

WE ARE ETH – Episode 19

With Maja Bundt, leading expert in cybersecurity and Member of the Board of several companies and organisations

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[00:00:00] **Maja Bundt:** Everything is based on data and computer systems basically. And it's getting stronger and stronger in that sense. We are vulnerable as a society. We are vulnerable as people, we are vulnerable as individuals and as an economy. And I think this is something that needs to be, taken into account. We have to be very aware of that fact, and we have to take action every one of us to make sure we, we know the risks, at least, as good as we can, and we manage those risks as good as we can.

[00:00:33] **Susan Kish:** In this episode, I'm talking with ETH Zurich Alumna and cybersecurity expert Maya Bundt, who was an executive at the Reinsurance Group Swiss Re for 20 years and is now a member of the board of several organizations including Cyber Peace. This is the We are ETH podcast, and I'm Susan Kish, your host.

So Maya, help me connect the dots here, right? You got a diploma in Geo Ecology in Bayreuth at the University of Bayreuth in Germany. Then you did post-grad and applied statistics at the ETH Zurich, and then you did a doctorate environmental science. But now you're a cybersecurity expert having worked in reinsurance for a long time.

Talk us through how this path weren't, and how did you actually start off in geo ecology?

[00:01:26] **Maja Bundt:** Yeah. Thanks for having me, Susan. And I think the words you are looking for is life. Life happens and then you set out to be an environmental scientist and then you end up being a cyber expert.

Yeah, it's been a journey, colorful journey. And there is no step that I would do otherwise. It was a good journey for me. Yeah. I started studying geo ecology in

Bayreuth. That's a small town in Northeastern Bavaria. They have a small but very good university there.

And the program that I was studying was quite exclusive at that time. There were only, I think three universities in Germany overall where you could study geo ecology. And it's quite similar actually, but a little bit different from environmental science at the ETH.

[00:02:14] **Susan Kish:** What is the difference?

[00:02:16] **Maja Bundt:** I think they just have different courses in the beginning, and you can, then major in, in slightly different areas. So what I did after the first two years of general studies where you do all the math and physics and chemistry and all the practicals. In Bayreuth at that time - I have no idea whether that changed by now - you could then specialize in different areas and I specialized in soil science and...

[00:02:44] **Susan Kish:** How did you get interested in soils? What was it about soils?

[00:02:47] **Maja Bundt:** I always wanted to study biology. And that was because I had an awesome teacher in in my, Gymnasium in school.

[00:02:57] **Susan Kish:** That makes a huge difference, doesn't it?

[00:02:59] **Maja Bundt:** It's incredible. I think that is actually one of the biggest things that a teacher can do is inspire this passion of their pupils. And I had this wonderful teacher, his name, we called him "Lurchi" which is as a nice name for a little lizard. And he he was just a great teacher.

[00:03:15] **Susan Kish:** How affectionate.

[00:03:16] **Maja Bundt:** And he brought back stories from his travels in Madagascar at that time where, nobody ever traveled to Madagascar. And he was really an inspiring teacher. So I set out, I wanted to study biology and then did a little university tour in Germany to see which university had the programs that were fitting to me. And while I did that, I stumbled while visiting Bayreuth, I stumbled across "Geo-Ökologie", so geo ecology and I thought, wow: that's it. So that's what I did. Instead of biology.

[00:03:47] **Susan Kish:** Is that where geography intersects with ecology or what is geo ecology.

[00:03:52] **Maja Bundt:** It's all the life and geoscience sciences together. Actually in the pre-diploma at that time, we still had the diploma studies. So the first two years as I said, you do math and statistics and I did a little bit of programming as well, which, unfortunately I didn't stick. But also chemistry we had with the chemists and math and physics and everything.

You go through all of that. And then you also have the interesting stuff then that you in the thick of things like soil signs or hydrology

[00:04:27] **Susan Kish:** What's hydrology?

