

Oral History of Mark Zbikowski

Interviewed by **Mario Juarez** for the Microsoft Alumni Network

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Preface

The following oral history is the result of a recorded interview with Mark Zbikowski as conducted by Mario Juarez on September 3, 2024, at Microsoft Studios in Redmond, Washington. This interview is part of the Microsoft Alumni Network's Microsoft Alumni Voices initiative. The goal of this project is to record the institutional history of Microsoft through the recollections of its former employees, so that the information may inform and inspire future generations.

Readers are asked to bear in mind that they are reading a transcript of the spoken word captured through video rather than written prose. The content reflects the recollections of the interviewee. The following transcript was edited by the Microsoft Alumni Network, which holds the copyright to this work.

Interview

Mark Zbikowski: Hi. I'm Mark Zbikowski. I joined Microsoft in January of 1981 and retired in June of 2006.

Mario Juarez: So where were you born?

Mark Zbikowski: I was born in Detroit, Michigan. I believe I was born, delivered at Receiving Hospital in 1956. Son of a doctor and a medical stenographer. And grew up in one of the suburbs, Northville where I grew up there until I was six years old. And then we moved to Bloomfield Township, not Bloomfield Hills. Bloomfield Hills is where the auto execs live and Bloomfield Township was a wannabe.

Mario Juarez: But your dad was a doctor.

Mark Zbikowski: And my dad was a doctor. Yeah, he was a radiologist. -

Mario Juarez: Siblings?

Mark Zbikowski: Sibling, one sister. One sister two years younger. She passed in 2016. But grew up, I was fortunate enough to attend a place called Roeper City and Country School. It was a private school in Detroit. Afforded me the opportunity to basically to learn at whatever I rate I wanted to, which in the math and sciences was at whatever speed I could possibly read. Ended up doing very well in math. Took part in several math competitions in Michigan and came in second place a couple of times and ended up meeting this fellow Steve Ballmer there through-

Mario Juarez: So tell us about that. First of all, just your childhood, just take a step back in that. Sounds like an idyllic childhood. Sounds like you were very fortunate kid.

Mark Zbikowski: Oh, yeah. In many ways I was lucky. Both my parents really weren't. My dad was a doctor. He was a 1940s, 1950s era doctor, which meant that he worked ridiculous hours. And weekends he would spend time napping and then go back to work Monday morning and worked very, very hard.

My mother was a doctor's wife. She liked the idea of being the doctor's wife. We had three square meals every day, a white vegetable, a starch, green vegetable and meat. We had fruit every day for dessert. So it was very wholesome and rounded as far as that was concerned.

But with my dad's job and my mother's in a sense detachment, my sister and I were left a lot to our own wiles a fair amount. But it was

great. The memories I have, I'm recycling now living on this nice street with a bunch of really great neighbors.

Unfortunately, going to a private school, I was not in the same school with any of the children in the neighborhood. So my friends were the people that lived near me. I had no other friends outside of the ones from my school. And so there were this dichotomy between the sets of people. The people at school didn't understand the issues that were going on in my neighborhood. And the kids in the neighborhood clearly had no clue what went on at Roper.

Roper was great for me. Like I said, it afforded me the intellectual opportunity to grow. I was in a class of 41 students, which was pretty small. Which on one side is very small, but on the other hand, I got to be a varsity Letterman in basketball, baseball, and football, which given my athletic talents and my God-given abilities, I would not have been able to play anywhere else. But it was a great experience there.

Mario Juarez: But the math.

Mark Zbikowski: The math was-

Mario Juarez: That was the thing. Obviously great at math. When did that arrive in your life? Tell me about your relationship to math, your awareness of math as a thing.

Mark Zbikowski: Well, just as a little step back, my dad being a doctor, he was also actually very good at teaching. And I can remember from fourth grade, fifth grade asking my dad questions about things. And he never gave me an answer, never gave me an answer. He always would ask another question and lead me down to me generating the answer. And so that in a sense got me into thinking about how one learns by asking yourself questions about why doesn't this? What is this? Not just reading something as a statement, but what

was the motivation behind that? What is the reasoning? I was always interested in the sciences as a result.

Okay. And then along about eighth grade, they were at the school, they were offering students an opportunity to take part in what's called the Michigan Mathematics Prize Competition Exam, which was given mostly to high school juniors and seniors. And as an eighth grader, they said, "Sure, why not go take it."

And it consisted of, the first part is about 100 problems that you would take, that you had multiple guess problems. And then the top 1,000 from that in the state would then take a second part, which was five proofs that you had to work your way through. And then they did a big banquet.

And in eighth grade I ended up finishing in the top 1,000, which people were like, "Oh, how does this work?" And as a result, my school then bumped me up from Algebra II into Calculus as an eighth grader. And so that got me really started on the advanced math.

And the National Science Foundation took note of all the promising students that had done well, and they offered them a summer math camp at Oakland University in Rochester. And so my parents signed me up for that. And in the process of working through carpooling, because Bloomfield Township to Rochester, it's 15 miles, ended up carpooling with a fellow named Steve Ballmer, who became a very good friend.

There's a number of other people that came out of this program too, that have sort of big names. There's a fellow, Jeff Sachs, who is an economist at Harvard and Columbia that was advising Russia in the wake of the fall of communism. And there's a number of other people.

Mario Juarez: Tell me about your first memory of Steve Ballmer. Set up the story for me.

Mark Zbikowski: Well, I just remember we became very good friends and I can remember him coming over to my house and we would spend a weekend. During the daytime as eighth or ninth graders, we'd be playing basketball on the driveway. We had a pool in the backyard, we'd be swimming. We'd be biking and just talking about everything. He was always very, very physically active. He could not sit still. He was always moving, always moving, always asking questions. Always very funny. Always a gentleman. I just remember him, those things.

Mario Juarez: Tell me about his aptitude with math.

Mark Zbikowski: Oh, he was a great student as well. After eighth grade, I think, ninth, 10th, 11th and 12th grades, he finished in the top 100 in Michigan every year. And then he went to Harvard and got a degree in applied mathematics. People keep asking what was his business degree in? It's like he didn't have one. He was applied math.

Mario Juarez: So math. You like math.

Mark Zbikowski: I like math.

Mario Juarez: Yeah. What was it about math that you like?

Mark Zbikowski: Wow. The summer math camp, me as an eighth grader, they were teaching us group theory and number theory, which are college level things. And for me, it was just like, wow, all of a sudden I can see bigger patterns in math. That's not just simple algebra, but now let's take algebra and generalize it. And so this idea of generalization, which actually goes into software. That now I've got this, I can see the world and I can see big, big patterns and bigger patterns and bigger patterns. And now that helps me understand all

the little pieces because now I can take from a larger pattern, another piece of learning from something else and then apply it here. And it's like, wow, that works.

Math also gives you a bunch of tools for how to go and analyze problems. And it's just like discovery. It's like, oh, I'm a detective. Let's go open this theorem. How do I get from here to here? What was the important piece? It's not just getting to the Pythagorean Theorem at the end. It's like all the steps that go there. And wow, there's eight different ways of proving the Pythagorean Theorem and it's that wonder of discovering something new like that.

Mario Juarez: Yeah, yeah. So that was central to your early education through high school, through college. Give us the story of how from that you ended up being connected with Microsoft.

