

## Something Extra EP 028 – Ed Corno

**Lisa Nichols:** I'm excited to have Ed Corno on today's show. Ed is Chief Technology leader at IBM and is a passionate advocate for emerging technologies. Thank you so much for being on the show today. I know you're crazy, crazy travel schedule right now, so I so appreciate you making time to be with us.

**Ed Corno:** It's my pleasure, thanks for the invitation. It's outstanding opportunity to talk

**Nichols:** Absolutely, you got a lot of great things to talk to our audience about. So I want to go in and jump in, let's just talk a little bit about what growing up was like for you? Can you give us a little bit about your background?

**Corno:** Yeah, I mean growing up in Midwest St. Louis and Kirkwood which is basically a suburb of St. Louis and it was fantastic childhood really, it was kind of Kirkwood is more like it's a wonderful life type town city very much small town, but close to the main part of St Louis, and I enjoy that experience tremendously, a lot of friends, a lot of family, a lot of closeness.

**Nichols:** Well, we have a lot to talk about with your career journey and you have worked for some of the best companies in the world you have had quite the illustrious career I would say starting with Capgemini, and I think that's when I met you a long time ago.

**Corno:** Yeah, you did and Capgemini was a great experience there. I was actually... A principal, which is somebody that actually leads emerging technology practice back then, and that's when kind of the internet was just starting. That was in 1992... Actually, before the formation of Google, Amazon. So I've been in this field for quite a while and saw so many things occur. That's just astonishing how it impacted our society and that's really kind of a reason why I'm in technology, I feel like this field really gives that to people across the board.

**Nichols:** Technology can actually improve lives, can't it? We've seen that happen. So you went from there to... I believe EDS.

**Corno:** Yeah, recruited away to EDS spent nine years there. And a lot of people don't know what EDS is. And really Ross Perot's company that he started. He then sold it to GM, and then was spun off into a public traded company, and Ross very dynamic person. I didn't know him back then, but it still individual as a human as a leader, he really knew what he was doing.

**Nichols:** He did, he was something. I just remember that the Perot Systems headquarters is at, Irving a think. In Texas.

**Corno:** Plano is EDS, and that companies have all through the years as well. Made women became the CEO, and then broke up the company about four years ago in different divisions, so

**Nichols:** Well I remember getting to tour that. And it was like, it was almost like a museum.

**Corno:** Well, we had a nickname at had quarters, that main building there, you'd go up all the way up to, I think was the 15th floor we called the God Pod. Because everything was like a museum there. The awards he had one through the years, his service in the Navy. Pretty interesting person, very dynamic, great sales person and you really came about... And did some amazing things in technology.

**Nichols:** Well then, I believe then that's when you move to HP, correct?

**Corno:** Yes, and that's an interesting little story there, in the sense that I pretty much stayed in the same office, just the company name change, because we were purchased by HP, and I spent another nine years with HP. It saw more transformation there and HP's kind of really the first I say Silicon Valley company. You kind of started out as a start-up, about 1940 or 1939 and you can go there and actually see the garage where it began. And get a little tour of it. It's astonishing. And they focused on radio, radio parts and they got a big contract of the military that launched the company.

**Nichols:** You really had some great success there, and I'm trying to remember was that when you did the transformation of the US Postal System?

**Corno:** Yeah, basically you got assigned different divisions, different accounts, and different clients. And my number one client or account was the US Postal Service. And so I was involved in a lot of different aspects of that organization. Actually is one of the biggest organizations in the country when you take a look at almost 600000 employees, billions of dollars spent in that

organization and so they always have a need for technology. They try to be relevant, cutting-edge, especially what's going on with Amazon, and delivery. They go to seven-day delivery with Amazon, contract out and you're seeing more and more of that occurring across the board with the Postal Service. Matter of fact, on the last project I worked on was in 3D printing and they're thinking about putting 3D printers in post offices across the country. So you could actually create an object have it then sent and mailed somewhere.

**Nichols:** Well, that's fascinating, I don't know that.

**Corno:** Yeah, we did a pilot or 2 just before I left. I think they're still evaluating it. I really haven't seen it yet in the Post Offices.