[00:04:28] **Maja Bundt:** Hydrology is the signs of the water. And huh the university at that time was doing a lot of experiments of small streams and how they've...

[00:04:38] **Susan Kish:** Wow!

[00:04:38] **Maja Bundt:** ...slowed and, what kind of lives in there, water quality, et cetera.

Geology, we did a lot of really cool excursions, going out even by bike, driving around Bayreuth and looking at geological formations or in the soil science part, then digging holes in the ground and, looking at the soil profiles.

And lots of practicals. And I have memories of summers sitting in a field and and looking and counting basically plants and seeing what's there.

[00:05:12] **Susan Kish:** So how did you go from Bayreuth, which is in Germany to the ETH Zurich and why did you pick statistics? Because I gotta tell you, that is not usually in the fun category.

[00:05:25] **Maja Bundt:** So yeah, I think I have to put something right. So I did that statistics course, but I did it while doing my PhD in environmental science and soil science at the ETH and the...

[00:05:37] **Susan Kish:** Ah, so you did your PhD at the ETH?

[00:05:40] **Maja Bundt:** Exactly. And I knew I have to employ statistics in my field work. So I thought, this one or two courses that I took, that was a long time ago and I thought I better, brush up my statistics knowledge.

And that was actually was a good idea because at that time I had my own field experiments and all of a sudden statistics made sense. Before that, it was a, I don't know, a concept...

[00:06:04] **Susan Kish:** Abstract concept.

[00:06:06] **Maja Bundt:** Yeah. Didn't stick with me so much. I could learn it and I could write, I could pass the tests, but it didn't talk to me.

But when you are designing your own field experiments, and then you are looking at, the concepts and you think this through in that context, it's a completely different story. That would be my shout out to every student who is despairing on statistics.

Wait until you have, a practical work in front of you and employ it, and then it's a completely different thing. Yeah.

[00:06:36] **Susan Kish:** Then it suddenly makes sense.

[00:06:37] **Maja Bundt:** Yeah.

[00:06:38] **Susan Kish:** Very cool.

So this was in the nineties.

[00:06:42] **Maja Bundt:** Yeah, that was in 1996, I think. It was this long time ago.

[00:06:49] **Susan Kish:** It's not that long but I understand.

[00:06:51] **Maja Bundt:** And then I found a project which was just starting at that point in time at the WSL, the "Eidgenössische Forschungsanstalt für Wald, Schnee und Landschaft",

[00:06:59] **Susan Kish:** Which means?

[00:07:00] **Maja Bundt:** Yeah, that's the Swiss Federal Institute for Forest Snow and Landscape Research.

And it belongs to the ETH but it's a separate institute. So they actually, they don't do any courses or anything. But as a PhD student, you can be there, but you have to find a professor at the ETH to take you on.

So that was my big thing. And I remember that was quite funny. So I found a space there, somebody who would take me on with my, grand research ideas which I thought were perfectly suited for this, for this new large project that was starting then. And I found somebody who would, give me a contract so I could work there.

So that was all set, but then I still had to convince a professor at the ETH to take me on as a PhD student.

[00:07:41] **Susan Kish:** And how did you do that?

[00:07:43] **Maja Bundt:** Yeah, I took my research proposal and I had a, it was like an interview and he sat there in front of me and I think he brought a couple of his students as well so they could, challenge me from all sides.

And it was interesting, I think I came with all these ideas and the good thing was the research that I proposed was a continuation and further a deep dive of some research that I had done in my diploma thesis. So I had done already some work and

I was already into the thick of things and I was quite solid in terms of what I knew already.

And how I wanted to apply that then to, to this new field, right? Which was my idea. That was oh my goodness. This institute was in an industrial complex in Schlieren, which on the out skirts of Zurich.

Nobody wanted to go there. So I went there and he was sitting there in front of me and then he just looked at me and say, okay, it's all good, but please, now here is a piece of paper, write down the two most important graphs. Basically, the results of your research, write them down right now. And I went,

[00:08:52] **Susan Kish:** Holy cow.