Mark Zbikowski: Well, my good friend Steve Ballmer, even though he was three days younger than I am, he was a year ahead of me in school. I describe it as we went to rival high schools together. He went off to college and just before my senior year of high school, I get a phone call from him. It's, "Hey, Zibi, this is Steve Ballmer, remember me?" It's like, "Steve, it's hard to forget you." And he said, "I'm at Harvard now, and I think that you might be an interesting person to talk to the local Harvard rep. I've talked with him and he thinks he'd like to talk to you." I said, "Sure, Steve, why not?"

So I got his contact information, and I guess it was August of '73. I went and I met the Harvard rep and we spent an evening just talking about everything under the sun. Nothing really academic, but just whatever. It was just a fabulous evening I had with this guy. And he gave me an application and a bunch of promotional literature for Harvard.

And went back home to my parents. I said, "Hey, can I apply to Harvard?" And my dad said, "Well, how much does it cost?" And at

the time I said, "Well, I think it costs about \$4,000." My dad says, "No. University of Michigan's a fine spot. It's \$800 a quarter." I said, "Fine." So threw away the application and applied to Michigan, was accepted in eight days and that was it.

And then long, about February of my senior year, I get a phone call from the Harvard rep and it's like, "You didn't apply." And I said, "Well, here's the story." And I told him, relayed what went on. And he said, "Please hand the phone to your mother."

And he talked himself into coming over and having a conversation with my mother and my dad. And at the end of the conversation, he said, "Here's an application." My dad said, "You might as well try to apply Mark." And I asked the fellow, Don Hovevar, I asked him, "Don, so do I fill this in and send it in or give it to you?" He says, "Send it in. I'll take care of it."

Well, I didn't know what I'll take care of meant. Because in April I get a thin envelope at, which was ostensibly the rejection letter. And no, it was actually the big ones coming. And so I got in and I get to Harvard and I find out that the Dean of Admissions and the Dean of Freshmen were college roommates of the Harvard rep from Detroit. So it was the young, old boys network. And it was a fabulous four years for me. Had just a great time. Learned a lot. For me intellectually, it was the best four years of my life.

Ended up going to graduate school. Leaving graduate school, ended up working in Boston. And October of 1980, my phone rings. I pick it up, "Hey, Zibi, this is Steve Ballmer. Remember me?" I said, "Steve, it's hard to forget you." He says, "You remember Bill Gates?" I said, "Yeah, I remember him. I met him a couple of times." He says, "Well, we got this company in Seattle called Microsoft. We'd like to talk to you about coming out here and seeing if you'd like to work here." I said, "Yeah, Steve."

And this is literally the conversation. "Steve, this is my first job after graduate school. I'd like to settle down for a little while and not really job hop. And I'm living in Beacon Hill, Boston on the poor side. And I'm within crawling distance of the best bars in Boston," which I really was. And he says, "I understand." He says, "If you ever want a free trip to Seattle, just give me a call." I said, "Thanks, Steve." Hung up the phone. And said, you know, Steve was right about Harvard being the right spot for me. Picked up the phone and said, "Steve, fly me out."

And flew out in October over the Halloween weekend, which is when Bill's birthday was. And went to a quote, surprise birthday party at Bill's house. So it was kind of hard to pull that off. And got interviewed over the weekend several times by Bill and Paul Allen and a guy, Mike Orr, and Greg Whitten, and they were just tag-teaming me. And on Monday when I flew back, there was a letter showing up that was a job offer, and I quit my job at Digital Equipment and went to work for Microsoft.

Mario Juarez: Wow.

Mark Zbikowski: Yeah.

Mario Juarez: So this is '81?

Mark Zbikowski: That was '81. Starting in January of '81.

Mario Juarez: January of '81. January of '81. And you're like 25, 24?

Mark Zbikowski: No, '81. I was not quite 25 yet.

Mario Juarez: 25. So there's this young guy coming to a young company. And what number employee were you, 100?

Mark Zbikowski: I think I was 55.

Mario Juarez: 55. Do you remember your first day?

Mark Zbikowski: Not really.

Mario Juarez: What are your early memories?

Mark Zbikowski: Well, getting a key to the front door. We were on the, what was the ONB, Old National Bank building at the corner of 108th and Northeast 8th in Bellevue. At the time, it was the second-tallest building in Bellevue, and I think it is possibly the second-shortest now. We're on the eighth floor. We had half of the eighth floor. You'd walk in. All the offices faced to the east so you could see the Cascades. Bill had this great corner office where you could see [Mt.] Rainier.

Paul had the office next to him, the double-size office, with another phenomenal view. I had the office almost in back of the receptionist. So when people would come in, they'd always be there. Everybody had their own office. It was all the doors were always open. Nobody ever shut the doors to the office. There was a little kitchenette down the hall that had wow, free soda. And then that was it.

And I remember going there the first day, and they said, "Mark, we hired you to rewrite our BASIC interpreter in C, but we have this other need for you to do some work on this thing we're doing with IBM about an operating system for a personal computer that IBM's working on." I said, "Sure."

And it turns out that sort of an inside joke was that whatever you were offered as a position in your offer letter, you never did. Nobody ever did what they were hired to do. They were always sidetracked to do something else.

So yeah, working. Yeah, I remember that. I remember having to work on in-circuit emulators. You couldn't really debug these new pieces of hardware the way that they do it today. You had to run in-circuit emulators that would sort of ... The hardware technology was, well, 1980s.

Mario Juarez: So you join the company. That company is six years old. You are walking into a situation where everything is in flux. Microsoft at this point is known for languages and some development tools. What did you think you were getting into?

Mark Zbikowski: Because I came from Digital Equipment where I was doing performance analysis of large systems that were having 120-200 simultaneous users and large time-sharing systems. And for me, that was interesting, doing performance analysis, trying to find ways to make the system react better to people and so that people could do more things. I thought that personal computers were cool because they could allow you to have all this power on your desktop and not be interfered with other users.

I thought that I was coming to just, they said work on basic enterprise. I had no real knowledge of Microsoft beyond what was in that letter. I was interested in just about anything having to do with computers, whether it's compilers in languages or operating systems or device drivers or anything else. It was all, to me, it was all completely interesting.

Mario Juarez: And Microsoft at this point is focused on this emerging notion of a microprocessor of a personal computer. Give us a view in the far distant rear-view mirror, what was the state of the art in terms of the performance capability? What was a personal computer when you walked in the door?

Mark Zbikowski: They were big boxes that were not the most reliable. They were eight-bit processors with not a lot of memory. People today talk

about their laptops having 16 gigabytes of memory. And so divide that by a million and take us down to 16 kilobytes of memory and that was a standard size of the computers. People were storing data on cassettes, Walkman type of cassettes. People were storing data on there. Or paper tape was gone by that point, but people were storing data on these or on floppy disks, eight-inch floppy disks which stored-

Floppy disks, eight-inch floppy disks, which stored a megabyte, okay? Which was, if you think about that, a megabyte is about one 15th of a song today. That's what people were doing, and then people were doing amazing-

Mario Juarez: Yeah. But it was revolutionary. It was cutting edge.

Mark Zbikowski: It was. It was. The fact that you could sit there, and computers, not just my personal computers, but computers in general, were starting to become more and more capable. My senior year at Harvard, I did a couple of papers that I had typeset using Unix's troff program. And so, when it comes out, it's got... Your columns are all adjusted, and the spacing is nice. And some of my professors asked questions about whether I was actually going to a term paper service for this, as opposed to typing it on my typewriter. I said, "No, I'll show you the source code to this."