**Nichols:** But they do have to start thinking differently, to stay relevant.

**Corno:** They also want to pay their own way too within the government. They're kind of quasi-governmental, they're not truly they don't really have a budget set aside in the government. Money is there to make a difference. If there's a shortfall.

**Nichols:** Is there anything else about HP that you want to talk about? Because what we can talk about...

**Corno:** Yeah, HP was exceptional sense that I really understood infrastructure through that company. EDS was more agnostic. You can go in and sell or market or provide clients with any kind of technology. Because we were there for, the manpower and the knowledge. HP had certain products, especially blazed servers, which is basically a mini-server mini-computer and that was very popular and they sold a lot of that.

Also, the other side too, there was a consumer side HP who had to do with ink, we called it "the Black goal" because it was it makes so much money. The profitability there is astounding. They also have laptops, PCs, workstations that are all HP. So that was kind of a separate division that I had a chance to work with. More consumer products. Whereas EDS is not... And then of course then my next company, I want to work for IBM is not consumer based.

**Nichols:** That's right, so go ahead and talk to us about that journey. How did that all come about?

**Corno:** Yeah, it was just, I saw lot change happening HP and then reached out to my network and talk to folks and they basically said ED here's this outstanding opportunity at IBM And I was fortunate enough to be a part of the company and there's so much happening there... We're really driving a lot of the emerging technologies and making them even more relevant than ever before.

**Nichols:** Well, and I want to talk about that. So, you have been a chief technologist at many of these companies that we just mentioned. Talk to us about what is the role of a chief technologist in an organization?

**Corno:** Yeah, and I think people don't really fully understand that role. And if you're in IT, you do to a certain extent, but it's really what I do is strategically look at these different companies, and clients that we have auspice of an EDS or HP and IBM.

See, where's your road map where you going from a technology perspective and then how are different products and services is going to then align to that road map and then architect from there exactly how they all fit. And many times companies are so tactical, they're doing day-to-day activities, they don't have the luxury or the time or opportunity to go out and think strategically about it. That's probably the number one part of what I do is also in particular with IBM, what's astounding about that company is that we're number one in the world with patents over 20000.

Per year for the last 25 years, we have incredible research people. We have lab services. We have at Cambridge right outside MIT an organization there research. We have a research group that's actually out of New York with headquarters there at IBM, so we're always looking at cutting edge ways, and emerging technologies that can benefit not only businesses but human beings as well.

That's the passion part that I like about IBM. We're not just thinking about day-to-day profits, we're looking far into the future and how it can help mankind.

**Nichols:** I love that. Well you've got to feel good about that mission. That gets you up in the morning.

**Corno:** It really does.

**Nichols:** Well, let's talk a little bit about the emerging technology. So you are doing everything from talking about quantum computing to Blockchain, to AI, machine learning, and design thinking. All of these things. So a lot of our listening audience they've heard those words, they're not really sure what does that mean in layman's terms and of course, our IT people will certainly understand it but can you break down some of those concepts for us? So people get really understand, what are we talking about when we talk about blockchain?

**Corno:** Yes, I'd be happy to do that. I'll keep it kind of a basic level of on these different technologies because it can get pretty complicated and longtime of actually explaining it so let's focus on blockchain first. What's exciting about blockchain is now the companies can actually relay information to each other in a confidential manner, and they do that using a distributed ledger and I think everybody's familiar with what a ledger is. It's an accounting term and it's actually excel spreadsheet, could be a ledger, but this particular ledger actually is kind of a read-only type Ledger. You set it up, they call it digital ledger and then it's secured by encryption. In that encryption then, which is the state of the art type security we have now, enables that confidentiality occur. In addition to that you have what they call smart contract that overlays it and that could be code but first you have to work within your network of suppliers and vendors to determine what that could be.

Once you figure out these requirements, then you build out that Smart Contract and what that means is everybody agrees within your network what those terms are going to be. So that obviously that's going to have an impact on a legal field, when you think about it, you still need attorneys in that process, but maybe not as much because companies that agree beforehand, before they set up the distributor ledger, exactly what it's going to be about. The last is consensus which means basically everybody in your network agrees on those terms, which there's really two parts to blockchain. You had that typical part I just described in the architecture, but another area that you have to look at and focus on is that network in a governance piece and that takes time, building that network up. And once you do, then you're able to figure out exactly what's next. And that's basically, in a nutshell, what blockchain is on a high level.

