

## Privacy Sigma Riders Episode 3: Who Needs Privacy Engineering?

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**Michelle Dennedy:** Hi, everyone. Michelle Dennedy here, Chief Privacy Officer at Cisco. If you've ever run into me, you've heard this before. Privacy is not something you can bolt on at the end of a process or a product that you've built. Privacy is something you have to bake in from the beginning just like any other product requirement. It's a concept we call privacy engineering. While the route to achieving this level of embedded privacy is complex, the concept is simple: understand what data you have, why you need it, the value it delivers to you and your customers, and the promises you made to secure and protect that data. Armed with that information, you can begin to develop the right privacy policies for the right data and translate those policies into processes, solution designs, product requirements and code.

I'm very excited to have two very special guests with me. A global privacy expert with decades of leadership experience at Intel, McAfee, Ebay, Sun, and now with me at Cisco, my coauthor of the Privacy Engineer's Manifesto, Jonathan Fox. Welcome Jonathan.

**Jonathan Fox:** Happy to be here.

**Michelle Dennedy:** Jonathan is the director of privacy engineering on my team and also serves as the data protection and privacy officer for the Americas. And we have Lisa Bobbitt. Lisa is the data privacy architect on my team who is responsible for making sure privacy is not only top of mind among the architects and engineers that own the myriad product offerings and internal applications at Cisco, but that privacy is embedded in them. In other words, Lisa is making it real. Welcome Lisa.

**Lisa Bobbitt:** Thanks, Michelle.

**Michelle Dennedy:** So Jonathan and I go way back. A lot of history there and some secrets that we will not share on the podcast today. We're fairly new members to the Cisco family, especially, compared to you Lisa, a 20-year Cisco veteran. That's a long time.

**Lisa Bobbitt:** Yes, but it's been fun.

**Michelle Dennedy:** And still loving it. She's still smiling. You can't see that in your headphones, but it's pretty incredible and a lot of changes. Lisa, can you tell us a little bit more about yourself and how you got into the privacy game?

**Lisa Bobbitt:** I kind of fell into the privacy game because I fell into security. Over my time at Cisco, I have done a lot of interesting things. I started out as a software engineer

working with customers out in the field. Became a router jock. Worked on some of the routing protocols especially for mobility, which put me into things like tanks and race cars. And then I worked on video and voice to put into stadiums. The next thing I looked at doing was really going, "Oh, how does this all fit together?" I got involved in some of the government work that Cisco is doing and then that transitioned into our security team. Worked with them for five years, understanding mainly how we put security built in at the beginning of our products and our software and hardware.

One Christmas we had a week off and I picked up your book and Jonathan's book, the same book and read it. I went, "This brings it all together. This brings the people and the technology." Given all the things I had learned about the attacks and the concerns people had about identity theft and security of their information, it just made such sense that we needed to build that in.

Michelle Dennedy: Well, I'll tell you what and career advice for any of the podcast listeners, probably the best way to win someone over who hadn't even designed [inaudible 00:04:32] for my first privacy engineer, calling me up, telling me that you've read the book that we wrote, that you care about, that you've integrated it into 20 years of an absolutely historied career, that's how you get it done. So, Lisa and I remember that conversation. I won't make any commentary on your recreational Christmas hobby. I happen to share them. I thought that was normal, but apparently we are abnormal together in that one.

That's the amazing thing is I think and I think I'll turn my head to Jonathan but I think part of the reason we wrote that book and Richard Purcell helped us name it the Manifesto rather than a privacy engineering text was to get people like you on board. Someone with an MBA with a software engineering background, technical process, customer facing and I think that's really an exciting thing. So, we have absolutely from that first phone call built some really cool and exciting things. So, we'll kind of make a nod to that today as we go along here.

It's amazing how Jonathan and Lisa, your skill sets really do complement one another. Jonathan you come to data privacy more from a people and process standpoint and Lisa's technical background helps to translate these concepts. So, Jonathan tell us a little bit about your background and how you see this evolution and how we're building these privacy engineering concepts to make this real.

