

**Eric:** Today we have Thorsten Dittmar on the podcast, he's the founder of Polypoly, a data cooperative in the EU. This podcast I'm really excited about because it brings together themes of privacy, data, governance, security, privacy regulation, encryption cooperatives, multi-party computation, data algorithms, and maybe web three O, but more as a backdoor to web three O and I'll get into that a little bit.

So I was on a mission to bring to this podcast a data cooperative, and I'm looking to bring more under different flavors. And I truly believe that this notion of a data cooperatives is the shape of things to come. Now there's no reason that the default model for personal data is that it is centrally stored in process data, privacy laws make this expensive, even for confidential data.

Why create the honeypot, moreover, a stale honeypot, because a single source of data comes with the decay of the value that data. And of course, then there's the trust factor. So that brings us to privacy enhancing technologies, which can either be a closed system or me more decentralized distributed models.

Like what is enabled by secure multi-party computation Polypoly hits it from a different angle, and we'll get into that into the podcast. It's a two hour podcast and I wanted it to take as much time as we needed to go through it because it, it hits on so many things that are critical to the current that economy for the years to come.

So I talked a little bit about web three. We actually, I don't have it in the podcast episode because Thorsten doesn't care about how we categorize what Polypoly, what Polypoly is focused on in terms of web two or web three. He's a builder he's looking to solve a problem web three is more of a term from his perspective that may be used when you're looking to raise capital.

So rather than focus on new terms and adding new terms onto this new world, he draws analogies to how we currently use and share data in the real world. And that makes a lot of sense. We have a, more of a history in the real world versus the virtual one. Polypoly is not about web three O per se, but oddly, it seems to lay the groundwork for what a lot of people talk about when they talk about web three O since taking control of your personal data is setting parameters around what sites you interact with is a fundamental tenant of what most people define as web.

And maybe this is actually what's supposed to happen with web three O is that people don't run around saying I'm doing web three O, but people are addressing data ownership and, and, and the self-sovereignty of data in their wallets and assets in their wallets and their interactions with the web. And really why should builders be focused on the canonical order of web infrastructure?

Polypoly is focused on returning data control to the individual and enabling the individual to set the rules for their interaction. With those seeking to process such data. They are agnostic, whether that control is versus a web two or web three architecture. So I poke around later in the podcast asking Thorsten about whether they could collectivize the computational power, which he talks about on this podcast, or acting through a decentralized server and contribute data to that with the decisions on interactions made by a community.

This decentralized centralization could provide the co-op or perhaps a group within the co-op. I didn't say sub down with more market power and trusted stewards to manage how that data was used to benefit projects, which met the criteria for the group. It's just an exploration on my part, possibly also a direction that I think data cooperatives should go anyway.

I'm so excited for this podcast and to bring it to you really been leading up to this for a while if you'd the podcast share it. I guarantee you there's, there's a ton of people out there who would find this really interesting and just haven't really delved into the topics in the way that we have on this podcast.

So anyway, please share it. If you like us, please like it in, in the, in the podcast app and until next.

Welcome to The Encrypted Economy, a weekly podcasts featuring discussions exploring the business laws, regulation, security, and technologies relating to digital assets and data. I am Eric Hess, founder of Hess Legal Counsel. I've spent decades representing regulated exchanges, broker dealers, investment advisors, and all matter of FinTech companies for all things touching electronic trading with a focus on new and developing technologies.

So on today's episode of The Encrypted Economy, I'm so excited to have Thorson Ditmar on the podcast.

Thorsten is the co-coordinator of, of the co-op Polypoly, and this has been a topic that has really fascinated The Encrypted Economy. So Lawrence, welcome to The Encrypted Economy.

**Thorsten:** Thanks. And thanks for inviting me.

**Eric:** So maybe we start off, like we do all our podcasts. Give us a little bit about your background and what brought you to yeah.

**Thorsten:** Yeah. I started my tech career late in the seventies so long, long, long ago. So we were really involved in, in all these early stage tech things. And the first age I had project the world, and Wiki stuff. And. Technology, but just nowadays common. Then I sold

my first venture round about 15 years ago and went to Africa, working there as a social impact investor directly in Africa, not from the desk safe in Europe, though.

I was really into there when I started with computer science for every first touch I had was computer as well as about hacking. I was not really a good hacker, but it, you know, it was easy to be hacker in the late seventies and it wasn't illegal. And so I. These network you know, people thinking about, data privacy or security and what kind of role we should play for our and roundabout five soda, seven years ago, I got in touch with some people who were researching around that whole area of how, you know, the data of Facebook is used for political, sayings and so on.

So forth, there are bit. And when I got in touch with all these stuff, I got really, really nervous, of course, for me as a tech dude, it was clear to dedicate the extent what's going on with, in that data economy and social media and so on and so forth. When, when I start helping people to understand all these technical elements.

I got deeper into that topic and said, Hey, my, my dear what's happening there. That these data are now used to change the behavior of people and so on and so forth. And so I said, Hey, we have to fix that problem because it is a really serious problem. Yeah. That was basically when I stopped thinking about how can we fix that?

And my first intention was to find a company who was doing so already and just investing in it. But unfortunately we were not able to find one which was really trying to fix the problem and not just dealing with the symptoms. And that's, what's basically then the start of Polypoly.

**Eric:** So you're interested in privacy.

I know, your background, it seems like it was a building interest, but do you recall, like maybe a single event that just was so meaningful that that shaped you like, or you can just recollect when this happened. I suddenly had this realization, was there that epiphany that moment that just brought it that really shaped your values or worldview,

**Thorsten:** My, my personal background, I'm coming from a worker, family, I was born in Germany with all these history of that country.

And when I start thinking about all. Later Connie, me, and privacy stuff. I had a Trek with a guy who said, yeah, it is really difficult to understand what data can be used. And he came up with an example from our history in Germany. And that was basically that the, all the churches had a register.

How do you say registries for the kids that were burned one and people died and, we have Protestants and Catholics here basically? And during that time, these examples coming

from me, everybody was in one of these two churches. And so when the Nazis came in charge in Germany, they took these two registries.

And I would say on an anomaly would say, it should not be a problem to know who was born, born, where and when and so forth. But by combining these two registered. They had an idea who was not part of these two churches. So by being, not in that registry, they were able to say, Hey, you are, maybe that was an eye-opener, you know what I'm saying?

Hey, okay. From time to time, it is not about the data or the data that which is known about you. Also, the data that is. No one about you can be a huge problem for you sooner or later, and you know what, what would happen in future. So maybe today to be gay is not a problem anymore. Hopefully that will be the case forever, it's a regime will change in your country and that data is public.