**Nichols:** And do you know right now can even give a use case if maybe a company that's using blockchain, and then how are they using it?

**Corno:** We can talk about this one company because it's not really confidential. It's really public out there it's Walmart and IBM has a service called Food Trust and Food Trust was basically

brought together because we did pilots three or four years ago, with Walmart. Walmart, was always concerned about produce, or meat spoilers, perishable items. They could actually kill people. I say about eight or nine years ago, had a problem and there was Spinach recently. I believe it all those different types of perishables can cause illness and what it does to Walmart, they have to shut down the stores, try to trace it back and find out exactly where the problem is. And that traceability, part is also really strong within a block chain.

We did that recently we had an issue again, with leafy lettuce... And it proved itself out instead of taking say, a month and a half, to find where hysteria might be or some kind of bacteria, they call it illness. We found it within a matter of a week, so it really speeds up the process.

**Nichols:** You could just stop it at the root of where it was happening.

**Corno:** Walmart has a roughly I think it keeps adding partners in the network, itself, but they have less Nestle Purina. They have Golden State Foods, all these other vendors all these different vendors are involved in that network. That makes it really strong and powerful. That's kind of a model, you want to go to when you build out a block chain.

**Nichols:** Okay, well great. I think that something everybody can understand.

**Corno:** And one other thing I wanted to add to that is that when you look at blockchain is really the underlying architecture for Bitcoin. And a lot of people I know a bitcoin is. And that started back in 2008 and we saw that researchers saw that this technology had a lot of promise, at IBM, and we actually tried on ourselves about summer eight years ago, to prove it out. It is very successful for us.

**AD:** Let's go on and take a quick break and then we'll be back with Ed Corno.

**Nichols:** So Ed, we're all hearing a lot about artificial intelligence, machine learning, and I know you're doing a lot of speaking on that, so talk to us a little bit about that. What are you seeing out there?

**Corno:** Yeah, from an AI perspective. First of all, we've got to define it. There's machine learning and AI, the two main definitions, and really, there's a lot of work being done right now. Machine learning and to kind of understand what that is. It's almost like you look at your phone and you type in a couple of digits and up comes a full phone number of the person you wanted

to talk to you click on it. So, that's machine learning basically computers, servers, and the clouds learning your preferences and get smart as time goes on.

The other AI is actually more interactive. We are asking questions like a... Like Alexa, etc. back and forth, but exactly what you're trying to achieve, that's really basic AI, that's really not sophisticated yet, and it's going to take years for us to get to the point where you'll ask it a question, and then it'll not only tell you the answer, but then you give you multiple answers and directions and advice. That's kind of the next layer of artificial intelligence.

The great thing about IBM and what's happening with that natural process language. And I'll give you a for instance, on that typical AI, it's still kind of klutzy at some different companies where you ask "Okay, give me some information on John Kennedy." If it's not natural process language, it will come back saying John Kennedy. John Kennedy is at an airport in New York."

No, you wanted to know about the politician John Kennedy. And IBM's tools and AI allows you to have that kind of flexibility and visibility within a question that might come up. So that's what natural process language is, it's not very static. You see that with Google and other different competitors are where it's most like a search, but it's a voice-oriented type search. What we've done is really become more sophisticated able to really expand upon that AI part of it.

**Nichols:** I don't know if I ever told you this but Greg has a degree in AI from Washington University. Yeah, well, back in the day when we were at McDonnell Douglas. Mc was using AI in their scheduling system at back then. And so it's not really new, but I believe that it's crossing more industries now.

**Corno:** It definitely is. And what we're seeing too is this is actually out in the field and companies are buying it, it's called robotic process. Robotic automation process. So RPA really is astounding type of machine learning that combines what we call AI, but really its machine learning, and then allows you to really do automatic type processing, that you normally wouldn't say a customer service rep decides that he wants to find a certain name or whatever. He does types on a couple of letters up comes that full name. And what we're seeing is tremendous savings of 30 to 40% versus what the traditional manual way was. It makes a huge difference for companies.

**Nichols:** What does it do? I know a lot of people are so afraid and thinking. "Oh, robots and AI, and machine that's all going to replace humans", but it really is not.