[00:08:53] **Maja Bundt:** Okay.

[00:08:57] **Susan Kish:** So it sounds like he was forcing you to, so to step back from the details and really tell you what your goal was.

[00:09:06] **Maja Bundt:** He wanted to see if I had a hypothesis a scientific hypothesis.

And I actually, I think I did, but not so clearly. So he really pushed me to view that in a different way. And that stayed with me. Honestly. It stayed with me.

[00:09:21] **Susan Kish:** So you did this work, that research typically takes several years. Did you move to Schlieren or did you stay in Zurich?

[00:09:29] **Maja Bundt:** I moved to Zurich for that one. And I stayed in Zurich and yes, it took me I think I did one year or one year and a half of very intensive field experiments.

And that was fun too. Because I had this huge idea and everybody was laughing at me. And obviously I couldn't do it on my own, so I bribed everybody and their grandmother to come with me to the forest and help out. And what I did is every field day I baked a huge cake and brought cans of coffee and tea and whatnot.

And I think yeah, people were quite happy to come out once in a while for a day in the forest with me and take soil samples and be part of this. Quite amazing, I'm say, sorry, it's it's not very Swiss here, but quite amazing experiment that we did then. Yeah.

[00:10:18] **Susan Kish:** How do you actually take a soil sample? What does that mean? You just take a trowel and dig in the ground or what does that mean?

[00:10:23] **Maja Bundt:** Since I wanted to show how solutes in water, whether they flow through the forest soil everywhere the same or whether there are some preferential flow path where, you know, where more of the solutes go through, et cetera, and whether, what kind of impact that has on the chemical and biological environment then.

So what we did is to be able to visualize that, right? We had a sprinkler. And we then colored water with some food color, blue food color. And we sprinkled it onto a square meter, basically, of the forest soil. And then we dug a really big hole. So you had a nice profile, like a wall, and then you could actually see where the blue color had flowed through.

And so that obviously stained blue and the rest it was still all brown didn't get any of the rain, so to speak. In the different layers, you could take samples from the blue part of the soil and from the brown part of the soil. And then you would take samples into little plastic bags which obviously we had to label very carefully because that was super important which experiment, which day and which depths and so on.

So we all did that. And then you would take the soil samples back to the laboratory and I have, pictures with hundreds and hundreds of bottles, and the nice thing was since this experiment was quite special and the samples itself were unique, a lot of people wanted to work with me. So I had, it was great. I could work with other people who were interested in not the chemical analysis I did myself, but then there were people who would do biological analysis on microorganisms on those samples. And I had a colleague who would do radio measurements for...

[00:12:16] **Susan Kish:** Oh, for radio activity?

[00:12:17] **Maja Bundt:** Yeah. And that was so cool because I had these samples and then we just wrote papers together. And that was cool. That was really good.

[00:12:25] **Susan Kish:** So you finished your PhD. And then what BCG said, here's a smart young lady, I'm gonna hire her. Or how did you start off, how did you switch into management consulting? Or was that directly after?

[00:12:39] **Maja Bundt:** I finished my PhD. I, did everything. And then I did go into management consulting. And the reason for that was I thought I had spent now basically all my life in school and at university, and I loved it. It was great. But I thought if I want to continue, then I'm, very confined to first of all that, that path. And the other thought that I had is if I continue with this, I'm, I'm very confined in my life choices. Because there's only very...

[00:13:10] **Susan Kish:** You didn't have many options.

[00:13:12] **Maja Bundt:** Yeah. There's only very few universities and very few open positions in my field. It's a very specialized field. And I thought, okay do I want to live my life, in a way that I absolutely have to go no matter what.

If there's an open position and I can have it, I have to move there. And I thought, maybe there are other things out there and I would like to explore a little bit more, right? And this is why I then looked around and management consulting seemed like a good opportunity at that time to get into different industries, learn and do something.

[00:13:48] **Susan Kish:** Yep. Learn about business, learn about other parts of the world.