Jonathan Fox: So, my background is varied. I've been in book publishing. I've been in web development. I've been in licensing and I've been in marketing. I got started with privacy when at Sun.com I was editor-in-chief of the website and privacy rolled under me and Michelle was my privacy attorney supporting us and we were given privacy because we knew where all the web forms were. And in the late, well, I won't go into the date-

Michelle Dennedy: It's been a while.

Jonathan Fox: It's been a while. But then, privacy was largely considered a marketing issue.

Michelle Dennedy: And it wasn't a hot topic in legal at the time.

Jonathan Fox: Exactly.

Michelle Dennedy: We were refugees together.

Jonathan Fox: Exactly. And so, we ended up with it because we knew where all the web forms were and what data they were collecting and we had the purchase on the topic.

Lisa Bobbitt: So, you knew where the skeletons were?

Michelle Dennedy: We still do.

Jonathan Fox: We still do. It just went from there. As privacy evolved, we evolved. I also brought to my privacy practice, so to speak. I brought with things I had learned in previous careers. In publishing dependent on standards and guidelines and process for a full lifecycle from concept to a book being published and then some. Usability, how things appear. How people understand, what you bring to the user, how you communicate. That gave me a very practical foundation. So, rather than talking about very arcane concepts of privacy and notions of cultural value, kind of needed to break it down to some fundamental issues so engineers could understand it.

Michelle Dennedy: So, Lisa you're a technical person. You're an engineer. How do you break this down? How are you taking these concepts and these ideas and this framework and actually making it happen.

Lisa Bobbitt: I think when I'm coming more at it from the bottom up. You know, that I understand that as we've worked at our security spaces at Cisco more secure coming up, when you get to the top, it's the data and how people use that data that become most important to understand the value of it, how long you can keep it, who's touching it and looking at how privacy engineering actually allows me to have consistency across that and then building that back through into the security and trust portion. It actually adds to that trust piece and as more of us put more of our lives out there into the digital world, we've got to be able to trust it. So, I see how this pulls us forward by making sure we understand our data, understand where that data is, and what it's going to be used for. I see that with my technical background of being able to say, "Okay, let's be consistent in this. Let's make sure that we put in technology that allows us to know versus assume that people are taking care of things."

Michelle Dennedy: Yeah, I think that's really interesting and I think there're a lot of people who may think, oh well, private data, first of all is it a dirty little secret? Is it just your opinion on stuff? Is it just cordon off the personally identifiable information according to the Fair Information principles? Is it something as narrow as that or as you're pointing out and Jonathan is pointing out together, it really is about

pervasive security, pervasive privacy. Almost every activity that we're doing at work and really at play involves other people and other humans. So that connective tissue of that data that goes across systems that has a context and has a lifecycle. It's worthy of protection and it sounds like you guys are really putting your past together to point to a new future in this. I think that's a really important point, to look at IoT devices like surveillance cameras or LED lights. They may not have inherent security, but being connected to the network can these infrastructure companies actually perform pervasive security and what if they don't?

Jonathan Fox: I think they can and I think that we're dedicated to the mission as a company at Cisco. I think if we don't then we're in for a world of hurt. We're highly dependent upon seamless handshakes of data across the network or the internet to deliver services we want and are quickly becoming common place. If we don't have security in that process, then we really have no control over our data. If we have not control of our data, then our data goes into neighborhoods that might not be safe, most likely will not be safe.

Michelle Dennedy: I like this image in my mind of a handshake. We have, most of us anyway, four fingers and a thumb and we have conventions on which hand you stick out and hold together and we've all had that horrible fishy, kind of clammy handshake that feels awful. That to me feels like a slippery, entrusted network. So, I think it's interesting about how do you get privacy engineering, how do you get pervasive security built in? The why seems like you want those firm connections that are understood, that aren't creepy that kind of pervade that context.

So, how do we get into the how? How do we go about embedding data privacy into existing processes and stepping back and talking a little bit more about the why? I think we've touched on it. If there's people listening who are not familiar with privacy engineering or are just starting to think about privacy as something more than a legal requirement, why all the fuss about privacy? Why is it so important to get this right?