Then you can. Big trouble, and so that's that, when, when I have these cards with these, these guy was a researcher you know, for history staff and so on, so forth, he really taught me how all these, these data was misused long before we had computers. And, if you just think about that, how can all these data we are generating will be misused or can be misused in future?

Don't get me wrong. We need data. We need data for solving some of our issues and our society. And it's necessary for our businesses. It's most likely that we will need even more data than we have today. But if so, then we have to have a way that nobody came with use it. Yeah.

Really an eye-opener for me and say, okay, we really have to go into that one. We have to fix it because we will generate more and more data for sure. You know, with all the IOT devices and so on, so forth. And privacy is one of the core values of our, democracies and societies. I would say one of the core elements of humankind because, we, yes, we are living in groups, but still, what is in my head is just in my head, as long as I'm not speaking it out, it is in my head.

So yeah, that was really that event. No fix

**Eric:** it. That's a, that's a powerful story. When you think of the large data aggregators there's, there's like a twofold risk. Of course, there's one where the people who are aggregating the data suddenly decide to use it in a way that's not permissible and then there's obviously the big honeypot effect where if you aggregate it all in one place, then Google or Facebook may be completely benevolent.

But quantum technologies find a way to access the whole database, and suddenly everybody's saying, wow, how did this happen? How did all this data get assimilated into one large entity? And now there's a full exploration of how to use it to our detriment. So that is a powerful story. So thanks for sharing that.

And, and so maybe before we even begin, I'm going to ask you, I'm just going to take a big step back. Cause I, I did, there's a lot for a lot for us to talk about here and I'm, I'm really excited about it, but let's just take a big step back and I'm going to ask you Americans and European. Very like our regulatory structures is one thing.

Clearly they are different, the U S tends to protect sectors like financial health, anything within those sectors. That's, what's protected. Now you have the California also focusing maybe more on, on consumer uses. And in Europe, it's a very different approach. It's saying we're predicting your residence wherever it's used, wherever it's in the world under GDPR, but even from an attitudinal perspective, what is the difference between Americans and Europeans on data privacy?

What are your thoughts on that? You don't have to be nice,

**Thorsten:** but I was born in an area of what you would call the rusty boats. So we had direct. So from time to time, I'm maybe not so nice, but yeah. Let me try to be as precise as possible. So first of all, privacy, or in general, not only data privacy or.

That is embedded deep into our culture, and it is how we are defining privacy or is also something that arrives out of our culture. So even in Europe, people and the solids of Europe would define privacy or differently than for example, the knowledge part of Europe also how you know, how open people are to share data with their government is highly different.

For example, here in Germany, of course, we have these used to be just talked about, and that is saying, or the result of that, one of the reasons that we are not so open to share our private data with our government. So in the Northern part of Europe, totally different, they have a very, very strong relationship to their countries and they are willing to share much more data in the states.

I guess it's also, the people in Texas would maybe be ha behave different than in Portland or in New York, or what's that. But in general what you can, when I'm comparing these two systems in the U S Europe, you are much more on that, that let me say, try out things and if it fails, try to fix it.

And we are more on that. Let us think about that first. And then we make a step, both have pros and cons. And so there is no right or wrong here on that point. But in general, I would say private sphere is first at all, a very, very subjective thing. So you know what you would call private for you. It may be different than what one of your friends would call it private.

You know, whatever. Oh, law system is seeing secondary primary is what I'm saying personally for my dater. My roots know very simple. Of course we need laws to empower that. Yeah, no doubt about that, but just because something is covered by GDPR, or maybe not covered by GDPR, I can still declare something as private.

What is not covered by GDPR. So if you have a system which is belly balancing the interests between the citizens, the government, and the economy, then, you know, you're not running into a problem. So if all of them are on island, No problem at all, then you can do whatever you want to, but as soon as the system is getting out of balance, and from my point of view, we are here in a system which was totally out of balance.

I would say, even at Amazon or Facebook or Instagram, all these, there's nobody in that company, in these companies who really knows what is going on with this data. All these systems are so company. And they're changing their systems every day. Yeah. So you you've just said maybe Facebook or Google, I would say, oh, nobody's unhackable because all of them are constantly, it is like, as you said, a honeypot building, like a building, like Fort Knox was one big difference.

There are lots of drifters running around these Fort Knox's and rebuilding that building all the time. You know, because. It's a data economy and digital economy is about know changing business models, experimenting here and there, blah, blah, blah, blah. So now you have a honeypot maybe behind a huge security ball with lots of small doors here and there because the Hendrick creditors have to go there to do their job.

But coming back to your question, I would say that that depends really on it. It's not that there's a big difference between the U S and Europe here. They are diff there are some differentiators here, but in general, I guess we have a very similar way of what is private and not what the, the only difference here is, what is our approach when we are trying to take something new and.

Yeah. And so that's from my point of view the main difference. And if you look at what is going on in California, it's basically a, quite a good adaption of what we have with lots of other countries are doing the same thing. She's answering

**Eric:** the question. And you you've used the term private sphere.

Is that the term that you've used it just for the listeners? Just, I want to circle back to it because it is a part of, of what Polypoly does. Could you define the private sphere for, for the, for the listeners?

**Thorsten:** Yeah, so private sphere means for us. So when, when you're going to GDPR, there's a list of kind of beta, which is covered by GDPR and that's quite a big scope.

Nevertheless, there can be also. Elements or data, which belongs to me in a way that is more on the metal level or at, for example, where you cannot really co-create examples. So I have a relationship, for example, let me say there's a digital relationship between me and my mom. So when we would have both of us and we don't have but nevertheless, if you would have a Facebook account, my mom and me, and we would exchange message.

On Facebook, we are called friends. So if I would download my data from Facebook, that's a typical for Facebook, same thing with other companies. There is then an aspect where you cannot say clearly, is this data entry really belonging to me, or is it belonging to my mom? And then what typically happens is even if my, my mom and me would download our data and the middle something would be missing.

So there is something in that kind of a relationship, which is owned by Facebook. They would not hand it over to me or to my mom. So in the real world, I would say, Hey, no, that's part of the relationship between me and that person is not owned by herself. Potty. It is owned by us, but not by somebody. And it would be part of my private sphere.

So that's let me say, in addition to what is covered by GDPR what we would also declare. Private

**Eric:** sphere. Yes. And then I guess one other point on the, on the big aggregation, if there's one thing that the solar winds hack taught us is that even Microsoft is far from immune. And you know, with the solar winds act, there is so much that we, as the public don't know and probably is not in our interest to know, but the extent of the, of the damage has been significant.