But it was... Yeah, personal computers were... They were going from small time-sharing systems, like the small Unixes, from digital equipment, PDP-11s, and that sort of things, they'd still support 20 to 25 users, but they were much more cost-effective for companies, rather than the much larger, 100 user-supported multi-million dollar mainframes that IBM, and Control Data and those people had.

So, the trend was from these big, expensive things, to smaller machines that were perhaps a little less capable, but the proximity

to you, and the ability for you to be more productive with them, that was clearly the trend. And just so, you'd walk into the Microsoft, there'd be the receptionist desk, you'd turn right, you'd go down a hall, in the direction of Bill's office, past the kitchenette, and there was this large space that was basically stacked up with all these prototype machines that manufacturers had sent to Microsoft, and they were all in various states of disrepair, recycling. And literally 200 machines, and they were just stacked up, and you'd work your way around that to get to Bill's office, and they were just there.

And so, you could pick one of these machines up, and boot it up, and run whatever software the processors were 6502s, and 8080s, and Z-80s, and processors of that ilk. All eight-bit machines, all with very... Having clock cycles of... That are 1,000 times slower than what we have today, and taking multiple clock cycles to do an instruction, rather than what we have today. So, easily a factor of 1,000, 10,000 slower than machines we have today.

Mario Juarez: Yeah. And still the wild West. It wasn't really formed as to what that landscape was going to be.

Mark Zbikowski: No.

Mario Juarez: Tell us the story of DOS. Tell us the story of how that wild West state that you arrived at evolved into what was really the standard within a few years of the IBM PC running DOS, which to my mind, and you tell me if this is correct or not, was really one of the solidifying forces in the evolution of the industry was IBM's embrace. And it really was something that put Microsoft into an entirely different frame of business, outside of compilers, and languages, into operating systems.

Mark Zbikowski: Okay. By the time I came, Microsoft had already acquired the rights to what was 86-DOS. So, a lot of the murky history about how

Microsoft acquired it, and got the contract, and DRI didn't, and Gary Kildall didn't do that. I was not part of that. Okay? And I have very little knowledge of how that particular murk actually happened. When I was there, Tim Patterson was still at Seattle Computer Products. He didn't want to really work for Microsoft at that time. A fellow, Bob O'Rear, was doing the adaptation. Bob wrote some of the control software for the Apollo landings. Interesting guy.

They needed a linker, which takes pieces of code that were compiled, and puts them together into one executable, that the computer can actually run one executable file. They needed that. So, they had acquired the rights to one, and my job was to actually move it from its operating system, over to the new DOS, and through an amazing set of Rube Goldberg setup, if you've seen some of the Rube Goldberg machines. [inaudible 00:33:18]. It was... Or mousetrap, where balls rolled down, and things jump.

So, once Microsoft... Once we had actually gotten the contract, and we were building this, and it was released, I think in August of '81, the original PC, at that point, I believe that Bill had already realized that, "Hey, here's a great thing that we've got." Okay? If people are going to go build a competitor to IBM, okay? And Bill actually worked, as far as I know, Bill worked with some of the people at IBM, giving them pointers as to how to... Some of the hard... Designed some of the hardware. Bill had the idea that, "Hey, here's an opportunity we have, that we can certainly sell the software to IBM, and get a royalty for every piece, but we can also sell the same software, or a compatible version to these other people."

So, the IBM PC came out, and there was one day that I was there, and Bill had... I'm trying to think of his name, I think it was Burton, but it was a hardware person that brought his oscilloscope in, and was going through, and taking one of these IBM PCs, and trying to figure out how it worked, so that he could build a clone of it. And I

don't know where that went. I know that there were several other clone manufacturers who did something similar. Compaq, and Gateway, I remember them, and Eagle Computer, they all built sort of clones.

And then people started realizing that it wasn't just the hardware clone that they needed to have, but there was a value... The value to people is being able to run an application, and that application, for the application to run, it needed to be able to access resources on the computer, like the display, the keyboard, the mouse, mouse hadn't been invented... It was invented, but it wasn't actually available on the PC then. So, keyboard, display, printer, and storage, the application needed to do that. It was kind of ridiculous to expect that an application would... Someone who's writing code, like a WordPerfect, or a Microsoft Word, their expertise is to build a word processor. Their expertise is not in trying to interface to 50 different types of display drivers, or 30 different types of disk drives. That's not their business. That's not their core value add. So, that's the purpose of the operating systems, to sit there, and provide a uniform interface that applications can use to do this.

Now, again, to the value to the user is the application. Not so much the hardware, not so much the operating system, but the application. So, there was this sudden shift from applications that were vertical, all the way down to the hardware, to one, to an operating system that hid a lot of the details, and then an application that sat on top of that. And now, the manufacturer suddenly started saying, "Well, great, here we have an operating system, and there's now this nice layer that allows the operating system to go, and interface to the hardware specifically. And wow, we can suddenly..." Microsoft, Bill, had the observation that we can start selling this operating system to these other manufacturers, and show them how to go and build the low-level glue. And all of a sudden, WordPerfect can run on a PC, and a Compaq, and a

Gateway, and a Wang, and a Deck Rainbow, all these other machines without having to be rewritten.

Once that happened, once that shift got made, all of a sudden people said, "Wow, this is good." Even though it was common technology in the mainframe world, and in the Unix world, to do this type of separation, but to have it available on these smaller machines, it was new. It wasn't particularly revolutionary, or the ideas were old. And at that point, manufacturers started coming to Microsoft saying, "We want to build a clone PC," or, "We want to build a PC." The idea of a clone wasn't quite there yet. The PCs were all subtly different, as opposed to trying to be absolutely identical.

And there was a company called Phoenix Software, I think was their name. Phoenix did the BIOS, one level, another level of abstraction, to hide differences in hardware from the operating system, and from manufacturers. Anyway, once you started hiding all the hardware details, the operating system suddenly had a lot of value, and it was a framework. It's like 110 volt plug, okay? A 110 volt plug, once they came with the idea of having 110 volt plug, wow, I can plug any type of toaster into it. It doesn't matter what type of toaster I have, I can plug into it. And it doesn't matter who's supplying the power. It's 110 volt plug. I can plug in anywhere in the world. Suddenly it had that tremendous value.

Mario Juarez: Yeah. Tell me about the technical challenges in your first years with the company. What were you responsible for solving? What were you-

Mark Zbikowski: Well, okay. So, I worked on the linker until '82, when Tim Patterson came, and then left, and they needed someone to run the MS-DOS group, and then I... That's when I took over, in, I think, '82. It was like March of '82. The technical challenges. It was an interesting relationship. At the time, for lack of a better word, we were not

quite a contract programming shop for IBM, but that's the way IBM was kind of treating us. We had this other notion, that we were actually building software that we were selling both to IBM, to somebody else, and that we weren't just doing IBM's bidding.

There was a number of things I... From a technical challenge standpoint, it was just writing a code to do cool things in as small a space as possible. We had 16... The small machines were 16 kilobytes. The PC Jr., when it came out, was 48 kilobytes. I was able to have an operating system, and a linker, and I could sit there, and assemble the sources, link them together, and reboot on a 48K machine, which people today say, "Oh, 48K, that's one subroutine." It's like, no, no. This is one entire operating system.

