as serious a room as you can be in. And it's us and all vice presidents around this table. Bill throws it down, and then he just starts yelling at us. And he's mad because it no longer runs Windows. OK? Now the whole reason, one of the whole reasons, he picked us a year before, was because we ran Windows,

Spicer: Right, what happened?

Fries: In the meantime, we decided running Windows was a bad idea and that they were right. And if their plan was here and our plan was here, we've moved somewhere in the middle. OK? Where custom systems software but it's still based on x86 hardware and things like that.

Spicer: OK.

Fries: So we're orienting his mind to this new thing, which is somewhat [of a] painful process. So Robbie and I, we know why he's mad, and so we look at J, who's in charge of systems software. And J's just like, words are not coming out of his mouth. He's not normally like this. He's actually normally really good with Bill, but Bill just came into the meeting so aggressively.

So I'm like, fine. So I start to argue with Bill about it. Bill shoots me down. Robbie starts to argue with him about it. Shoots Robbie down. Then J steps up and argues with him. And it just goes on like that.

Then Ballmer jumps in. And Ballmer-- when they're both in the room, Bill does all the technical stuff and Ballmer does all the business stuff. So Ballmer's going through our business plan going, you're going to lose a billion dollars and this and that, and we're like yeah, we're going to lose a billion dollars, that's the plan.

And then they're just yelling it, just taking turns yelling at us. For hours. So it's 5 o'clock, 6 o'clock, 7 o'clock, 8 o'clock, Valentine's Day. We're all looking at our watches, we have wives and girlfriends and not only are we being yelled at for hours at work but we're in big trouble back home too, right?

And so this is just going on and on and on up around 8 o'clock there's a Microsoft vice president, technology guy named Craig Mundy. And Craig has been sending out these sort of paranoid memos for months, maybe even years, about Sony and the threats Sony made, [and what] it represents to the company. And the memos are all like, well look, they just put this machine in the home [and it] has a hard disk. And this other thing that people are buying from Sony has a processor in it. If these all got together, it would make a PC that would be a threat to Microsoft. That was roughly the tone of these memos.

And so he waits for his moment between all this yelling and then he just asked a simple question. He says, what about Sony? And Bill and Steve stop. Because they've been reading his memos. And they look at each other and say what about Sony? What about Sony?

All of a sudden, Bill says: I like this plan. I'm going to give you guys everything you want. I'm going let you be separate from the company, I'm going to let you go off strategy and not do Windows. I'm going to let you-- and then Ballmer jumps in and he's like yeah, you guys can have whatever you want, you can go do this thing. We really want you to do this thing.

Spicer: That's great.

Fries: And five more minutes, five minutes of go do it, we love the plan, it's awesome go do it. And then we're out of there 8:05. And I turn to Robbie and said, that was the weirdest meeting I've been in in 15 years at Microsoft. And we just shake our head and we walk out of there and we have *carte blanche* to do the project.

Spicer: That's great. So you've got a plan to go spend a billion dollars and develop this platform. And how does the software-- what was your role in this plan?

Fries: So now my job is to put together a games portfolio. OK? And the games press is really skeptical that I can do it, that we can do it. And I face this when I first was building Microsoft's game business. Microsoft's going to do entertainment. You're an operating system company, you're an Office company.

And over time on the PC side, with the PC press, first of all I could spend time with them personally and they learned that I'm actually a gamer, that I have background making games, that I love games. And we started to put out better games and that convinced them. But I've got a whole new set of press, a whole new platform to convince.

And people are super-skeptical. And frankly, I'm a bit skeptical because games take about three years to build and I've got a year and a half before launch.

Spicer: For Xbox.

Fries: For a platform we don't have yet.

Spicer: Right.

Fries: To build. So, I'm desperately-- after I get approval-- I'm desperately trying to put deals together.

Spicer: Did you guys have hardware development systems?

Fries: They were PCs.

Spicer: OK. And that was like a Power PC?

Fries: That was later. Power PC was in [Xbox] 360.

Spicer: Oh OK, right.

Fries: So I have a lot of connections in the game group and I'm calling on all of them. I'm trying to figure out what I can do. Early on I hear Lorne Lanning might be available, who did the *Odd World* series, which was a Sony exclusive.

And yeah, so I grab onto that and the lawyers stay up all night to put this deal together and so we have our first big deal to make this thing called Munch's Oddysee, which was one of our ship titles with Lorne Lanning, well-known console developer, buys a lot of credibility for us. Press loves it.