Lisa Bobbitt: I think it's really important to get it right just so people will actually continue to move forward and be able to be part of the new generation of how we work, live, and play kind of concepts. However, the way we do that is to really stop and think about the data that we need at the very beginning. As we were talking about embedding it at the beginning, but it's more than just embedding the technology, it's really understanding what data do we need, how long do we need it, and did we ask could we use it. Are we really thinking about who has control over our personal data and then how as it gets collected with other people's personal data, how should it be handled and when can I opt out?

Michelle Dennedy: Are we being data rude? Are we being data snubbing?

Lisa Bobbitt: Yeah, and what do I lose because again, my data's valuable and I want to be able to have control over it, get all the benefits of it and do you risk it? So, if I do it at the beginning, if I help the companies like ourselves really learn to scope that

data and understand what they're using it for. Don't take more than you need. Keep it for as short a period as possible, so you don't have to pay for it when you're not going to use it. Don't be a hoarder. I should tell my whole family that. Don't be a hoarder and work through that process of making sure that we've done all the things at the beginning that we're thinking through these things and of course still meeting a lot of the regulations about where can this run and where can it be moved to and who can touch it in the sense of sharing. But then I've got that information.

Now I know what my data is. I can wrap those controls around it, the right level given its value, its length of time I'm going to keep it, all of the things. I can actually balance the risk against the value and put in that technology for those controls, but then I can keep up and keep changing as I make changes to my product, to my solution, to my process up to the point that I no longer need the data and then I know how to delete it. That whole engineering lifecycle of data lays right on top of any type of development agile environment, any type of DevOps environment, and we can just put those requirements in because those requirements came from our principles, was built from our policies and then our principles as well as the regulations, but mainly what our customers want.

Michelle Dennedy: Yeah, I like that. I mean, we often refer to that amongst us three chickens as our values to value campaign. So, I think that also highlights too. So, you've talked about consumer needs, compliance needs, business needs, individual user needs, what about the moral and ethical side of privacy. Is there a higher purpose to this field of data privacy and is it ... If it's about creating value, is it also about doing the right thing?

Jonathan Fox: Very much so. This is as much about the privacy of the current day as much as it is about your privacy of the future. We're all sentient creatures and we are influenced by external factors and the more information that is out there about us, the more it can be used for us or quite frankly, not to sound alarmist, against us. There are many commercial enterprises that are dedicated to separating you from your money. There is increased science about how to do that and when to do that. So, some of this is just ensuring that there is a level playing field going forward. If you think about it in the education space. There's a big difference between a school advising a parent that their child might be more appropriate for this program or that program or this track or that track and there's a big difference from the school deciding that and automatically making that decision and putting forward that's denying people opportunity. So, I don't like to sound too, what I'll call cosmic, but-

Michelle Dennedy: We like it when you get cosmic, Jonathan.

Lisa Bobbitt: Well, and I think the other piece of that too is that just like people are trying to take the value and the sense of real dollars and trying to get you to purchase stuff through advertising, that whole concept of influencing your opinion, because now they know so much about you, they can know what your triggers are, so that they can actually get you more inclusive into what they want you to

do without you really even knowing that. There are so many opportunities for a free-thinking society to be merged to the wrong direction just because you know too much about them.

Michelle Dennedy: That's some pretty heavy stuff. I mean, how do we join this together? How do we bring it back to today? How do we get started? How do we make this privacy policy real and actionable in our products and services? Jonathan, do you want to kick us off and then the two of you tell us? How do you get this done in five minutes or less?

Jonathan Fox: So, every one of us is a privacy engineer today. Some of us are better at it. Some of us are worse. We all make decisions about how our information is used and we make decisions on how information is used in our processes we create or manage. However, we don't stop to think about it in that context. So, that when we're thinking about requirements, we think more what is the pure function we're trying to perform as opposed to these issues of is this the amount of data I need. What's going to happen to that data? Is there transparency? So, what we really need to do is align and think of those requirements as we [inaudible 00:17:15] our other requirements. That's why we call it privacy engineering. One day, we'll just call it engineering.