And, and to think, and to think that Microsoft is any less secure than Facebook or Google or Amazon think again, you know,

**Thorsten:** Yeah, you should never forget. What we're talking about here is an art, which is quite young. If you're talking about civil engineering, we have thousands of years of experience with civil engineering.

Yeah, the first bank is whatever correctly. My, the, I was 500 years old or something like that. When it comes to computer science, it is just five decades, 60 kids, a little bit more. So it is more or less natural that, that we are making a lot of mistakes. I guess we are making more things wrong, being the right and technology.

We're just natural, a very, very new field. So we have to make sense. Yeah. And then we have to fix

**Eric:** it. Okay. And before we, we're going to start getting into Polly, Polly, and a second one question, another point of view, data, privacy, disclosures. Are they working? Are they headed in the right direction?

Is more disclosure.

**Thorsten:** So from my point of view, these way of working stress, dealing with the symptom, not with the problem, because there is currently no fix for the problem. It's good to have that systems and to, to deal with the symptoms. We know that from the financial

area, when you're coming up, its regulations, how, financial stuff should work, then there will be some other smart guys who will find the hole in that regulation.

And then you will build the next regulation. And so it's a kind of a cat and mouse game, is it called in English? They are working to a dedicated extent, but they are not really fixing the problem. They are just dealing with the symptoms. And that's not good enough because when, when you're dealing with the symptoms, you're, you're not really able to build an alternative, which makes syncs even better.

So from our point of view, we have to have data economy. Which is a booster for privacy fear and in parallel, a booster for business and in parallel, a booster for research and so on. So for us you know, more private sphere should mean better business, cheaper business, faster business. That should mean better projects, easier access for researchers.

And that's of course, something you cannot build with these kinds of

**Eric:** technologies. Great. So now at this point for the, for the listeners, where about 20 minutes or so in, can you tell them. What Polypoly is. Yeah,

**Thorsten:** of course. So it is, of course, first, first of all, it is, or an idea about how to build systems, for the data economy.

And secondly, is there some, the company, and the movement behind it and so forth. So before. Deep dive into our legal structures and all that stuff. I would like to talk about the fundamental idea of the technology first if it is okay for you. So nowadays we have that system where the data is leading me as a data subject and going somewhere else, it will be stored somewhere else, and it will be computed somewhere else.

So the data is going to the algorithm and that's basically causing all the problems because that is, as I said earlier, everything, what is in my head is in my head. Nobody can see it only if I'm speaking it out loud. So that's exactly what we are doing nowadays, when you're transferring data to other companies, we are speaking out loud.

What is an hour. And then it is not private anymore. So all idea is to turn that thing upside down so you can praise it, stop praying data starts showing rhythms. So instead of that, my data is going to a foreign country or company or WhatsApp. The algorithm is coming to me as a user, and it will be computed locally on my devices.

And just the answer, if an answer is needed, because for a lot of computations, there is no art, some heated, so that will turn everything upside down was the first at all. If the Edelman was computed on. It is clear, which you are stiction is in charge because it will be computed in my home country.

So the law of my countries in charge and not the law of any other country it's also clear when there is some, let me say monetary aspect involved where the Texas has to be paid because it is computed on my device. So the Texas has to be paid in my whole country and so on and so forth. So there are lots of legal impacts by turning that thing upside down, but also lots of financial or business aspects are involved.

All of us, we are spending a bunch of money for our own it devices, our smartphones, or laptops pats and whatever, PlayStations and science. So in Europe, you're spending around about \$500 billion every year on our personal devices and all that also includes, smart refrigerators, and even the.

Cars, our smallest supercomputer computers on wheels. Beside of that, these, all of them are consuming a lot of money. We are also using a lot of resources, rare metals and all that stuff to build all these things. But we are utilizing that computation power just by 5% in average. So 95% of the computing power of these.

I'd like there unused, just imagine, during night, all of your devices, idling, even your smartphone, which is normally one of the most used devices, the processor I link most of the time because the processor and all these stuff is built in a way that when a peak is coming you know, identifying your face to unlock their device, that, really needs power.

Then the processor is working hard for some milliseconds. Then it's falling asleep again, there is a study which calculated that when you take 1% of all smartphones in the world, computing power would be that these cluster would be able to all perform Google search for times. Yeah. So if, just mentioned, that, that means end of the day, the largest supercomputer we have in the world.

And we as citizens, not one of these big tech companies, we have much more computing power than all of them together. So all of these devices are paid already. So there is an infrastructure out there which is not utilized that off. We are building new number, crunching centers more and more and more, we can just take all that data, which is commonly stored about us somewhere.

Bring it back to our own devices, making an outsourcing deal with we as citizens, we can make an outsourcing deal with the business and also with the government saying, Hey, if you want to know something about me, if you want to use my data for some calculations, just ask me and pay me. So simple as you paid before Facebook, if you want to know what kind of digital advertisement is okay.

For me, no, ask me, me personally. I can make a much better decision than Facebook would ever be able to because that's also part of our solution. We are downloading the data to your personal devices from lots of different sources. So we have the Facebook

download or already out the Google bond is coming in a few weeks up to the end up to the end of the year.

We have to download features for all the big players. So Amazon, Netflix, I've been through her Instagram. So all of these data are going to. And we'll be cleaned up there as well. So also the data quantity, not only the pure amount of data, also the data quality is much higher than one of the big dudes will ever have quite often talking about these tech guys you know, data amount of footage, which, which is wrong.

They are data only guys. Yeah. So means they have some data. They have a lot of data, but say, for example, Netflix don't know anything about my media consumption at Amazon prime or at apple TV and they would never exchange it. So if I'm downloading all that stuff to my device, if you, if you would be the one who's building the best recommendation entering the war, just run it on our infrastructure and would be able to make a much better recommendation than all of the others can do.

Because these recommendation algorithm would be able to use all your media consumption. Even then, the tickets when you were in the cinema last week, That's basically the fundamental idea. Okay. Let us bring the data back to us and enable others to use that data on our devices. There are lots of steps in between because it's quite a radical change.

Here in Europe, we have we been more with evolution that was revolution, at least in the last decades. And so we have. To build a smooth transition for the economy to change from a centralized data storage to decentralized data storage with decentralized or computation. But that's, that's the core of the idea.