Discovered there was a Sega Dreamcast game called *MSR Racing* from a group in London, called Bizarre Creations. We grab on to that and turn that into something called *Project Gotham Racing*, because they already have a racing engine and it's pretty much working. We can just add new tracks and rev up the graphics for the new system. So we've got that going. And just everywhere I can, I'm trying to get these projects together.

Then one day, my phone rings and it's this guy Peter Tamte. And I had met Peter Tamte at a few game conferences and he's the head business guy for a little game developer in Chicago called Bungie. And Bungie I had played some of their early games. I have a lot of respect for them. But they were small and struggling and they were going out of business.

And his call was to tell me that they were going out of business. And that they were looking to be acquired by somebody. And they had this new thing that's kind of a prototype that they and shown for this thing called Halo and would I be interested.

And I said yeah, I'm very interested. I have a ton of respect for your team's work and I need teams, I need content desperately. And so we started talking. And it was complicated because they had already sold a third of their company to Take Two, and they were using Take Two as their publishing partner. And so I had to talk to the head of Take Two, a guy named Ryan Brant, and we had to negotiate how we were going to split up acquisition in this company.

And I only really wanted the new project *Halo*, and I wanted all the people. There is a second project called *Oni*, and I said we would finish *Oni* for him. And then I would move those people. The core team was in Chicago, and I moved them to Seattle. The *Oni* team was here in San Francisco.

So I said they'll stay in San Francisco, finished *Oni* for you and then I'll move them up to join me to finish *Halo*. And you can have all the back catalog. You can have all the games they made up till now. All I want is *Halo* and the team.

And he agreed to that and we did the deal, three-way deal where, he's happy, I'm happy, they're happy. Move them out to Seattle.

Spicer: Had you seen *Halo*, or any, what did you think?

Fries: Not when I first had the call.

Spicer: What made you think it was--

Fries: I didn't know what *Halo* was. I had played, earlier, a bunch of games and I liked them. And that was generally the kinds of people I work with were people who I'd play their games and had respect for.

Spicer: Right.

Fries: But they had the *Halo*-- if you see that first *Halo* trailer and it's around, it's funny. It's got like the little animals running around. Stuff that never made the game. Because they were a Macintosh developer first.

Spicer: OK

Fries: It was actually a Mac thing. Here, let me tell a little Mac story. So we do the acquisition and then one day I'm in my office and I get this mail from Steve Ballmer, which was unusual, and it says, “Steve Jobs is mad. You bought some company called Bungee. He is yelling at me about it. Call him and calm him down. And here's his number.”

Steve Jobs, OK. So I pick up the phone, call, Steve Jobs answers the phone. But I'm ready for the call. I know why he's mad, he's mad because I just bought pretty much the last Mac game developer on the planet.

And I tell him hey, I like the Mac. I worked on multiple versions of Office for the Macintosh. Probably a fib about me liking the Mac, but certainly true, I worked on multiple versions. Worked on the ill-fated Mac Word 6, which I didn't mention, which is . . . but any way.

I would love to see our games on the Mac. I would love to put out a Macintosh version of *Halo*. But I'd also like to have Mac versions of the *Age of Empires* and other things. If we could set up a company to port our games to the Macintosh, then you could have more than just *Halo* on the Mac, you could have a bunch of Microsoft games on the Mac.

And he was kind of like, yeah, yeah, that sounds good. Here, work with this other guy on my team, you can work out the details with him. OK, well it wasn't just a random idea I had. See Peter Tamte, the guy who originally called me about a Bungee acquisition, he was the only one I didn't have a job for. OK? Because when I acquired them, I needed the development team, I didn't need the business guy.

And he had told me that he wanted to start this Mac porting company. So I got Apple to pay for it. So I got Apple to fund his new start up. So he got a job and got to create the company he wanted. I got Steve Jobs off my back. And I got a bunch of our content ported to the Mac, which we got paid a royalty for. So

it's all good; the only bad part of the deal was, me and the head of Bungie, a guy named Alex Seropian, had to go to the next Macworld and be onstage with Steve Jobs. So, it's uncomfortable to be a Microsoft guy in front of 10,000 screaming Mac people. I will say that. So we fly into New York the day before the show, and Steve, we're in the cab coming in from the airport in New York. And the phone rings and it's Steve's handlers.