So, trying to be maximally efficient. We were all writing in assembly language. We weren't writing in any other high-level language, having deep knowledge of how the instruction set worked, how to take advantage of all the various registers and everything, which were... There's unique challenges there. So, anyway, that was the level of challenge, the deep technical challenge.

There were a lot of other challenges that I had during that time, which for me were formative, in terms of dealing with IBM, and trying to understand from a customer, provider relationship, how one does things. At first, I was like, "IBM says do this." I say, "Okay, I'm just going to go do it." And I'd be halfway through it and say like, "This is stupid. This is not going to do what they want."

And that taught me that, early on, that when a customer says, "I need you to do X," doing X is the wrong thing 90% of the time. You want to go back to the customer and say, "No, let's talk about the problem you're trying to solve. Let's step up a level. Okay? I know you want to hold the shift key down and type this, and have something happen, but no, what problem are you trying to solve?"

And then go after that problem, because you can probably solve the problem in a slightly different way, perhaps better, perhaps not, but at least you as a developer have an understanding for what the customer's problem is.

So, once I took that attitude, the relationship with IBM, IBM became a lot more fraught, because I wasn't a contract programmer for them anymore, but I was coming back with other things. And so, I mean, out of that experience, DOS 2.0 came out. DOS 2.0 had the first hierarchical file system for DOS. Hierarchical file systems had been around for... Since Multics in 1965. Okay? I taught at University of Washington, and I do a lot of history there. But, the hierarchical file system was the first time the idea of not having to generate a new version of the operating system for a new particular piece of hardware. Prior to this point, whenever someone had a new type of disk drive, they'd have to write new software for it. They'd have to go, and do what's called a SysGen, where they would build a new version of the operating system, tightly integrated with this particular piece of hardware.

And I said, "This is crazy." Okay, we can design a little simple interface that allows people to slide in what are called device drivers, which basically led directly into plug and play. And so, DOS 2.00 had installable device drivers. It had the hierarchical file system. It had a programming model that very much mimicked the Unix programming model. I mean, without memory management, and a bunch of other things, and protection. But, the file system access was very much along the lines of Unix, porting, moving applications from Unix to DOS was much easier. Anyway, but this was, again, trying to solve their problems. They wanted initially to have... IBM asked, "We need you to support a large hard disk, much bigger than the floppies." It was 10 megabyte hard disk. Okay? Which was about two-thirds of a song.

Mark Zbikowski: So it's two-thirds of a song. And actually, at a gigabyte a second, that's a fraction of a 4K video, just a tiny... 10th of a section of a 4K video. So, that's what they wanted. That's what they were specifically asking for. But, going back and asking the question, "What problem are you trying to solve?" It's, we're going to need to store information on this disk, and be able to organize it. So, a hierarchical file system made a lot of more sense than having one flat list of files that would comprise 10 megabytes. People want to organize things, put them into folders. And so, going from what they were asking for, and trying to figure the problem, and doing a much more general solution turned out to be a big win.

Mario Juarez: What was it like working at Microsoft at that time? What was the environment? What was the culture?

Mark Zbikowski: Work hard, and play hard. Work hard. There was a core group of us with Bob O'Rear, and Kathleen Graham, and Mike Courtney, and Mike Orr. There's a group of us that we would get together, we would work our 14 hours a day at Microsoft. Okay? We would individually go out and get burgers, or whatever our meal was. We'd show up at a local pub called A Nowhere. Okay? And yes, it really was called A Nowhere, and we would play pool and foosball until they would kick us out, and we would repeat that the next day.

We would go on Saturdays, we'd show up at Bob O'Rear's condo, and we would play volleyball. Marc, this fellow, Marc McDonald, who was, I think, employee number one after Bill and Paul, he made the most amazing daiquiris. And we would play volleyball all day long, get sunburned, have burgers, get ridiculously drunk, and on Saturday, tried to recover on Sunday, and then Monday show up and start working on 14 hours again. It was fabulous. They were a bunch of really fun people. Almost all of them were single, very few, very few married people. But was... Like I said, we worked hard and played hard. It was just a lot of fun.

Mario Juarez: And where did Bill and Steve fit into this?

Mark Zbikowski: In the day-to-day things, they didn't. Yeah. They were off... I think when Steve came, Bill chartered him with growing the company. So, at that time, Bill... Steve was working very hard at staffing issues, and trying to figure out what the corporate structure was going to be, and trying to figure out from a facility standpoint, what are we going to do? We didn't have a CFO at the time. We ended up hiring this fellow, Craig Watjen, who is another fellow who had just an ridiculously interesting history. He played clarinet with the Boston Pops, and had an MBA from Stanford, and was our finance guy. Yeah. Yeah. Anyway.

Mario Juarez: Did you have any idea what was going on, in terms of what the company was going to be?

Mark Zbikowski: No, no.

Mario Juarez: Talk about that.

Mark Zbikowski: Okay. So, I remember when the company first incorporated, went from a partnership to a real corporation, and they handed out options, and I had to go read up on an option. And I looked at this and I said, "Look at the value about this." I said, "Wow, at some point I can become... Wow, a thousand-aire." It was like, who knew what was going to happen? At the time, I had no clue. I don't think anybody had clues. We were just interested in just building cool stuff that solved people's problems. That's really what it was.

There was an inflection point, I think, in the mid-'90s, where it was demand created by the software. The software that people were using, the applications, became suddenly more and more powerful, easier to use, not in a jingoistic way, but in a real, fundamental way, became easier to use. The mouse helped it in an incredible amount.

Real graphics helped a lot. The beginnings of networking were in that period too.

The degree to which people were able to produce, and consume information. Actually, I think it was... That's a good point. Up until the era of the mid-'90s, when we started getting the internet starting to work its way in, everything was focused on information production. Okay? You had Excel and Word. You'd print, you'd do all these things to produce information, and there was a shift where people started consuming information. Music, they started being able to share news, getting news feeds, email lists, and everything else suddenly became more and more... Became a social... You could say it was a social thing. And at that point, people were able to embrace it, and bring it into their lives. And there were so many people, that all of a sudden there was this tremendous demand for all this, and that's where it all ballooned.

Mario Juarez: What a great way to frame it. And it really was the accelerator, but the latter was only enabled by the former.

Mark Zbikowski: Yeah. Oh, yeah. You can't consume anything if it wasn't produced.

Mario Juarez: Right.

Mark Zbikowski: But yes, yeah, but the production tools were there. All the rough edges were being honed out. The character oriented version of Word was really not that usable, but the graphical versions became very powerful. The fact that you could now actually have... Easily switch between applications, running more or less at the same time, was very powerful. You could sit there, and read your email. You could sit there and be editing your document, being able to fluidly go between them was wonderful.

Mario Juarez: Yeah. I remember one of the fun, profound things for me, very early on, was that you could copy something out of a word processor and drop it into a spreadsheet.

Mark Zbikowski: Yeah.

Mario Juarez: Simple cut and paste across apps was... All these things feel so mundane today, and just tables, so obvious. But they weren't at the time, were they?

Mark Zbikowski: Yeah. Yeah.

Mario Juarez: They were all revolutionary. They must have been. Talk to me about... Give me a little tour of your career, and the highlights of what you were involved with, and what you achieved.