We did a lot of experiments and also research. It really makes stuff much cheaper also for the economy. And it would be a, we would be able to enable able services that you cannot build today at all now, or at least not without harming the privacy of somebody heavily. And so having an idea how we can fit.

From a technology point of view. Of course it's not good enough, because tech pod is normally easy, easiest thought to fix, but then you have to think about how that all these legal things are working. You know, how you're creating checks and balances, how you're doing your go-to lack of strategy.

And so that was then when we were stopped thinking about, what kind of legal body would be the right one for that approach. And I, to be honest, I've never followed a cooperative before in my life

**Eric:** before we get into the legal structure because I really want to pick up on, on what you were just talking about in terms of the available computing power.

And so-so so, as I understand that Polypoly today is structured to that. I have data on my personal devices. The algorithm comes to me for the processing of the data. I get paid or the cooperative gets paid. It's, you'll get into that. But there's a payment associated with that computational power, which I've had some experience with other models where it's like you need for your data.

The problem is, is that those who have the most valuable data get paid much more and they don't want to get paid. And the ones who have the least valuable data get paid less and they want to get paid. So there's just a mismatch, which is why I love the equalizing factor of it. But let me just push that notion one step further.

So let's say from a cooperative perspective, you have a multiple members. Wouldn't that combine computational power be utilized not only for an algorithm coming to a user's device for the processing of that user's data. Couldn't that collective also ha also allows its computational power to be used pure computational in we'll just say in an encrypted format, which now gets a little more complicated of course, but gets utilized in an encrypted format to perform other functions, to thus increase the incentive, to participate in the model and thus forwarding the privacy aspect of it at the same time.

**Thorsten:** Of course. So let me first say some words about what you said first. So when you're, when people get paid for data excess, let me see. Then a private sphere is getting a luxury. Good. Yeah. So if you don't know if you're rich enough, you haven't data privacy because you don't have to share your stuff, but what people in the poverty situation or, people who really have to take care of them.

For them data privacy, or is that something they have to think about if they can, if it maybe worthwhile for them to sell their private sphere and just translate it in the real world, just let us forget for a second. That we are talking about computers here, would you, except in the real world that, let me say the door locker or address in general, having a dress, not being naked in public is something that has to deal with, how much money you have.

I think we would never accept. So why should we accept into the digital world? So privacy did also digital privacy should not be a luxury, but it should be something that everybody is able to use or to establish for himself and to make private decisions about that one. So that was the first reason why we said, okay, we don't want to.

Use that kind of incentive model, as, as more, you will make yourself naked in the digital books as much more money will get. That's definitely not a good idea. We should also don't forget here. Data economy is a global system. So even if maybe most of the people in the us or in Europe would be able to say no to that.

You know, I'm not sharing data. I don't need that euros. There are other countries in the world where people are maybe poor than in our home countries and they have as well, the

right of, having a digital privacy year. So we said, okay, let us turn the thing upside down. Okay. As you said, there are different ways how to utilize these kinds of systems.

The first one is that is what we just talked about. Sharing data and get paid for it. The second one is saying, okay, we will make that one a little bit smaller. You know, not just sharing raw data, you maybe also, updating automatically, the data on the, on the company side and salts for us.

And you're getting a little bit more money for that kind of smart data of transaction. But the first, from our point of view, the first really good service here is what we call is satisfied section. So you're sending me an editor and these algorithm is using my data. Doing some calculations and I get paid for it.

Of course. The next one is I'm just renting out computing power even without my data. And that's also something not new. Maybe you remember CD at home, when you know the guys that Naser created that awesome screensaver, basically when I have it correct in mind, I'm not hundred percent sure it was because of a budget cut of Naser that they had not enough power or money to, to analyze all the signals from the radio telescopes.

And so they will see smart person who said, okay, I will do the screensaver. And then, your windows PCs idling, it can download data from oral telescopes and try to find it then sending the data back. So there is an initiative called the global grid where you have a lot of things like that.

There's for example, also something which is called folding at home, that was an approach to analyze the COVID. And yeah, so that's of course also part of the system, just renting out bare metal computing power without your data, but because we want to fix the data economy, the third one. So algorithm algorithms coming to my device, renting all this computing power in the context of my data is for us in the moment

**Eric:** on the use of, of computational power.

This is a trend that you typically now see with a, with the programmable money, right? Because with programming their money, like for example, there's a platform called render. It's an example. And render basically is a network of decentralized GPU utilization. So for game developers who have a high demand for GPU, they're leveraging across this network and they're getting tokenized.

So it's just, again, it's, it's I think it's fascinating to think of your model. Contemplating that, that power in, in the, in the computational component of the offering, versus just purely the data, because it does allow you a lot more flexibility, a lot more flexibility to your point, not to cause people to, to, to, to devalue their privacy and correctly, or to focus on the wrong things.

If I open my kimono more, I get paid more and that's not really the, the, the framework. So anyway, so we're on the same page, I guess

**Thorsten:** we agreed. And we should, and we should not forget. It's not always about money here. It's also that many, let me say, there's a university who wants to do some research and they don't have the money, but maybe I'm personally interested that kind of research.

You can use my computing power for free, or there, there are so many scenarios where you can use your computing power for sharing or for supporting an organization you'd like to, and it's not always about, getting paid for computing power. When it, for example comes to, to fixing problems like the climate crisis or, the COVID stuff and whatsoever, if you're working hand to hand also in the digital world, We can do a lot together and we don't need any big tech company for all the technologies needed to do so out there for the kids.

We just have to

**Eric:** do it.

Right. And, and it's funny, we had a Nathan Schneider on the podcast you know, first episode in 2022, and the whole podcast was about this notion of common good in the decentralized organization. And how does a community evolve beyond just simply the monetary?

How does it engage the community? How does it tie into its members, interests, and desires beyond just the monetary? And we talked a lot about this notion of common good and the evolution toward it. And that's you know, you're building it from the get-go obviously with that common good trying to find that right balance between how we monetize it so that people don't find it like, so that people want to do.

But also, how do we tap into their broader beliefs and tap into a common good? I could imagine like a specific project gets posted to the community and the community members vote on it collectively and say, Hey, we're all going to do this one collectively. And it's, it's, it's, it's exciting stuff.

So with all that said, now we get down to the Polypoly structure. We, we trying to talk about co-op something near and dear to the encrypted. But please let's talk about the structure.

**Thorsten:** Yeah. So pretty pony is commonly built out of three companies. One is a foundation. One is a classical enterprise Inc.