And they say, oh, the rehearsal's really not going well. Because we were supposed to go in and do dress rehearsal. And like, rehearsal's really not going well. Steve's really unhappy. We'll call you back in a few hours. So Alex and I go, we check in our hotel, have some dinner, phone rings again. They're like, oh, he's still in a bad mood. It's still not going well. Just come in tomorrow.

And I'm like, the event's tomorrow. It's like 9:00 AM tomorrow. And they're like, yeah, just come in just before the event. We'll brief you just before the event. OK, we're going to be on stage in front of 10,000 people. We have no idea what's going on. OK, so we show up the next morning and like, five minutes before the event, Steve Jobs comes over, shakes my hand. Only time I ever met him my whole life.

He says, I'm going to say this at some point. You and Alex walk on stage, shake my hand on stage. Talk for 30 seconds, say whatever you want. Alex talks for 30 seconds. Then you guys say goodbye, walk off stage. OK, so that's what we did. I mean, we survived. There were no snipers in the audience. We got to be on stage with Steve Jobs. It was fun.

Spicer: Interesting.

Fries: So anyway, we should probably cover the Xbox launch and stuff like that.

Spicer: Yeah, so tell us a bit about the launch of the Xbox and the importance of *Halo* to that launch.

Fries: So we were really in a tricky place, because we didn't know whether-- first of all, we were PC developers. Most of the people we had brought on board were PC developers-- Bungie PC developers. And so, we didn't really know the console thing. And the console games at that time were very colorful, flowery, and there was Mario hopping around, and *Sonic the Hedgehog*.

And so I would get questions from the console press like, what's your Mario? You know? And I couldn't say, it's the Master Chief, you know? Because he's not colorful and not bright. So I'd get these weird questions I couldn't answer. Also, we came from a world of PC gaming which at that time was really being revolutionized by connected play. So even the original *Age of Empires*, the big part about it was being able to play online with other people. And certainly *Doom* and *Quake*, things like that had been out.

And so first person shooters were all about playing with other people. We built the Xbox with a broadband connection right in the box, you know? And so, that was a core of our strategy, right? But in the console world, people had dabbled with connected play for a long time, but nobody really had made it work. And so they didn't really believe that could ever work in a console. And when I showed them Halo, in a way, it was their worst fear.

It was like, “this just proves they don't know console. It's clearly a PC game. A first person shooter. It's dark, it's violent. This isn't Mario. And this is one of their flagship titles? They just don't get it. They really don't get it.” That was basically the response that I would get.

Also we're developing this-- I mean, *Halo's* in a crash development program, because it's basically a program starting from scratch with less than two years to be built. Really hard. The team is super, incredibly talented, but they have a really, really hard job. And the hardware is under development at the same time. E3 is in June before we launch in November, 2001. The best we have is hardware that's running half speed.

So they're showing their game on half speed hardware, and people aren’t really feeling it. And so the games press is ragging on us, and they're ragging on *Halo* in particular. Penny Arcade, you know the popular online comic [strip], is saying bad things about *Halo*. There's a famous Penny Arcade comic where they say *Halo* is shit. Anyway, it goes on and on. And so, coming in to launch, we're really, you know, second guessing ourselves.

Well, we've got Lorne Lanning and Oddworld, maybe that will be our big hit. Because that's more console. Will it be *Halo*? I don't know. We love *Halo*, we love to play this game. But maybe we're just PC guys and we don't get consoles.

Spicer: And *Halo* was exclusive to Microsoft, right?

Fries: Yes, we own the team. It was always exclusive. So we really didn't know, coming into launch, what was going to happen. And so we got to just do it and see.

Spicer: How we're sales in the first year? Or first few months?

Fries: It definitely exceeded our expectations. And *Halo* was far and away the game that people loved to play. It really- if we didn't have *Halo*, I don't know... I think the Xbox would have just failed. I really, it was fundamental to the success of Xbox. And it really helped Xbox redefine what console gaming was. That it could be grittier, that it could be darker, that it could be harder core.

Spicer: Maybe less toy-like, in terms of the game philosophy.

Fries: Less kiddie. You know. And a lot of that came from Japan. Our big competitors were Japanese, both Sony and Nintendo. And the console business had been controlled by the Japanese for so long that there was this Japanese philosophy to everything. It's like if we had only seen anime movies for 20 years, and then somebody comes out Godfather or something. You know what I mean? It's like, that's not anime. The eyes aren't big. It's not a perfect analogy that I'm making.