Mark Zbikowski: I'm good. Yeah. Started with working on MS-DOS, ran the MS-DOS group, all the way through MS-DOS 5.00. It was at the end of DOS 3.00, DOS 3.1, I told Steve Ballmer that I was done working with IBM and I really wanted to do something different. He says, "Well, great. We're working on this multitasking version of DOS. You've been working with Gordon Letwin on that, and let's move you over to focus on that." I said, "Great." Instantly, that turned into OS 2, where we were working with IBM again. Okay. We weren't quite a contract programming shop, but we were definitely viewed as the junior, less sophisticated partner, and while we were less sophisticated, we had a lot more energy, and a lot more perspective than what was coming through from IBM.

IBM had a history. I don't fault that history. And they came with a particular set of blinders. We came with our own set of blinders, and we had to make accommodations. Anyway, so I worked on DOS. I was one of the architects. There were like four of us in Microsoft, Gordon, Anthony Short, Ray Pedersetti, and myself, that we were the big architects to design how this thing was working. We had

interminable meetings with IBM, with the IBM design team. And then, so we did that, started building the teams. I was in charge of file systems and device drivers. Did that for a few years, all the way... And was also very much involved in the product planning, and the content.

After OS/2 1.2 shipped, I wrote a list of all the issues that I thought were big problems, and it turned out to be, that was basically the bullet plan for OS/2 1.3, this little list of things. But at that point, I said, "I'm done dealing with IBM." I was working for Paul Maritz at the time, and I ended up being his technical assistant for a couple of years, worked on True Type, and printing models, and other stuff for him. Got involved with the divorce, the Microsoft IBM divorce. I wrote a memo, which I thought was actually really pretty good, but it's come back to haunt me, because it keeps getting circulated and all the antitrust things, where I argued that the asset for developers is the APIs, and their code, and that we should actually do whatever it takes for us to preserve those APIs, that's the asset that they rely on. It's actually our asset, is the API's, the programming model. That's what we need to preserve. Okay?

So doing something like an OS/2, which was, to quote Nathan, it was just the same, but different in all the details, it was different in all the details. It's not the same. And that's when that led us to the focus that there were a large developer community who has a lot of effort, and knowledge in how a particular programming model works, and it's crazy that we want them to change everything at the edges, just move it over. And so, that led us into what became Windows 3.0 and Windows 3.1, and the whole Windows... Windows 16 programming model, and Windows 32.

Anyway, so once that divorce started happening, a fellow, Jim Allchin came on. We brought him in from Banyan, and he was going to take over the system software group from Paul Maritz, who was

going to do something different. And he charted me with building a new file system to handle an object-oriented world, and we started working on what was known internally as Cairo, for no particular reason, other than just, it was a name that started with a C. It was a collection of object-oriented technologies, and the things that were just fresh out of academia. So, a directory service, which actually had been around for a long time, but Kerberos security, an object... A file system that was very, very efficient for object storage. And then what was integrated content indexing and database functionalities in the operating system or file system. And so those pieces... Oh, and then a distributed file system along there too. So those are the five things.

So we worked on that until... And at the same time, Windows NT was going along, so we were targeting both 16-bit Windows and Windows NT for this Cairo project, and it became very clear very early on that the 16-bit Windows was not going to be capable. So we were targeting a lot pieces of Windows NT.

Unfortunately, Windows NT, great guys working very focused to deliver their engineering thing, and we needed changes, and we couldn't get stuff. And plus, we were also off in our own world. We made many, many procedural and technical mistakes. Ended up building a team and then shooting the team, killing Cairo altogether, the file system piece of it, and then moved over to work on Windows. Amusingly enough, in Windows 2000, all the pieces of Cairo shipped as parts of it, except for the object-oriented file system. But I had worked at that point putting enough of those features into the NTFS that it didn't, but we delivered all those pieces for NT.

When I moved to NT, I was an individual contributor. I went from being an architect and dev manager and general guru about the whole thing to just an engineer and worked on size and speed,

because apparently that's what I was good at, and got Windows NT to be able to boot and run in an eight-megabyte system. Think about that, eight megabytes. And so we got that running and worked on that, and then the opportunity to lead the file system group came up, and I left at that and took a four-person group and grew it to 15 or 20, and led them until 2006, when I retired.

If you think about this, I built teams and then turned them loose, built teams and turned them loose, built teams and turned them loose. Some of the interesting learnings that I had in that time... For me, over this long arc, I talked about learning about the customer and trying to figure out what the customer's problems were. For me, it's always been about solving a customer problem. Working on an operating system is how to deliver cool functionality to the end user while still leaving as many instruction cycles left over, MIPS, okay, so that the application can do stuff.

Building teams, communication with people and dealing with people as a person is really important. A lot of the stories of the early days of Microsoft with some managers who were less than politic in their communications. You've experienced some of them. Had no place in my thing. Abusing people for the sake of getting stuff done? No, that just doesn't work, okay? There was a fellow, I think he's a partner architect now. I used to go to his office and lock the door as he would leave, lock his door on Friday night and tell him not to come in on the weekend because he was burning himself out dealing with people.

Over the time, I probably had maybe 200 different people working for me over the course of my career. The thing I realized when I retired is that, after 26 years at Microsoft, having all these people work for me, I never fired anybody. People knew where they stood. If they weren't performing, they knew that they had to go make a

choice, and they would either leave the company or leave whatever, but I never said, "You're gone." So that was my one claim.

Mario Juarez: Well, it resonates with my sense of who you were as somebody who was involved in communicating across the company with the Micro News and the internal communications. You always had a reputation of being a good guy, being a nice person, being a sunny character.

Mark Zbikowski: Thank you.

Mario Juarez: Yeah, it is well-earned and unusual at the time. Talk about the culture as it existed and any war stories about what you encountered. You had a few clashes with the guy at the top.

Mark Zbikowski: Okay, so this is during OS/2. At the time, we had ladder levels that were what we call D levels, and they were, you'd be hired in as a D10, you get promoted to 11,12, 13. 13 was the equivalent roughly of Level 65 now, and then they had Level 68, which were 14s, and then there was a D-15, which there was only two. That was Gordon Letwin and Charles Simonyi, and those were created by God or Bill Gates.

I was the first person to be promoted from 13 to 14, okay? We'd hired people in at 14s, but I was the first person. And I was brought into Bill's office and by this fellow, Peter Neupert, my boss at the time, and they had a little ceremony and everything else, and they had lots of shaking of hands, and this is a reward for your contribution and your expectations for the future. It's big demand, blah, blah, blah. Literally a week later, I'm in a presentation with Bill when he was asking questions about the development plan going forward, certain parts of OS/2. And he listens to me. And there's Bill, doing his rocking with a not-happy expression on his face. And he stops and he says, "I don't believe this. Why don't you find someone smart to go look at it?" I looked at Bill: "Bill, on this

subject, I'm the smartest guy in the room." Bill looks at me and says, "Oh, okay," and we went on.

Mario Juarez: Great story.

Mark Zbikowski: Yeah, so I have another one a little bit later, and this is in the Cairo times, or actually later in Cairo. This is actually in the Vista times. Longhorn. We had a meeting in Building 34 in the Executive Room, which was basically there was a big table where the people who actually were contributing to the meeting were, and then there was an arena around it, where I called "the acolytes" who would sit, okay? So I was sitting down at the table, we were talking about WinFS and all the stuff that was going on because I was producing part of... And part of WinFS was a bunch of transactional enhancements to NTFS.