**Corno:** No, that's the thing, is and our CEO and she's fantastic, Ginni Rometty talks about basically we're in control. Human beings. And we're just using these tools to assist us in better ways of doing processing like I just talked about ways to improve efficiencies and productivity because that's going to really be the value of it, why else create it? And there's also conjecture like, "Okay it's going to become a terminator type of scenario" Elon Musk has weighed in on that as well. He's created a company called Open AI. It's a non-profit, there's about 10 experts in AI working on it, trying to see how far they can push it, and then alert politicians and others in the industry to be very careful with how you're dealing with AI.

**Nichols:** Well, you had even told me something that just came out from Mark Cuban. Talk to me a little bit about that.

**Corno:** Mark Cuban shark tank, billionaire, owns the Mavericks. He really recently said that if he was going to start a business, it would be an AI, if he thinks is going to eclipse the internet that's how impactful going to be and how it's going to affect everybody's lives. Not only just business but across the board, in what we do, and it makes a lot of sense, some of the mundane task we have, and do, and achieve. Every day in business, in our lives. And you look at GPS in a way that's artificial intelligence for the car and just think of all the gas you save though the years, who gets lost now?

**Nichols:** You don't take 10 trips around the barn. You just go from point A to point B because of the GPS. Yeah, and so I think the whole point for people out there that may be afraid that this is going to replace the human capital aspect, it is not, it's going to really help automate those mundane tasks, so then we can spend our time on more strategic things in higher-value add activities.

**Corno:** That's exactly right. We believe that at IBM. You articulated very well, is that we want people customers to go to those more high-value type situations and not be stuck in those low value really commodity-type situations. When you think about your work life isn't that what you want to do? Why would you want to do mundane, repetitive type task over and over and over again?

**Nichols:** Honestly, I think that's going to help people feel even more engaged because they're going to be able to do more challenging work. So more interesting work.

**Corno:** They should be happier with what they're doing because they don't have to do the mundane.

**Nichols:** So let's all get excited. Something to celebrate.

**Corno:** And if you want to look at it further and examine it, I say this throughout my career, "Get the Dummies books, believe it or not". It's a nice basic kind of understanding, easy language that you could really pick up on, and then give you kind of an overview of what it's about. Matter of fact, Mark Cuban mentioned that on the internet article. He has a machine learning for dummies that he reads and he's right. I've done it through the years as well.

**Nichols:** That's great. Well, so we talked about this, but just quantum computing is something else that you're exploring and talking a little bit on right now, but as we said, there's not a lot of use cases out there. We are talking really not just cutting edge, we're talking bleeding edge, so there's not a lot out there yet, but is there something you want to say about quantum computing and for people to be?

**Corno:** Quantum computing is pretty complex, and uses quantum theory and we're trying to apply that with a computer to find out exactly, solutions to real complex issues that have been out there for quite a while, and there are very few actual quantum computers that researchers are working on right now. And so, it is really kind of bleeding edge cutting edge.

So from a business perspective, a lot of applications in the future, especially in chemistry, especially in space, all sorts of different areas that you can think of. And the one thing that's really interesting is several days ago, research groups, he have been able to take a particle and then go back in time, using a quantum computer. Now, whether or not, we're going to go back in time or travel, that's a different situation, or scenario, but they've taken a particle one of the smallest things on the planet in existence and been able to push it back in time and manipulate it using the quantum computer.

**Nichols:** What is just so amazing to me, again, and it's back to your point, and this all takes human beings, takes human beings, but every generation is building on the next isn't it? And so, it's just amazing to think about how far we've come. You talked about the internet, the world-wide web was just invented in 1992 or 1990. Look how far we have come. We love technology. I'm glad that you're in it, I'm glad we're in too. We're in a good place, I think.

So this is something extra. So I'm going to talk to you just a little bit about that. Tell us a little bit like something extra maybe in one of your team members can you tell them?

**Corno:** Yeah, something extra. I just love that theme. It's kudos to to you. It's a fantastic way to talk about people, what they're doing, from a leadership perspective. And to me, what I've seen is people going above and beyond expectations.

That's the something extra. And to give you a little story about that I had a team I was working with. It has to do with blockchain it has to do with a marketing coin we were trying to create and to be able to do that for this Fortune 500 company, we had to do a lot of research and figure out exactly how that would work, we looked at BitCoin other coins and then determined this was the best way to go.