And one is a cooperative. All of them are totally different road in that system. And so let us start with the co-op. So the co-op is the legal body is called see that something typical are in Europe because it is one of the first companies in, in all these legal bodies, a lot of the first new bodies, which is cross country.

So that means even if you're opening them the, see in Germany, You can make business or basically they have subsidiaries in all of the European countries. But let us talk about that for a while. The ballpark here is really that it is a crop. That means it is owned by the citizens. And I'm not saying by purpose, I'm not saying users so you can use the politics.

Without being a member and you can be a member without using the polyprop. But the important part here is that the underlying infrastructure. So what we are calling the Polypoly is not owned by the government. It's not owned by any other company it's owned by city, and you can only get a member in the politically co-op.

If you have a European passport that has a legal reason, very simple. We want to make it as hot and as difficult as possible for companies from other countries to legally harm that cooperative. So you, as an American, you cannot get member of the foundation has coming into the game because, the foundation as mainly the purpose to build co-ops in.

We are calling you talking to people in Canada and India, also to few people in the U S there, which is, which can be then owned by the citizens. There that's of course not an easy structure, but we are doing so by good reasons. As we said earlier, the definition of what is private or not is depending highly on our culture.

So Aus pony pot would maybe look slightly different or, I guess it would, because it should be adapted to your local culture. Then in the U S in Europe now, and an Indian one would look slightly different or behave slightly different depending on their culture. That's also an important part of the co-ops to build local communities.

So for example, that the support community is local. You know, Person from Denmark using the Polypoly is giving us a call on the support hotline. You should get somebody who speaking ten-ish and who was a Danish citizen who understands the Danish way of culture. So it is these game of think global act local.

So we will, we will, boots are a global system, but always based on local cooperators, which are owned by locals. That is, for example, also needed to make sure that when our Danish company is making a deal with a Danish citizen the DCIS causing Texas and Denmark and not in Berlin and also not in San Francisco.

So same on the U S level. If you're, if an American citizen is making a deal of this American company, Yeah, the money should stay in the American community. So that's how that whole game is working between the foundation and the co-ops. The co-ops are more or less independent. The foundation is acting like a franchise or a franchisee and giving their

how you say the name and the brand and all, and all these legal and governance frameworks to the, to the new founded cooperative.

But then all the, the corporates are more or less independent. They just have to make sure that the interface of the Polypoly is globally the same, but they can decide what they want to do locally. Also, for example, how they want to work with the government together. So for example, in Europe, it's much, much more difficult for police to get private data or from a citizen than in the U S you know, Your system, I'm not judging about it.

But then it is, it's important that the American cooperative is dealing with these aspects. Now we cannot do that globally. Everything should be local there. And then there's the enterprise and the portfolio enterprises, basically building tools for the economy to make these shift from a centralized data storage to a decentralized data storage and decent computation as smooth as possible as possible.

And the enterprise is also owned by the economy. So it's basically some large European companies who have invested in that company and we as, as the founders, but so we have then also to peer representatives here, the enterprises representing the businesses and the co-ops are representing the citizens.

So if they are coming in conflict, We will see that clear. And we can see clearly where the problem is, if you put everything in one the company, then, you can try to cover problems, but covering problems doesn't fix the problem. And it was by purpose made in that way that, both sides have their own representatives and that they have to work together.

All the checks and balances are made in a system that they in a way that they can only be successful

**Eric:** together and do the, and is there a sort of a community component of engagement, like a local community, as well as a global, like in other words, are there common platforms for engaging globally as well as.

**Thorsten:** Yeah, there, there are lots of, there's a very, very huge network. And that was also something completely new for me, network of cooperative in the world. So they are working heavily together and, you cannot overestimate how strong these copywriters are. They, they are really, really big in, in, we haven't in Europe really huge banks, which are cooperative.

I know that you have in the U S also quite a long tradition, especially coming from the farming area cooperative. So you can distinguish basically two kinds of cooperative. I guess the right term in English is the consumer cooperative and workers cooperative. We have something similar in Europe, but these digital cooperators are.

And make sure, like you say, of course, all our employees are normally also members, but here it is, consumer is also not the right word because they are our users who are the owners of that company. So they are not consuming something. What we are producing, we are offering an interest structure. They are using to produce some.

So maybe what is coming up with all these digital co-operatives, which are currently popping up here. And there is a new way how to think about co-operatives. But end of the day, the, the underlying idea here is. Infrastructure should be not owned by a bank. They should be owned by the citizens. You know, if you just look out of your window, there are streets other streets owned by Chrysler though.

Are they owned by four? No. In these cases they are owned by the government, which end of the end of the day means by you. So because privacy or data and government is not a story. So we said, no, we should not rely on an infrastructure, which is owned by the government. So it should be owned directly by the citizens.

That's the reason why we said, okay, let's build that as a corporate,

**Eric:** but even in, even in the U S there, there are worker cooperatives, there are user-focused cooperatives, like California is. Active jurisdiction for worker cooperatives. Consumer cooperative is one of the most famous one is R E I, which is an outfitter.

And basically you're a member of it and you can benefit from discounts, et cetera. And then when you shift over to the supply chain or producer cooperatives, which I think this actually aligns with is like pollution spray for an example, like all the different farmers they get, through ocean spray, they're able to collectivize and more effectively market ocean spray, but it is a cooperative behind that.

And similarly here, this in many ways is a blend of user and consumer. Per producer and user cooperatives and that they can use it, but they're also producing the different elements and through the cooperative, they're getting more, pricing power or, or power or the ability to influence or integrate through that cooperative.

**Thorsten:** Totally agreed. Totally agree. So of course we, as we said earlier, when it comes to private data stuff must be very subjective. So it is not that the co-op. Influenced heavily. Oh, you know how the data behavior or data subjects will be. Now you can do every decision on your own. Of course, the co-op is offering mechanisms to make that easier for you.

So to automate, trust decisions and all these things about if you want to you, you can ignore every single other besides the code, of course you have to use the code, but all the preference has all their systems. You can call them completely into every single year. But yeah, being a member in that co-op means you can, you can make decisions.

And one important aspect. And I guess it's the same in the U S than in Europe is he's one head, one vote. So it doesn't matter how many shares. Of course, yeah. As Morpheus you have as larger incentive, but when it comes to decision-making, we are all equal. And because you raised it a little bit earlier, how the economic model is then, with the co-op.

So 98% of the money that is generated in the transactions between corporates and users is going directly to the user, even if he's not a member. Yeah. So the largest extent is going directly to the data subject. So 2%. I guess a transaction fee. Half of it is going to the enterprise and half of it is going to the co-op and the co-op is them consuming the money needed to support the organization further development.