Spicer: So your competitor at this time is the Sony PlayStation?

Fries: Sony PlayStation and Nintendo 64. Sorry, Nintendo Gamecube was theirs. And it was PlayStation 2. So Xbox, PlayStation 2, Nintendo Gamecube.

Spicer: And did Sony have its own exclusive titles?

Fries: Everybody had their own exclusive titles.

Spicer: *GTA*? [Grand Theft Auto] Is that later?

Fries: It was exclusive for a while. It had originally come out on Sony PlayStation 1, I believe. Exclusive. And then it was exclusive for a while on Xbox, but we eventually got a version.

Spicer: So, do you have any sort of statistics on the number of people who bought an Xbox who bought Halo?

Fries: I don't know the exact numbers. I mean, it was north of 25%. It was a big number.

Spicer: Did you ever co-package them, like if you buy a console, you get a free *Halo*?

Fries: I don't remember. That might have happened later. Be a marketing thing. That wasn't really my deal. My deal was to make the games.

Spicer: And *Halo* now is still going on, still a franchise, right?

Fries: Yeah, but it's very complicated history. I ended up leaving Microsoft about three years later, so I left Microsoft in 2004. After I left, there was a big fight between the Bungie team and my replacement management. And ultimately, Bungie negotiated a way to leave the company and become independent. They had to do multiple versions of *Halo* to earn their independence.

And now they're completely free of Microsoft and they're working on a new game called *Destiny*, for Activision Blizzard. Meanwhile, *Halo 4* was done by an internal Microsoft team called 343 Industries, which is run by a couple women, actually, who used to work for me.

Spicer: Right. Let's see. Well, Microsoft Game Studios. Tell us about how you got put in charge of that and what its growth was like under your--

Fries: Didn't we talk about that? Ultimately, I renamed it Microsoft Game Studios. It started, like I said, as Kids and Games.

Spicer: That's right, OK. And this is the group that grew from 50 to 1,200 people?

Fries: Yeah. So by the time we launched Xbox, we were about 1,200 people. After Xbox shipped, I got put in charge of third party. They took third party away from J Allard and put it under me. So then all the content was under one person. And then J could focus on system software stuff. And so then I started dealing with Electronic Arts and Square and other third party developers, as well as running first party.

Spicer: And how would you say game development has changed since then? Since the early Xbox days to today?

Fries: Yeah, it's changed in a lot of lot ways. Basically what happened with console games between then and now is budgets have gone up and up and up. Until they've gotten really astronomically high. *Destiny*, the rumors for that game are north of $300 million. It could very well be the most expensive game ever made, by the time it launches this September.

Spicer: This is for Xbox?

Fries: It'll launch across multiple platforms. They have 600 people working on it in an office space in Bellevue. At the high end, the games have gotten massive. The teams have gotten massive. The stakes have gotten massive. And what's happened to the publishers is they've got more and more and more conservative. They do less and less and less titles every year because they're more and more expensive. So they're much more likely to do a sequel than to do something original.

Spicer: Kind of like Hollywood.

Fries: It's exactly like Hollywood. And so this huge gap has opened up in the market. There's the guys at the high end, and there's nobody in between. And then at the low end there is mobile and crowd funded and all this new stuff, right? And those markets have been incredibly explosive, incredibly exciting, like huge.

Spicer: Like ten-person kind of companies, small.

Fries: And so you go, oh, it's just a 10-person company, like Mojang, that's made a billion dollars with *Minecraft*. Or it's 100-person company like Supercell, who has done *Clash of Clans*, and *Heyday*, and just sold half the company for $1.5 billion. I mean, the little guys are big now. The traditional people who owned the console world, these publishers have kind of gone off on their own little planet. And meanwhile, huge new companies have grown up in the space that they left behind.

And that's exciting. Tons of cool stuff happening down there. And then what's happening is this crowd funding. So Kickstarter, and direct connection between the customers and the creators, is starting to make it so that some game developers can self-fund, starting to fill into this gap. Starting to have $10 million budgets, or $20 million budgets for games, by pre-selling directly to the fans. Chris Roberts, who we worked with in the old days, is doing a thing called *Star Citizen* now. Through crowd funding he's raised $43 million dollars as of today.

So that gap is getting filled in from below in a really interesting way. And then you have digital distribution. And you have mobile tablet. And then you have free to play. And then this whole new free to play business model is completely revolutionizing everything. So in a way the last few years of the game business have been more exciting and interesting than any time before.