We could have just used our own research and information and presented it to the customer, but we went above that so they could really understand what we could do for them and looked at many different applications and approaches to it and of course they were extremely satisfied with it and we're going forward with a marketing coin. It's really going to be more of a token and that it's really going to change their industry.

**Nichols:** That's amazing, that's mind-blowing. But that team went above and beyond, went the extra mile.

**Corno:** Extra mile to really find out insights into how the blockchain and this particular loyalty coin could work.

**Nichols:** I tell you, we have a lot of those people here. I'm really blessed to say we have a lot of people that go the extra mile and you just so appreciate those team members don't you, Ed? They're gold. You don't want to lose them.

**Corno:** No, you really don't. You want them around for a lot of time.

**Nichols:** That's right, so talk to us a little bit about, have you noticed in somebody that you worked with and where there was something extra missing?

**Corno:** Definitely yes that... And occasionally you run into it but a lot of folks I work with are very professional and they always give a lot more than expected but sometimes it's a situation. What

I've seen is more about communication. That's the number one issue where you make assumptions across the board, with customers and information that's not accurate and when people just assume, Okay, this is the way it should be, or you've done it like this before for this customer, they're not asking questions, questions are, so critical. in any kind of leadership situation across the board, so you really need to focus on that part of it, and then they get familiar with what you're trying to say. And then that Communications' enhanced. But I've seen that with teams before where they just kind of hunker down, they're not really communicating with each other or even with the customer.

**Nichols:** That's really great advice. Even for young people out there. You may not think communication is that important? The written communication, verbal communication. And many times, the onness sometimes falls on the communicator because the person you're communicating to may not really understand so you need to figure out a different way. We say sometimes drawing pictures, right?

**Corno:** There's nothing wrong with that. Design Thinking.

**Nichols:** It is very important to make sure that person that's listening really understands and everybody's on the same page.

**Corno:** Then also you have to try to relate to the level who you're talking to. As many times, and especially in information technology you can really geeked out if the person doesn't really understand what you're saying to go along with what you're saying. So you have to adjust and determine the level of expertise that person you're talking to. Always consider your audience.

**Nichols:** So talk to me about this, what is the something extra that you believe every leader needs?

**Corno:** You know I've studied this for quite a while, and it is resiliency. The capability to bounce back from negative situations in all those situations, failure, etcetera. It's more of like a learning experience for you. I really believed that no one fails.

**Nichols:** I love that and I could not agree with you more. It's a learning opportunity or it's not a failure.

**Corno:** If you had that kind of perspective and you believe in that deeply you'll be successful 'cause you're not going to give up. You'll be persistent and a part of all that is passion. Steve Jobs said that you have to have passion in what you do because of the fact, you're going to be spending a lot of hours doing it, you're going to be dedicated to it, and that's your waking hours, that's your life, you're giving to whatever you're trying to pursue.

**Nichols:** No, you have to have some sort of why. What is your why for what you're doing? And so, when you can find that thing that you have a strong why about, that's bigger than yourself, you can be passionate about it, and you're going to bring your whole self then to that situation.

**Corno:** No doubt about it, it makes a gigantic difference in what you're doing and you're going to be successful with it.

**Nichols:** Okay, so I do have something that Ed and I are really excited about. We have a Women in Technology event that is going to be hosted here at technology partners on April the 18th, from 8 to 10, and Ed has graciously agreed to come and bring all of his knowledge about artificial intelligence and machine learning on the panel that day, so, Ed, I'm so grateful that you're able to do that.

**Corno:** Thanks a lot for the invitation. And it's really exciting when you think about it. Women in technology is an area that we really need to expand upon. There's just not enough women in this great industry that we have. And so I really look forward to being with you on that panel and talk about what's happening and especially when you're looking at what I think is going to be tremendous across the board for our industry.

**Nichols:** Well, Ed this has just been so much fun. I think we could probably sit here for a couple of more hours talking about these emerging technologies, but we just so appreciate you being on the show today, and I know our listeners are going to get so much value from the insights that you've shared.

**Corno:** Thanks, my pleasure, thanks for the invitation.