We were there and there was a fellow, Eric Rutter, who was leading the database division. And so Bill was asking some questions, and Eric made some remark, and Bill looks at him and asks Eric a question, and Eric gets two words out of his mouth, and Bill interrupts him in an aggressive way and then asks another question. Eric starts answering again, and Bill interrupts him, asks him another question. Eric leans back, hands behind his head, says, "Bill, you asked me a question. I'd appreciate if you would sit there and shut the fuck up until I'm done answering." Bill leans back. Eric gets his chance to answer, and Bill says, "Okay," and the meeting went on.

So during the Cairo time, we had a meeting with Bill talking about product plans, and there were some of the Office people that were there. And so the meeting starts and Bill says, "Hold on a second," and he changes his focus over to the Office people. Word 6 had just been released, which had changed the default file save format to be something different, and there was all sorts of interoperability... You remember those. Bill looks at it and says, "You told me you weren't

going to change the default file format, and then you changed it. You fucking lied to me. Don't you ever fucking lie to me again. Okay, let's go on with the meeting." Yeah. First of all, as a CEO, you don't do that kind of stuff. Second of all, as a person working there, you inform the CEO of your decisions. So there was plenty of blame going both ways there.

Okay. So in sort of a bigger picture, along the time of Vista and pre-Vista, basically starting around 2003, thereabouts, a lot of the company changed, I think, for the time, to the worst, and became what I call the Cult of Bill, where all of a sudden you'd go to new-hire parties at his house, and instead of a bunch of Bill talking with a bunch of people, there was Bill in a sense kind of holding court with this big arc of people because he was Bill. And Bill's a great guy, he's a smart guy. I like Bill, he's a smart guy. And he, like we all do, has rough edges, but he's not the guru. He's not the source of all knowledge, not the source of truth.

And it got to the point where people would go when they would be prepping for a Bill meeting, that if I had just had a meeting with Bill or presentation with Bill, someone would call me who's doing a follow-on presentation, they'd call me up and they'd say, "So what were Bill's hot points?" And so I'd go through the whole thing about what Bill was focused on, and they would go and they would doctor their deck to try to hide anything that would bring up Bill's point. They would purposely put in a weak slide with a bunch of backup so that Bill would focus on that one slide and they would be able to back it up with all their good things. And so they were doing presentations to manipulate rather than to get informed and do things, and that was problematic. That's one of the things that happened with Vista, is that people stopped telling Bill what was going on because, yeah, it wasn't a good experience.

Mario Juarez: With a lens of thinking that what we're talking about has relevance to folks who are looking at the company, folks that are joining the company, folks that are thinking about the company today, reflect on the culture of Microsoft. I'm interested in, especially in those really critical formative years, maybe earlier in your career, what were the things, attributes in the culture that you regard as essentially positive, and maybe also essentially negative, that informed how it all ended up working and where the company ended up maybe stumbling?

Mark Zbikowski: So positives. Positives. We all had ideas. We were not afraid of sharing ideas. One of the things I encouraged people who worked for me was, if you see something we're doing that you think you've got a different way that could be better or just different because you think it's interesting, send an email out. Talk about it. Let's figure this out. And when you're making a design decision that you need some guidance on, write up the issues. Tell us what the problem is, give us a couple of solutions, and recommend one. That's this level of communication.

Separate people from the problem. That was one of the big, big learnings. In meetings, people would get intense. And particularly in today's political environment, people and problems are conflated. No, they're different. Find out what the problem is, put any personal interaction, put that aside. Let's talk about the problem. What is the issue? We did a lot of... In the early days, people had tons of ideas, and we had the freedom because we didn't have a lot of really tight schedules. We had the freedom to go and explore a bunch of different ideas and try different things to solve users' problems.

Only when we started having very tight schedules that we started having to make really harder decisions that would bump into people's golden calves. "This is my idea. This is a great idea." "We don't have time to do it." "But, but..." "No." And then they would

sneak some piece of it in. "What do you mean you're doing this? This is not what we need to do."

So in those days, we had the freedom to go in and innovate and try new things without fear of failure. It's a lot more difficult these days. We're a bigger company. We have schedules because in those days we didn't have marketing and sales plans that were all contingent on us actually delivering the product based on PowerPoint presentations that were generated prior to us even designing it.

Now we have... It's a big deal. Microsoft, as much as I really like the idea that the early Windows NT group had, which is we're going to make a release every year, it's a train. It leaves the station on a predictable schedule. If your code is ready, you're on the train, you go. If you're not ready, you miss the train, you wait for the next one.

That was a great... But then, starting in XP... Actually, for the core Windows NT part, but going back to Windows 95, Microsoft loves big-bang releases with lots of marketing and lots of fireworks and everything. You can't go and... That requires a lot of preparation time, a lot of scheduling, and even though building the product is key here, it's constrained by all the time limits put on everything else. You can't sit there and book the LA colosseum for a release and then say, "Oh, we're going to ship it two weeks. You still open?" You can't do that.

So once the schedules come in, that's when, unless you've done this a bunch of times, people who are fresh managers or fresh team leads even, will feel the pressure, take shortcuts, take shortcuts in communication, which is even worse. And that goes to getting into hurt feelings and seriously dysfunctional management. And yes, there are people that I have seen in my career that are phenomenal managers. There are three people that I would work for in a second again, because they were just my view of a perfect manager. There

are people that I would just not ever set foot in their office if I could possibly help it just because they were just unpleasant to deal with. Yeah.

Mario Juarez: We don't need to name names.

Mark Zbikowski: No, no, no, no. Oh, let me tell you, I'll work for Paul Maritz any day. I will work for Anthony Short any day. Peter Neupert? None of these people are with Microsoft. These guys are absolutely great guys.

Mario Juarez: Talk about the role of Microsoft beyond technology in the world. And I think what I'm interested in is your perspectives of what the company has contributed or accomplished in the world, even beyond the software.

Mark Zbikowski: Very early on, as in the first year I was there, Bill made it known that he views giving back to the community as an essential thing for everyone to consider, and he would do whatever it took to help people give back. This is back when the company was a hundred people. They did have charitable giving matches. We had every year at the company meeting, even when it was 50, 60, 100 people, there was always a section about the United Way. Always, always something there. And yes, his mother was involved with that, but it was still something that was very important to Bill.

It is a hugely unrecognized thing how much money Microsoft has given. The average public says, "Yeah, Microsoft does this giving thing," but people don't realize how much money was given. At one point, Microsoft had given employees and Microsoft had given a \$100 million dollars to charity. That number has been dwarfed in the years since. That's a ridiculous amount of money. That's a ridiculous amount of good. Microsoft gives... They'd had the loaned executive program for a long time. This type of stuff has always been there. It's just been unrecognized.

So that's one level, and that comes from Microsoft matching, but the direction comes from the heart of the people here, and that is the real key. If the company goes and donates money, that's one thing, but it's directed by the employees, which really has the big impact. Like this fellow, Rick Weiland, who passed away eight or 10 years ago. He gave almost all of his money to all the LGBT organizations in Seattle. What a great thing. That was his, and part of his largess came from Microsoft. But it's that level of being able to contribute in a focused way that ties back to the heart of the employee, not just to the bottom line of the company. So that's the big thing, and it's been unrecognized as far as I can tell.