And the rest of the money is then going to the members. So end of the day, you can say most of the money is going directly to the user and be signed. What is not needed for supporting that infrastructure and to develop it further, it's also going to the users, but then only to the ones which are members, because we want to reward that people were willing to give some money to that kind of project, which is a risk know, we are a startup maybe, but nevertheless, we are a startup.

So you're risking something if you're investing your money. And so there must be a reward for that, but that's basically then paid out of that.

**Eric:** Well, I, I, I completely agree with, even if you're trying to achieve the common good, it has to be sustainable, not sustainable, then you don't achieve the common.

Good. And so you, you talked a bit about the local community aspect of it. What about the underlying code for the project? Where is that managed? Is there an open component to it or is it closed source?

**Thorsten:** Nope. It's fully a hundred percent, not only 99. Now it's a hundred percent open source. It's commonly at good.

I guess we would stay with good for a while, at least. So everything, what we are doing is published there. We have our network out of universities and people who are working with us together. So the, the project company is every single you can see and get something we made publicly available already.

So all the stuff we are working on, which will come in the next six or 12 months, it will be again, fully opensource, but we will open-source it as soon as we are happy with the quality of it. So that will change. Because in the moment, because we are really, at the beginning of that old thing, we are not only building the underlying infrastructure.

We are also building a use cases like for example, the order of importance for Facebook and Google and whatever. So in an ideal world, companies like Facebook or Google would build that kind of face features on their own to hand over the data, back to their

customers. We have companies who are willing to do so we're calling it, talking to them, training them, how to build these kinds of things.

But as I said, in a moment it's really us who are building the infrastructure and the cases on top of it. But in the near future, we will just take care of the underlying infrastructure and the community can then build a future. So it can be integrated in other apps. It can be by STKs you can use that kind of technology really as a tech stack to build compute apps at this running colony, only on mobiles, but we have versions which are running on laptops, apple TV, but also on the raspberry PI or inside of a car sooner or later, we will publish all these things so that we have really solid infrastructure, which can be used by other.

**Eric:** And, and so now getting to the Polypoly, mobile, maybe just a breakdown of its features, clearly there's a computational aspect. There's an aspect of it that we were by, you received the algorithms, but I've also heard you talk a little bit about the configurability of the user's interaction with the algorithm or selection of which algorithms are permitted or which entities, or how it stayed as being shared pursuant to those algorithms.

Do you want to maybe talk a little bit about?

**Thorsten:** Oh, if an algorithm is coming to my device, know, I must be able to make a good decision. Do I really want to let that piece there? You know, if you're going back to the real world, that would mean I will let something into my head and that's frightening, or that something is going into my private sphere and using something there.

We have to enable people to make decisions on that one. I guess it's one of the biggest problems in the moment in the data economy or in the whole digital economy that people are not empowered. And when we are talking about empowering, we don't mean that somebody has to do now half size of a computer to study a computer science degree before he is able to use or a check line to WhatsApp.

So the problem is not that people are too stupid. The problem is that our systems are crap. They are too far away from how reality works. And for example, if you just think about how trust is working reality and I'll trust in reality, Highly subjective, very, very dynamic. And it is more than, it's not a zero one thing, I guess there's not a single person in the world.

You would trust a hundred percent and there's not a single person in the world. You would trust 0%. It is something in between. But if you look in the digital world, we are coming to using that SSL certificate here for encrypting or Yeah. So the certificate was created by somebody I've never heard about, and I'm a hundred percent sure that 99, 9, 9, 9% of the people that have never heard about that company as well.

And it is definitely not context sensitive. It is definitely so trust in the digital world works exactly the opposite way, how it works in the real world. So how should people able to make good decisions when the systems are using the same terms, but acting completely

differently? Whether a researcher really at the beginning of 40 poli, he was researching on social aspects and he said, friendship is a little bit like cold war.

So

if you have a really good friend, you're handing over. Details about you and these personal, what Ms. You said information, you can bring it down to your knees. So in exchange, these, these good friends would hand over the same kind of details to you so that your eye level again.

Both have enough nuclear weapons to you know, to destroy both sides. And that's the way how friendship is working in some way. We are always on the same level. So how many intimate details do you know about he knows a lot about you, but what do we know about him? Don't get me wrong.

I'm not really interested in the details, but as you can see here, we have the system which is working exactly the opposite way that it works in reality, he had this totally unbalanced system and in the real world, That means, for example, we have created something which is called trust patterns.

So companies or organizations or individuals can publish who they are trusting. So an NGO, for example, who is really deep into data, private sphere, and computation sings, and whatsoever, they can check out ed rhythms and they can say, Hey, that's a good one. We trust that company. I'm a trusting that I agree with other, other NGOs or maybe good friends who know something about a dedicated aspect can do the same thing, or they can also say we don't trust them.

So you, as an individual, you can decide which kind of transparent subscribing, for example, the co-op is offering a trust, then you can subscribe it, or you can say Nope. So if so then the decisions, if you are unaccepting an algorithm or not, it's based on three elements, the first element. Your preference, we are not all the same, but some people are more open to the world.

Others are more things. Okay, let me wait for a second. Yeah. Then we have the influence from the outside. These are these trust pedals, subscribing products, and then the very most important part is your transactional history. So if your friend was a good friend for two, three decades, and somebody is coming across and saying, Hey, he's a total idiot, blah, blah, blah, blah, blah.

Let's say, Hey, why are you saying, I know that guy for three years, three decades, he was always nice to me and whatsoever. You know, your personal experience with somebody also. It's the most important part, as long as your history of successful transaction with somebody privately or with a company, as strong as your relationship is more, you're

accepting more or less automatically, it depends a little bit on the sense of the sensibility level of your data, which was used for the calculation or for the transaction.

But that is in general, how that works. So the second part which has coming into the game here is the sensibility of data. And I'm talking about every single data entry. So a picture of you in front of your house is not as sensible than a picture of you fully drunk, half naked after party. When somebody wants to use these pictures, the sensibility level is much higher.

So that means, your poly report would say, Hey, that means you really have to have. The trust, all a strong trust level to that dedicated person. And then some ask for some data, nobody would ever get access to that. So that is making, making that whole stuff a little bit easier to, to understand what kind of data will be used, what kind of data will be sent back.

And for what reasons somebody is sending, there is also some other aspect, but maybe that's going too much into detail. If you want to, we can deep dive. We can make a deep dive here, but you

**Eric:** know, when we talk about the algorithms or we talk about the capability of even sharing that computational power, which I find, the notion of, of like the, the transactions can be highly individualized, meaning like I don't necessarily need to know that I'm part of a community that's agreeing to it.