[00:13:51] **Maja Bundt:** That was my thinking at that point in time. It worked out pretty well, I would say.

[00:13:57] **Susan Kish:** And then talk us through, how did you go from management consulting to, did you go after that directly to Swiss Re?

[00:14:05] **Maja Bundt:** Yeah, that was, again, was a kind of an easy transition because at some point, and I knew that when I was starting that I probably wouldn't grow old and gray hairs in management consulting. It was a great time. Wouldn't miss it. But I knew that was probably only an interim step for me. And I started looking to what would be my next step? And then Swiss Re actually came with an offer. I had, done some work for Swiss Re while at BCG, so they knew me. And that was, for me, was an easy move because I just loved working at Swiss Re with the Swiss Re people.

I felt at home there. They had a very nice corporate culture that kind of I responded to. And they had an interesting offer for me. So I jumped.

[00:14:52] **Susan Kish:** And at Swiss Re what did you do and how did you, how did the interest in cybersecurity arise?

[00:14:58] **Maja Bundt:** Oh, so that took a little bit, right? So I started off in, I always say and I hope nobody ever listens to this podcast because I probably will be crucified for that. But I started off in technical accounting and claims and that is in reinsurance at that point in time, I must say. It's it's now it's, I hope it's different. I think it's different, but at that time it was like, like the the you always have this view of the of the person who starts as a dish cleaner in a restaurant, right? And then makes it make their way up, right?

And so I started at the end of the reinsurance chain, which is where then all the counts are being managed and the claims are settled. And that sounds weird but it was an interesting time because what you do is you understand the business basically at a very fundamental level. Yeah. And that helped me a lot later on and...

[00:15:57] **Susan Kish:** I'm sure.

[00:15:58] **Maja Bundt:** So it was really cool. And I also, were able to have my first team my first line management experience. Had a great boss great bosses, I must say. So I learned a lot and no, it was a good time.

[00:16:13] **Susan Kish:** And it sounds like during the 20 years you just kept on getting interesting jobs every two or three years.

[00:16:19] **Maja Bundt:** Yeah. Not every two or three years, but I moved quite a lot and I think what is maybe a bit unusual is I jumped across lines.

So from technical accounting and claims, I went into basically operations and then into completely different area. From there I went into group strategy, again, completely different area and then into reinsurance. And here now you hear a little bit also how I ended up as a cyber expert.

And that, I would say probably started when I was working in IT where for a very short time I also had in my, my area of responsibility, the cybersecurity team. But even after that was gone, that was always a big topic in IT. And I took that and, what, whatever I had learned and started to love in terms of technology and understanding also the risks of that. When I then went and worked in group strategy, that topic just was sitting there and was basically shouting at me: here I am. I need somebody to help me develop. And I just said, okay, maybe that's me.

[00:17:33] **Susan Kish:** But this was cybersecurity from the perspective of underwriting, the risk of others or cybersecurity in terms of protecting Swiss Re?

[00:17:42] **Maja Bundt:** No, that was cybersecurity in terms of cyber insurance. And that was at a time where there wasn't a lot there.

[00:17:49] **Susan Kish:** This is what years? Two thousands?

[00:17:53] **Maja Bundt:** No, that was 2014 maybe. So there was a cyber insurance market, but it was really small. Really small.

[00:18:06] **Susan Kish:** And the demand was probably huge.

[00:18:08] **Maja Bundt:** No, there was no demand.

[00:18:10] **Susan Kish:** Really?

[00:18:11] **Maja Bundt:** Yeah. Yeah.

[00:18:12] **Susan Kish:** People weren't interested in being insured against it?

[00:18:15] **Maja Bundt:** Nope. Most people didn't know.

[00:18:16] **Susan Kish:** So they effectively self-insured.