Michelle Dennedy: Yeah, I mean, engineering at its purest form if you look at the professional engineering standards. It really isn't about technology first, it's about the means of picking up the tools available and the materials available at the time to solve a contextual problem.

Jonathan Fox: It's about forethought.

Michelle Dennedy: Exactly. And action.

Jonathan Fox: And action.

Lisa Bobbitt: That's getting there, first of all, awareness. To be very aware of what privacy means and how it really affects us and how it affects us when you get collectively into our personal data. The second is to make sure that we are meeting those requirements that we were talking about and then the third is to actually make sure we actually built those things in because if we don't build them in, we have to constantly check, check, check versus it just being part of our everyday.

Michelle Dennedy: So, I smell innovation here. I smell innovation. I think what you're talking about is building in standards and patterns and known subroutines if you will, in the development lifecycle to actually meet the business and personal objectives of our users.

Lisa Bobbitt: Right, along with what Jonathan was very focused on at the beginning as how does it really interface with me? So, it's got to be very natural to us.

Jonathan Fox: I will pause at this: that privacy is about sharing, not about keeping secrets.

Michelle Dennedy: Absolutely.

Jonathan Fox: If we think about it in terms of sharing to start with, then there's a more deliberate action on how you share... what you do with it. If you think about it as keeping secret, then it's more of a firewall; keep it back and you never kind of focus on what gets shared and used. You focus on how it gets kept captive.

Michelle Dennedy: I think that's such an important way of turning it on its head and I think innovators do that. So, instead of looking at this in the traditional way of privacy is about secrecy or hiding things away or keeping things covered. If you think about the opposite side of that is this is a treasured communication. This is a way of being. This is a way of proactively telling our stories to whom will give us value and credit and even validation. I think that's really terrific. So, I'm going to take an even, we're going to go back to Cosmic Fox here and just as a closing question ... and thank you guys today for that teaser. I think we'll come back and we'll talk about some more specific structures and things on another podcast, but I think it's a great introduction. So given all of the stuff we talked about today, or even as a total aside, I'm going to ask each of you what gives you hope? What really is driving you into the future deviations from the norm as a sigma rider?

Lisa Bobbitt: For me, it's that when we talk about this, people get it. And they want it. And that gives me hope because a lot of people would want to say, "Oh, it's already out. All my data is already out there." And I'm like, "No. Every piece of who you are going forward is as valuable as what's happened in the past."

Michelle Dennedy: I love that.

Jonathan Fox: I think we're at an inflection point for privacy. We have them every 30 or 40 years and I see the side of right rising up. The focus we've had internally. The focus we've had externally as Lisa said, the ah ha moment we see when we explain it as levels down from the word privacy, but how do you use data. How do you reap value from data? How do treat data with an ethical view point? I think people get it and that gives me hope and that makes me eager to come to work the next day.

Michelle Dennedy: I love it. Well, thank you guys both for joining this episode today. As kind of a closing wrap up if you want to hear more about some of the techniques and methodologies, if you want to read it and charm us and join our team, you can find the Privacy Engineer's Manifesto: Getting from Policy to Code to QA to Value at any of the major online booksellers as well as on [apress.com](https://apress.com). We are excited about privacy probably terrible business people and you can actually get a free digital copy of that book. Please share it widely and broadly and continue the movement of privacy engineering and the ideals of the Privacy Manifesto. We find it great fun as well as great value and thank you guys for being very, very early pioneers in this field.

Lisa Bobbitt: Thank you.

Jonathan Fox: Thank you.

Michelle Dennedy: Thanks for listening to Privacy Sigma Riders. Brought to you by the Cisco Security and Trust team. Special thanks to Kory Westerhold for our theme music. You can find all of our episodes on [trust.cisco.com](http://trust.cisco.com) or subscribe wherever you listen to podcasts. If you listen on itunes, please review and rate us there. To stay ahead of the curve between episodes, follow us on Facebook, LinkedIn, and Twitter. You can find me, Michelle Dennedy on Twitter @mdennedy. Until next time.