Spicer: There's a sort of bigger space for more people to get involved?

Fries: And for littler teams. Which is, to me, is awesome. I mean, it's back to like, where in a guy in a garage can make a game and have it be interesting and important and fun.

Spicer: Yeah. I heard an interesting description of why big companies find it hard to innovate. And that's because in a big company, you've got people that are sort of geared up to do certain things, certain competencies, and so on. But when you take on a new project or go in a new direction, there's a lot of them that aren't really the right fit. If you start a new company, you get exactly the people you want for that job.

Fries: And you really see that in these big game companies. They become more and more specialized. In a little game company, you have a programmer and an artist. That's pretty much it. Maybe you have a designer if you're lucky. Designer, programmer, artist. Big companies don't have an artist. They have 2D texture artists. They have 3D concept artists. They have animators. Animators don't paint. They don't draw. There are character artists. I only do characters.

And so that specialization, which lets them do these huge, high end projects, actually really interferes with them then, coming out and doing a small project. Kind of like what you're saying. They become so specialized that they're not what they need to be.

Spicer: Also they're really rolling the dice much more strongly that way, because then they basically are counting on blockbusters.

Fries: Yeah.

Spicer: Every title to be a blockbuster.

Fries: Tough to say which is riskier. I mean, yes, the blockbusters are risky, but there's so little competition at those high levels of budget, the projects have to be successful. And they kind of make them be successful. Otherwise they're hosed.

Spicer: They've got the formula down pretty well?

Fries: There's so little competition in the sense that gamers want something. Anything. All right, I'll take *Call of Duty 17*, you know, because I need a game to play. There's so few games coming out. The other end of the spectrum, massive competition. Tons and tons, hundreds, thousands of iPhone games coming out every single day. And how do you get someone's attention? How do you get them to see your game? Even if it's great, how does your game get attention on iPhone or Steam or something like that?

And so there it's like this just bubbling mass of just tons of stuff. Most of it's crap. Most of it never sees the light of day, I mean, it comes out in the store but no one plays it. That's super risky, too. So there isn't really a safe part of the market. But you know, that's entertainment. It's a risky business.

Spicer: I saw in an interview you did recently in which you were speaking about the Seattle game developer community and how amazing that was. I think you mentioned there were over 150 companies.

Fries: Well over 300 now.

Spicer: I guess that was an old interview. How did that happen? And did Microsoft have a role to play in that?

Fries: Yeah. So I think that it happened because we just have a long history of the games business in [the] Seattle area. Seattle was Nintendo's distribution hub going way, way back. And Nintendo had a software group there that started making games. They created a school called Digipen that started to turn out talented game developers, game artists. Microsoft was there. Sierra was there in the early days. Electronic Arts had an office there. So there were a bunch of old game companies in that Seattle area.

And then you pour on top of that just this tech talent that you have in Seattle. That's a lot of just tech people who would-- most programmers would love to work in the game business. I mean, a lot of them would because it's kind of a sexy thing. So it basically went out of that. And then, what happened is, guys get together, they form a team. It's successful, or it's not successful. They break apart and they form two teams, smaller teams. And then those grow and are successful. And so there's just this critical mass of growing and splitting and starting new teams that's happened there.

Spicer: Wow, that's amazing. That's an incredible number of companies. Can you tell us, just my second to last question, what is Microsoft's relationship, or was it at the time, with EA [Electronic Arts] and with the early Xbox?

Fries: I mean, we talked about acquiring EA, potentially, at the time. I remember a meeting we had with Bill Gates where it was brought up. I was clearly against it, because I wanted to build a company like EA within Microsoft. I didn't want to buy EA. If they bought EA, I would have left. Because they wouldn't need me, they'd have EA. EA was my competitor in some sense, especially on the PC side. We were often competing for deals.

We were trying to buy Westwood in the early days. *Age of Empires* had been real successful, and Westwood is the creator of *Command and Conquer*. And so if we had *Age of Empires* and *Command and Conquer*, we would own the real-time strategy category for PC gaming. And we had been in negotiations for months with Westwood. I got married and went off on my honeymoon for a week, and while I was on my honeymoon, EA stepped in and stole the deal out from under us.

I came back from my honeymoon and found out that we had lost this deal that I thought was in the bag when I left. So that gives you a sense of what it was like. But buying EA would have been expensive. I mean, at the time I think it was about $5 billion. I don't know whether it would've been a good idea or not, in retrospect.