[00:18:19] **Maja Bundt:** Yes, absolutely. Or they probably thought they were already insured, but they weren't. No, that was at a time where actually the insurance industry's biggest growth inhibitor was that people didn't take cyber risks very seriously. Yeah. You cannot imagine it today because it's everywhere. And it's a, but it's honestly that was the biggest thing was, how do we get awareness into the market? And yes, there were a few companies that were insured mainly the big large corporates.

That was where the market started. But the market was tiny. And also very few insurers were actually offering cyber insurance at that time. So it was really yeah, at the start and nobody understood it. Honestly, we didn't understand it. We didn't have processes, we didn't, there was, we developed that over time. Also all the models to model the risk, et cetera. So that all came then, during that time. And that was what was so fascinating to me.

[00:19:22] **Susan Kish:** To make sure we're on the same wavelength, how would you define cybersecurity right now in the days of internets of things in a gazillion devices.

What is it exactly?

[00:19:34] **Maja Bundt:** So cybersecurity, you have this triumvirate of confidentiality, integrity and Whatever you do, and you make sure you safeguard your confidentiality, your integrity and your availability of data and systems so you can work, you can do your normal operations, et cetera.

You safeguard also the people behind those data. If this is for example a personally identifiable information, then that is cybersecurity. In terms of insurance as I said that, that started early. And the first cyber insurance products probably came in 2000 with the "year two k bug" and scare. That is when, first products came on the market. That was a, as I said, very small market. And then that developed towards different areas. One big booster was then the data privacy infringement covers in the US when all of a sudden kind of data breaches...

[00:20:39] **Susan Kish:** Big hacks.

[00:20:41] **Maja Bundt:** Et cetera. And then there was a lot legal risks, et cetera. That was a big driver. So the US market largely developed based on these data privacy infringement covers, whereas in the rest of the world, mainly Europe, first there was probably a little bit more focus on business interruption covers. Now that has all come together and it's basically same demands and needs everywhere, except obviously in jurisdictions where you don't have very strong data privacy laws there. The need for strong data privacy covers is not as big as in other markets.

[00:21:17] **Susan Kish:** How big is the cybersecurity insurance and reinsurance market today then if you described as very small, as recent as 2014?

[00:21:25] **Maja Bundt:** I'm out of the market now for a year or almost a year, so I probably don't have the latest numbers, but I guess it's around 14, 15 billion US dollars globally.

[00:21:40] **Susan Kish:** So what today, especially after Chat GPT exploded and the increased interest in errors around artificial intelligence and seeing all the military applications of this in the war in Ukraine, what do you see as the biggest threats that we should be cyber aware of in 2023?

[00:22:06] **Maja Bundt:** Yeah, so I think you came out with two good ones, right? So I think if we are talking about how our lives and our thinking is driven and supported by media, by search engines, by artificial intelligence, whatever. I think that is one really big area of risk.

And there's several risks associated to it, right? You can have the wrong training sets, you can have not the right governance around it. You can have all kinds of things, but I think that is something that has a really broad societal impact and we see that everywhere, right, is the the kind of ability to influence large groups of people.

I think that is, is a huge risk associated with that. So I think we absolutely need to find the right way to govern these models. But also to make sure the education on how to use digital means, use support functions that is super important for everybody.

For just everybody. Should not be, only taught in university, not only at the th level, but that is something that you should start. Having kids in kindergarten already understand and critically think about what it is.

And obviously you can't go too far there, but you can, start with the basics, so I think that is a big story. In terms of state or state sponsored aggression. In cyberspace, there has been a problem for years now. It's only, gotten, I think bigger I think over the years.

Having said that the biggest surprise I think of the Ukraine conflict was that not more really, rather devastating cyber events have happened based on that yet. Doesn't say that it's not coming, but that is something that, I think a lot of cyber people in the industry have been surprised about.

[00:24:06] **Susan Kish:** You're right, it sure looks like a World War II battle that does not necessarily look like a our century battle.

[00:24:13] **Maja Bundt:** Yeah. So anyways, so I think but that doesn't mean that we can relax, right? Absolutely not. I think in a way that all our kind of lives, our critical infrastructure, our economy is digitally supported.