I can just make my own decisions in other contexts. I may actually value the decisions of the group, meaning, there's a validation like somebody who I don't know is coming to me and saying, I'd like to use your day is like, who? Okay. I know Google, but I wouldn't be giving my data to Google, but I don't under understand Thorsten.

Common, good initiative as it's called. I want to know more about it. So I joined a community and that's where I like co-sign on it. And then I can submit. And then when you start thinking of it in sort of like when, when people are more active and maybe they're setting their frameworks for saying, I want to engage in this community you know, I know that torsions common, good initiative integrates with a bunch of companies.

And I know he always uses this way of vetting. Those company's use of the data. So in other words, to your point, exactly, to your point, like I have a one-on-one trust basis with you. I know that you're going to deploy the standard. You can almost agree for me. I have that much confidence in the terms of the companies, but, but maybe Monica, I just chose Monica out of thin air.

No offense to Monica, Monica. Sometimes I want to do it sometimes. I don't want to do it because, she likes, doing. Stuff in North Korea or crazy jurisdictions and, I don't want to be part of that one. So, and so then when I co-sign on yours, but now, now that sort of puts you in a position of saying, Hmm, I can like maybe one model is to think, okay, how do we

engage more dynamically with a multitude of different companies, but also deploy like for computational power as a community, but also ensure that we're deploying the requisite privacy enhancing technologies.

I'm thinking, I don't know, off the top of my head, multi-party computation would seem to be a particularly compelling use, although, I don't know about the computational load on a device basis, a local device. I just wonder what your thoughts are on that.

**Thorsten:** Yeah. So let us go again, that, that's one of our typical patterns.

When you think before we were making system decisions, we always going back to real think about y'all. How was that made before we had computers? Because we have a working society for. Quite a long time. Yeah. Of course we had to also some trouble with our society, but in general, we had quite a successful species.

The first thing we have to understand here is what we are calling facets. So we are commonly talking to each other, and we are showing one face to the LRA. But this is not me. It is just one aspect of me. And it is the aspect I want to show you so you can never be sure if I'm lying or not, but that's normal.

Whenever people are getting in touch first in real world, they're creating a kind of a facilitate saying, Hey, that's the face. I want to show you the face I'm showing to my mom. It's a different one. The face I'm trying to, my wife is a different one. And so it's the first. So that's something we are trained in.

So we, as humans, we are really good in, creating a social context. And for these social contexts, we are creating one personality we are willing to share. So first of all, that means you will never be able to subscribe my trust pedals. You will just be able to subscribe the transparency of the aspect I'm willing to show you.

So if I have aspects in my life, I'm not sharing this. Because they are very, very proud for me. And we are not good friends for decades or not family members. They are aspects you will never be able to see. And you would also not be able to subscribe these kinds of transplants. So that means, in case of moniker, if moniker is doing something and that's something you like, and that's something you're getting in touch with, and you don't know what monikers doing in Korea or whatsoever, that doesn't matter for you because you're just taking care of these aspect of moniker and these aspects, what she's doing is good.

It's good for you from, from your point of view, you can just subscribe. As I said, these influence from the outside is just one off these three aspects. Now even if, if Monica is running crazy right now, and these aspects you have subscribed, then these will influence you only a bit. First of all, you maybe have other people you know, you're talking with connected with, and you have subscribed that transparent as well.

So then all together, they are transparent, building these aspects of trust for that dedicated. Privately or personally, personally for you. So then of course, nevertheless, let, let, let's take the example. You're subscribed my trust and you trust me to really read a lot. And then for whatever reason, I'm running crazy, fully what would happen in the real world.

First of all, if you're sitting in a cafe, you're talking to somebody and lots of people are sitting around you, you're getting loud, you'll start shouting. Then the others would look at you, oh, what's going on there. And that normally means, you're reducing your noise level because you're feeling the eyes of the others.

You feel that there's something not okay in that context. So we call that Polypoly, get fibroid, get hot. It behaves differently than the day before. And so what that normally means is that the rest of the pots are getting a little bit nervous. They'll think, okay, what's going on? There could be that you get hacked and somebody is trying to misuse your port.

So if, if your normal behavior is changing, it's not that the connection will be capital or so now it is trusted. And what's coming from you. It's taken with her. Let me say, not really seriously for a while. And it's also that the, the pot is then interacting with you as a user saying, Hey, you have subscribed or something, from that dude.

And it looks like he's acting unexpectedly. Do you still want, there are several ways? Yeah. There are several ways. And that's what makes it crystal clear that it's not all implemented in a moment. They're still doing research on. And it's a very, very tricky thing, but yeah, as I said, we are a startup, we cannot, unfortunately cannot do ever seek advice.

You have so many things we would love to do tomorrow. But you know, step by step one way is to detect. And that has to do with taking prevention and sounds, the first part is start communicating from an unexpected area. So of course that can mean you are on vacation, you take your phone or to Hawaii or whatsoever, but then the communication is coming from a different point.

That's the first indicator for the other part of say, I think I'll see what's going on. If the pot is then still acting like normally, so then the second thing is the end develop complications. So normally a pot is in some way, don't get me wrong in some way. So it is in some way acting a little bit like you.

Yeah, but don't take that too serious, that statement, but there's a pattern of communication, which is typical interval of communication. So for example, in the last 10 years or five years, you have just communicated with me once a week, and now I'm getting pings from your pot every 10 seconds. That feels weird, that's, that's going back in reality.

You have somebody else I've heard about for a year, but then he's giving you a call every hour he would say, Hey, what's going on there? And so stuff like that they also other things we are currently talking to some security experts to help detect that kind of uncommon behavior, and patterns detect that kind of stuff.

Points of what kind of data somebody is sending or asking for? Normally we have depended on us, we have quite let me see in our normal life, we are quite rational, or irrational is maybe not the right word, but we are acting similar all the time. So we are asking for the same things, we are sharing the same things.

And by the way, it's also good to have these kinds of people around yourself because there's a lot of uncertainty outside in the world. So if a certain community, which is acting always the same, that feels good for us as humans. So if something is changing dramatically in in our normal life, we would recognize it.

And we are just trying to rebuild that in our pot now, because then you can make good guts. Now, most of the time we are making gut decisions if somebody really reading all these terms of conditions. No, of course not just scrolling through print. Okay. Yeah. So we have to build a system which you can use, say with the oldest part of your brain, instead of being always conscious and say, oh, is it right or wrong?