Mario Juarez: Yeah, it's an interesting thing too, because so many people arrived at Microsoft as almost children themselves, and that was almost taught. Is that a fair statement?

Mark Zbikowski: In the early days, yeah. When the United Way presentation would come up, it was, yeah, there was a lot of, "Yeah, this is right. Let's do it. What are we going to do?" People would organize their email groups, distribution lists or whatever, that were set up for being able to go and do various volunteer activities around the area. I don't know how much that has been able to keep up since I left, but the fact that the company encourages us and provides us tools for doing that is phenomenal. But it's unrecognized. It is great satisfaction for the people who participate in it and clearly for the people who are beneficiaries, but the average public doesn't see that. They see Microsoft had another record-setting revenue year. They don't see that Microsoft gave away \$50 million in employee-directed contributions, and the fact that it's employee-directed is important.

Microsoft has been listed as the leader in technology. Microsoft straddles this funny line between consumer and enterprise. Enterprise is as unsexy as one can possibly get. Selling to Fortune

500 or even companies with just a thousand... Small, medium and large orgs. The small orgs, the smorgs, those guys are... That's unsexy, whereas the sexy stuff is, "Ooh, all the consumers, what's going to show up?"

Yeah, Microsoft, this little has to straddle this line. And there was a period where the Win 95, XP, Windows 8, that was a great period. Then there was a period where the corporate focus was on enterprise and kind of let things languish. And then now we're back to... There's a little bit of buzzwords about AI and Copilot, but then there's also Windows 11, which is, again, additional UI and more services and capabilities for the people. So Microsoft keeps doing this, alternating between them.

The press really cares about the sexy consumer stuff. They don't really report very well on the enterprise stuff. I think that as Microsoft now regains a lot of the buzz in the consumer space, I think that... And consumer, not just meaning the person, but the information consumption space. I'm going back to my earlier comment. Information consumption space, suddenly, that becomes ... is much better. Actually, a lot of the AI stuff is a combination of both information production and information consumption.

Mario Juarez:

Yeah. I want to go back for just a second to the giving, the giving work and the giving things, and listening to you talk had all these things come up for me. I grew up in Cleveland, and we were not on the right side of the tracks. So I did not come through the same route, and I sort of arrived in the back, in the side door. My sense was, and I don't mean this pejoratively, most of the people that I was with were young people who had been extraordinarily gifted and extraordinarily lucky, extraordinarily privileged. When the campaigns would happen, I remember one time, we went to a food bank. It was a standard in the systems division. It's like, "You're

going to have this day of service," in the corner that I was in, and how profoundly affected my co-workers were.

I'm like, "I used to, when I was a kid, we used to go to those places as the people in need, and it was such a profound thing." I felt like it really expanded the employee experience for a lot of these people. It broadened their horizons. It made them a little more aware of the obligations that come with that kind of privilege. So that's my narrative, is ... How do you view that? Does that resonate with you?

Mark Zbikowski: Oh. Yes.

Mario Juarez: Tell me about it.

Mark Zbikowski: I grew up, yes, I was a son of a doctor. My dad was actually during the economic downturns in Detroit in the early '70s. He went and slashed ... He was a radiologist. He slashed his salary just because, one, he wanted to keep his business going, but people couldn't afford to, even though it was being paid by insurance, they couldn't afford it. So my dad cut way back. So I saw, in Detroit, what it meant to ... My dad wanted to provide his services, okay, wanted to stay in business, but he also wanted to provide the services. Because he saw people in need.

I was lucky to go to Harvard, but I had friends at Harvard. I unfortunately didn't have the opportunity they did to go and do contributions, social contributions, not just financial, but giving of yourself. But once Microsoft had the opportunities for this, I took advantage of it. I coached several teams, not just my own children's teams, but I also gave back and coached in schools. That's one way, donating my time there. Donating money, yes, I did. For me, it's important. I was right place, right time, extraordinarily lucky. You know?

Mario Juarez: Yeah.

Mark Zbikowski: Yeah. I mean, actually, the interesting thing, to quote Steve Ballmer, at one point, I was having a conversation about this, and he says, "People deserve to eat." Yeah. You know? Yeah. So whatever I can do, from sponsoring families at Christmas to filling up food banks around Thanksgiving or filling food banks throughout the year, not just Thanksgiving. My older children, and we would sit there every year and figure out, what would be a good thing to do? We would sit there and spend a day shopping, shopping for clothes, and then go to the Salvation Army or to Union Gospel Mission and drop food off.

Mario Juarez: How good that feels.

Mark Zbikowski: Oh yeah. Oh yeah. Well, and seeing the people there when you start walking with bags and bags of groceries and everything else. The looks on people's faces, not just the people receiving it, because they were clearly overjoyed, but seeing the people that were there saying, "Ooh. That's coming to me," that's, yeah.

Mario Juarez: Let's talk about legacies and talk about the legacy of the company, and especially, again, this theme of carrying over essential understanding, essential knowledge, essential aspects of the culture from the past as it pertains to the present and it pertains to the company, to the future of the company. What do you regard as essentially Microsoft?

Mark Zbikowski: The big picture is the ability to look at the world and find problems, big problems in people's lives that we can bring technology to bear in order to improve their lives, not necessarily solve their problems, but improve it. In many cases, we do solve their problems, but in many cases, we provide them the tools in which they can use to go and improve things. That's sort of the big picture.

Mario Juarez: Mm-hmm. Great. What do you think the most important contribution the company has made to the world?

Mark Zbikowski: Mm-hmm. That technology doesn't have to be arcane. It can be approachable and usable in your ... no matter how unsophisticated you might be in technology. You don't have to be afraid of things. If you think about it, if you think about people dealing with their phones, okay, there's a ridiculous amount of complexity there. But even though Microsoft didn't build this phone, the pervasive effort of the last 50 years has been to make it more approachable, make it easier, make it such that people don't have to be afraid of it.

Mario Juarez: I mean, you think about the power of the PC, especially as a tool that really changed what an individual human was capable of.

Mark Zbikowski: Yeah. I mean, it used to be that computers were ... The technology and computers was the domain of gurus with pocket protectors and big horn-rimmed glasses in ultra-air-conditioned, very ... lots of white noise computer facilities, okay, that were just wholly removed from your experience. Microsoft has led the way. We're not the sole givers of this, but we led the way in making it approachable.

One of the original mission statements for Microsoft was a computer in every office, in every home. Okay? That was the original one. Then, people added on running Microsoft software, and then it has morphed. But getting the computer into people's homes, getting it to the point ... One of the things that ... There was a metric that people ... that Bill had brought up, is that, would he give this product, or this computer, or maybe the software to his mother? Okay? Would she use it? If it was, that's a success. If it's not, then how close are we to getting that success? That's the point, is getting it into people's hands so that if they can use it, they're not afraid of it, and it's a effective tool for them to work.

Mario Juarez: Yeah, and all those things that open up. Was there ever a moment that you had where you just went out in the world or you were going through the course of your life, and you realized that the

impact of Microsoft software was much bigger than you imagine or you suspected at the time?

Mark Zbikowski: Many, many times. One of the earliest ones is right after DOS 2.0 came out, I was sent to Japan on a business trip. And so I went to the Akihabara... Walking down the street and seeing, first of all, giant signs, Microsoft, and now, at the time, Microsoft was only like a thousand people, and seeing big signs for Microsoft, and walking into a store. There's just Microsoft software on the walls and big advertisements for Microsoft. I can't read Japanese, but Microsoft is, yeah, they're ... It's like, "Wow." Being able to go, in the '90s, going to a hotel and looking over the person checking me in, and oh. Guess what? They're running Windows. It's like, "Wow. This is really everywhere." You know?