Everything is based on data and computer systems basically. And it's getting stronger and stronger in that sense. We are vulnerable as a society. We are vulnerable as people, we are vulnerable as individuals and as an economy. And I think this is something that needs to be, taken into account. We have to be very aware of that fact, and we have to take action every one of us to make sure we, we know the risks, at least, as good as we can, and we manage those risks as good as we can.

[00:25:01] **Susan Kish:** So it sounds like cyber awareness, for lack of a better term, at the individual level, at the institutional level, whether that's governments or businesses or other kinds of institutions.

[00:25:16] **Maja Bundt:** Yeah. Cities, communities, any institution, anybody. Anybody and everybody is important but doesn't stop obviously with awareness. Awareness is important, but it doesn't stop there.

[00:25:30] **Susan Kish:** Got it. So having left Swiss Re a year ago what are you up to now? Or what is Maya's next step?

[00:25:39] **Maja Bundt:** I'm already in the middle of my next step. I'm now what I call a portfolio director. So I have a portfolio of engagements of mandates.

Some are companies where I sit on the supervisory board and the others are actually most are cyber engagements, for example and these are voluntary. In your introduction you mentioned that I'm also on the board of the Cyber Peace Institute. And I'm also on the board of the Swiss Risk Association. I'm chairing the cyber resilience chapter there and this is where I also engage myself. It's a lot of fun. As well I stay close to the topic that has been so important to me. I'm also participating in the Geneva Dialogue, which is an international dialogue sponsored by Switzerland to also promote and find ways basically for a cyber peace on a larger level. So it's it's all kinds of things that keep me busy and on my feet every day.

[00:26:39] **Susan Kish:** It sounds like you have a good diversified portfolio as the bankers would say.

How did your years at ETH prepare you for what you did at Swiss Re and what you're doing now and the work you're doing in cybersecurity?

[00:26:55] **Maja Bundt:** That is a very good question. So first of all, the ETH gave me a lot of opportunities to just test out things. I don't know how it's nowadays, but when I did my PhD, I did not have to take any courses, right? So the statistics was purely because I thought it was interesting and I needed it.

I think the only thing that you needed for that was a lot of curiosity and the will to, just do that in your spare time and on top of everything else. But if you had that you could do awesome things and experience awesome things. So that was great. I kept that.

But I think what I honestly learned in my studies of environmental science is to think in systems and how different things influence others and how that then leads to effects that you might or might not have foreseen and all of that.

[00:27:48] **Susan Kish:** What, what makes ETH special for you?

[00:27:48] **Maja Bundt:** I don't know actually why that is, but I can tell you it is. Also in terms of this podcast and other events. If ETH, is asking I'm very happy to give my time and, support both the institution, but also other students and and graduates.

For example, I'm also mentoring an excellent, bright young woman from the ETH right now. And it's things like that I keep close, but I think as an institution it, it really inspires this feeling of, we are also a family and we are here and you can still also look to us and, keep in contact and continue to learn. I love that.

[00:28:31] **Susan Kish:** So I'm gonna ask some closing questions. What is your favorite place in Zurich or at the ETH. Where is it you'd like to go?

[00:28:48] **Maja Bundt:** Phew. So there are several favorite places in Zurich. So I love the Arboreum in front of Swiss Re and the lake. So that is in spring you have the spring flowers and the swimming is awesome and it's just, this is where Zurich is.

[00:29:03] **Susan Kish:** Fantastic. Maya, thank you so much. That was a great conversation and thank you for sharing your stories. That was wonderful.

[00:29:10] **Maja Bundt:** It was great talking to you.

[00:29:16] **Susan Kish:** I'm Susan Kish, host of the We are ETH series, telling the story of the alumni and friends of the ETH Zurich, the Swiss Federal Institute of Technology in Zurich. ETH regularly ranks amongst the top universities in the world with cutting edge research, science and people. The people who were there, the people who are there, and the people who will be there.

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