Spicer: Because getting their support for a platform can make or break your platform, basically, right?

Fries: They were the big guys then. They're not the biggest publisher in any way now, but back then they were. And they really threw their weight around. They would not put anything on Xbox Live, for example, until we did some kind of royalty deal to cut them in. Some money and that kind of thing.

Spicer: That's it for my questions. Do you have any other things you want to talk about or mention?

Fries: I think I told enough stories for now. We didn't talk about-- I do some retro programming these days, which is really fun.

Spicer: Oh, yeah. Let's talk about *Halo 2600* and wrap up with that.

Fries: Yeah, so that's probably a good way to end. You know I started programming the 6502 [microprocessor-based] Atari 800, and I was at a game conference in Philadelphia. Little conference, gave a speech there. I was riding to the airport with some guys and one of the guys says, hey, you mentioned the 800. There's actually this book about the 2600. The 2600 was the first home game console, it came out in 1977. So, well before the 800. And he said it's called *Racing the Beam*. Maybe you'd be interested in reading it. I'm like, yeah.

So I got home, bought the book, checked it out. And it's an amazing book about how the 2600 works. And it's an incredibly nasty machine, because in 1977 they couldn't afford very much. So it's got 128 bytes of memory, only. And because it only has 128 bytes of memory, there's no memory mapped display.

Spicer: Is this video memory or system memory?

Fries: Total memory on the machine is 128 bytes. So you're like, well, how can you even have graphics if you only have 128 bytes? Well, the way you have graphics is, the program itself has to keep track of where the electron beam is on the screen. And it has to basically turn things on an off while the electron beam is going down, drawing the screen. Which is why the book is called *Racing the Beam*.

Your code, which is running on an incredibly slow processor-- so every time you do an instruction, the electron beam has already moved part way across the screen. Meanwhile, you're trying to change things in real-time as things are happening on the screen. Very, very challenging to work on, but for an old assembly programmer like me, that's part of the fun. So I read the book and then I started to look into it and well, how hard would it be just to make something simple? Kind of a “Hello, World” kind of thing.

And what I chose for my “Hello, World” [program], for whatever reason, was I drew a little pixel art Master Chief, and I tried to get him to show up on the screen. And I made that happen, you know? And once I

had my little Master Chief, I was like, oh, well, maybe I can make him move around. And so I hooked him up to the joystick and I could move him around the screen. And then I'm like, well, maybe I could give him a gun and make him shoot. So I had him shoot. Then I need something to shoot at. So then I made some enemies to shoot, and have the enemies shoot back at him.

And so I just was kind of screwing around for several months. I went to GDC, Game Developers Conference, and just happened to run into some old school guys I knew. And standing right there with them was a guy named Tod Frye, who did the infamous *Pac Man* for the 2600 back in the day. And there was a guy, Mike Mika, who I didn't really know, but who does a bunch of this retro stuff. Mike was in the press recently for doing a *Donkey Kong* where he replaced Mario with the princess, because he has a young daughter. Anyway, the story went viral.

But so, I'm running into these guys, Chris Charla, and Mike Mika, and Ian Bogost, who is one of the writers of this book. They encouraged me to go forward and make the game. And so I spent the next, kind of, four months trying to get it done in time for Classic Game Expo, which was in Las Vegas in July, I think. Anyway, that's where I released the finished product, *Halo 2600*. And I just, I didn't think anyone would really care. I just did it for fun.

Spicer: How big is the program?

Fries: The program is 4,000 bytes, 4 KB.

Spicer: Nice.

Fries: I refused to go-- there are ways to do bank switching to go above 4 KB, but I refused. On a machine that only has 128 bytes, 4k is the size of its address space. Because it uses a cut-down version of the 6502. So I think 4 KB is enough. So anyway, I released it there, and it got probably more press than I thought it should. Chris Melissinos was putting together an art show for the American-- the Smithsonian American Art Museum on video games. And he included it in the show called *The Art of Video Games*.

So he included it as an example of home brew. That's what it's called to the people who do this stuff, home brew. And anyway, and then I was contacted by the Smithsonian American Art Museum, and they said they had decided to start a permanent collection of video games. And they picked it as one of the two games to enter their permanent collection. So now it's one of two video games in the permanent collection of the Smithsonian American Art Museum.

Spicer: That's great.

Spicer: Thank you very much, Ed, for coming in to speak with us today.

END OF INTERVIEW