Mario Juarez: How'd it make you feel?

Mark Zbikowski: I felt fabulous, fabulous. It's like, "Hey. I had a part of doing ... I personally had a part of building that," and that was great. So when I, I think it was when I passed 10 years at Microsoft, the MicroNews did an article on me, and they said, "Why 10 years here? Many other people have just up and left. You could probably leave if you wanted." It's like, for me, there's some big reasons. One, I get to work with really great people and really smart people every day. Cannot beat that. Okay?

The work that I'm doing is interesting as all get-out. It's consuming and makes me ignore the bad weather. It's really good stuff. Whatever I build, millions of people will use, and I will impact millions of people. That is a big benefit. Okay? Yeah. They pay me, and the last thing is, my kids need to see me going to a job that I love every day. So why would I leave? Given all this, why would I leave?

Mario Juarez: I clearly remember that article, by the way. What do you think is your legacy with regard to Microsoft?

Mark Zbikowski: Well, I've left my initials everywhere.

Mario Juarez: Tell me about it.

Mark Zbikowski: Yeah. When I worked in DOS, working on the original linker, we needed a way to be able to identify a file as an executable file, versus a memory image, versus something else. People were using the last three letters of the file name, the extension, to go and distinguish it. That's kind of crazy, because it's actually the contents that matter, not the name. Like my mother says, it's not how someone looks. It's what's inside that counts. So yeah.

The software that I was porting over, there was a field for identification, and I said, "Why not?" I said, "Right now, it's got one set of initials in there. But I need to distinguish what we're doing from what they're doing, because there's some differences. So stick my initials in there, MZ, as the first two bytes of every Windows executable, every DOS executable, which turned into every Windows executable. So every Windows program has got my initials in it.

Mario Juarez: So how many-

Mark Zbikowski: If you take those initials out, Windows refuses to run it. Yeah.

Mario Juarez: Yes. So how many pieces of software in the world have had your imprimatur?

Mark Zbikowski: Ah. Billions. I mean, individual copies, billions, hundreds of billions.

Mario Juarez: So your initials are on billions of pieces of software around the world.

- Mark Zbikowski: Yeah. How many PCs are there? There's at least 10 programs, I think, on every PC. I think there's way more than 10, and each one of them has ... Yeah.
- Mario Juarez: Did you know you were going to do that?
- Mark Zbikowski: No.
- Mario Juarez: Did you have any idea?
- Mark Zbikowski: No. No. Along the same lines of when we first were given stock grants, it's like, "Wow. I could be a thousandaire."
- Mario Juarez: Yeah.
- Mark Zbikowski: Who knew? Who know when the company was employees, did I know that the IBM PC was going to be this big thing? Well, it was great that IBM was doing it, but IBM had this baggage of other stuff. In that big room in Bill's, just off of Bill's office, there was stacks of PCs that were, effectively, end of line. These aren't going anywhere. So what made me believe that the IBM PC was going to be anything else outside of some IBM support. Right place at right time. I claim no clairvoyance.
- Mario Juarez: But MZ everywhere.
- Mark Zbikowski: MZ everywhere.
- Mario Juarez: Where else is MZ?
- Mario Juarez: And on your license plate.
- Mark Zbikowski: On my license plate on my car. Actually, my license plate is 4D5A, which is the hex version of MZ. So, it's all extremely geek...4D5A. Those are the hexadecimal values for MZ. And so if you look at the first two bytes of every Windows program, it's hex 4D5A, or MZ.

Mario Juarez: That is so cool.

Mark Zbikowski: Right place, right time, luck, serendipity, not clairvoyance.

Mario Juarez: Got to give yourself a little credit, too, though. Right?

Mark Zbikowski: Yeah. Well, I worked hard.

Mario Juarez: Yeah.

Mark Zbikowski: I mean, actually, so after I left Microsoft, I went and I taught at University of Washington for 10 years. I taught operating systems, and in one of my lectures, one of the recent lectures, even though I stopped teaching two years ago, I brought up the fact that in my career at Microsoft, I probably wrote a million lines of code. The students were like, "Wow." I said, "Actually, it's not that big a thing. Okay? A million lines of code divided by 25 years, okay, is ... That's 40,000 lines of code. Okay? Divide that by 200 working days. Okay? That's not a lot. I'm a slacker. If you can write 200 lines of code a day, hey, that's a great day."

I love seeing the light go on. So here's the thing. People would say, "We loved your lectures. You seem to have a gift for this," and I said, "Well, here's the thing, is I manage my people by teaching. I raised my kids by teaching. Okay? I don't like to say things twice, so I'd rather teach you." And so I love teaching in the ... Because I started teaching way back in college, but I love teaching even now, just seeing the light go on in people's head. Way too much fun for me.

Mario Juarez: If you could go back to yourself at the beginning of your career with this teaching mindset, what advice would you give to young Mark walking in the door or the Mark that's walking into the door at Microsoft here today?

Mark Zbikowski: With a teaching mindset? Introspection is critical in your career and your life. Whatever you do, do it. Introspect afterwards. How effective was it? What did I succeed at? This is, again, by going back to my father's questioning. Ask yourself these questions. How did it go? Try to be objective about your introspection. Okay? How did what I do achieve the goals that I knew I needed to accomplish? Okay? Where were the differences? Where did those differences ... were the mismatches? Okay? Where did you exceed? Where did you fail?

That's the key thing. Especially as being a manager or a tech lead, introspection is so critical, because being a manager or a tech lead, that's a force multiplier. You get to do way more than if you could just by yourself. Even though you have to delegate a little bit and lose control, you have a much greater effect, but you have to introspect to stay effective. Because your model of the world doesn't match, really, the real world, and you have to always keep kind of tracking it.

Mario Juarez: What's your evaluation of the company today?

Mark Zbikowski: Remember, I'm on the outside, so I can't really talk about... They're making some great strides. Okay? I mean, I love Azure. I think that it's a great thing. I think the focus of being able to pull AI and Copilot writ large ... My first master's degree was in AI, but it was in AI as of 19, late 1970s, which is now thoroughly discredited, thoroughly discredited in the current AI model of the world. Bringing AI in, okay, bringing the power of ... Actually, people talk about AI, but it's actually a really good distillation of the knowledge that's out there. It's a distillation. It's not the full thing, because you can get hallucinations out of Copilot just as easily out of ChatGPT or Google. You get hallucinations very easily, but it will get better. It will.

The thing is, Microsoft still has it, still has it. Tons of really bright people with tons of really good ideas, okay, that some are absolute winners. Some are not, but they're all really good. Every idea is good. If you think it's a good idea, it's a good idea worth listening to. It's still there. The future is bright. The company still has the ability to ... Whatever Microsoft does now, no matter what, if it hiccups, it'll change the world. Okay? But with these great ideas we have, we'll ... can seriously change the world in the next five or 10 years. So I think the company is still on a great, great trajectory, even though it's 200,000-some employees. I left when it was 50,000 so you know.

Mario Juarez: I feel we've covered all the bases.

Mark Zbikowski: I'm good.

Mario Juarez: Awesome. Thanks so much.