And yeah. So otherwise

**Eric:** nobody would use it. You raise a very interesting point, which is, I'm, I'm sort of thinking ahead because as you become better at identifying the patterns for your users engagement and you get more users, that data itself both presents an opportunity and potentially a problem.

The opportunity is that, to become the most effective. At what you're doing in, in terms of even just who's responding and what ways to what privacy disclosures there may be. Again, disarm gets to like if I'm a member of Polly, Polly, hide them. So my research, but I really don't want to do all of it.

And I want to trust people, or I want it, like I only want to know so much the rest I want to be lazy about because I don't have time. And so from a, you could call it machine learning over time, or basically some automated way of learning these patterns and implementing them into the system could be extremely powerful.

On the flip side, as you deploy these systems to collect this data, that data is. Becomes private data. And so

**Thorsten:** of course, and that, that's the reason why this is also fully decentralized. We don't get that data. We don't want to have it. We have a web server for all websites. That's all, all the,

**Eric:** but wouldn't it.

But I guess the question is, and I guess this is where privacy enhancing technologies come in or, or, because you do have an interest in collectivizing this data and analyzing this data, but you, that interest is in a very secure way. So too. So on some level you could deploy. Very agree.

You could deploy expansive machine learning algorithms over time, to the extent that makes it more effective for your users. And then, if you're using like secure multi-party computation where, you are consuming it, but it is fully encrypted and then that could feed the algorithm, but the data resides in the users platform, the metadata isn't, it's all encrypted then presumably you've, you've hit the there's no holy grail, but you hit an optimal, an optimal use case where you are consuming the data in a fully encrypted, protected privacy preserving manner.

In a way that enhances the privacy of all the constituent members.

**Thorsten:** Yeah. So let us distinguish here between two things. One is what I would call a personality AI. So that means an AI, which only needs my own data to get trained. Yeah. So not the data of any other person, only the data, which is stored to be more precise, only the data, which was stored in my pot.

That can also be other people's data. If they have, for example, shared pictures with me or whatsoever. So that is. Running on your own devices and only on your own devices and nothing, what will happen there will be shared with anybody if you don't want. So the donor has to be encrypted. Of course it is encrypted on the device because our computation area is encrypted and so and so forth.

But here you're not really running into that problem because you just need what is on my device. All right. So that is for example, a system that can help you a lot to make decisions easier and highly personalized. So Ben we're coming to the other permanent. What is when the data. A lot of people that's need.

So when you can only train a model and lots of people are working together to train that model. So for example, to relate the best or schedule for, your public transportation system in your hotel, then all the citizens, the visitors should work together, using their calendars and their daily habits to say, Hey, that would be the best plan for rural public trust.

So how would we, how we are doing so that's something, what we are calling federated AI, so that you're putting an untrained model in the infrastructure. And then especially during night when because in these dedicated case, it's not time critical. You can do that during night when all the devices are plugged in to your supply, they're downloading the

untrained model training at locally, and then not handing it over directly to the infrastructure.

You're handing it over to the next person. You, you are very familiar with the other. So for example, you will hand that over to your brother and your brother will train it, and these ones will hand it over to you know, your uncle and dah. So before these model is going back to the infrastructure, it was already handed over to a lot of people so that it is really, really difficult to recalculate individual data, all of that.

And it is not. Somebody you don't know, who's maybe trying to tweak that system though. It may be handed over to somebody you trust. And, we have a network theory saying, Hey, it's around seven corners. We know everybody. So that means by ending it with, from one to the other and a long that trusted network, you can minimize the potential threat.

You cannot completely eliminate it. And let us be honest. You also encryption cannot do whenever something, let me speak stuff out loud. It's out of Hormoz. We cannot put it back into our mouth. You know, as soon as I am sending out data or putting insights of my data into a foreign system, it's out of my control, we can just make sure.

And we can do a lot. Now we cannot make sure we can do our best, make it as secure as possible, but we would always want depends of course, under on the automization level of user, we should always want, you were saying, Hey, if you, if you're participating on that one, Z's is leaving your private sphere and the chance that these can be recalculated back to you will be like that.

Yeah. But because you maybe trust that person a lot, who's asking for that data would say, okay, I'm willing to do so there is a community we are working with together called open mind. It is a really beautiful project and lots of smart people in there. I really, really liked them a lot. And so we have commonly federal idea and federal the dinner is a little bit down the road for us roundabout say mid to end of the year.

First of all, we want to build all the downloads functionalities so that people can see what the, the net knows about them. And then we have built that stuff as well. Yeah. I feel like they are doing really awesome stuff. And they're helping us to build these federated AI system federated

**Eric:** going back to the onboarding of the companies.

I guess, do they do companies that engage with Polypoly user. How are they, are they, is it an automatic vetting? Is it basically a Polypoly is just something like you don't necessarily is it that you don't choose the community of the companies, but they just have to adhere to, to certain the preferences set by the user, or do they have to be almost pre-vetted in order for Polycarp users to share data?

**Thorsten:** with them?

Oh, no, everybody can join that. Really everybody, we have to be fully market neutral. That's from our point of view, an absolutely necessary prerequisite for an infrastructure. You know, Ford is as loud as general motors to use your streets. So nevertheless, even Misty dispenses about to use American street, but nevertheless, there are some regulations and these, in our case, that's of course not laws.

So as I said, everybody, really every kind of company, every kind of, every kind of human being can use the product. You will never keep somebody out, but we will have an opinion about. Some, let me say actions companies are doing so I don't know if we want to deep dive there, but we are running one other system, which is called, and poly PDR is what we would call the Bloomberg of the data.

So we have bought the company house data of south of companies that was necessary to define the jurisdiction. So if a pot user, for example, wants to delete some data, then we need to know in which jurisdiction that company is settled. So what are the period of time? They have to delete it and so on and so forth.

So for that reason, we bought all that company and then be set up that we are collecting their information about their data. You know, what kind of data they are collecting, what kind of apps they are running, what kind of website they're running to, whom they are sharing data and so forth. So when somebody is getting in touch with you and it is a company, you, you, as a user, your decision, if you want to work with them together, what we offering to you is first of all, saying, Hey, these company is settled in.

Germany Ireland, us whatsoever. They are collecting that kind of data and they are sharing that kind of data for that purposes. So you can, you will see precisely as precise as we can and understandable what will happen with your data. And of course, what we are also collecting, and we have some supporters in the community who are, for example, checking what the apps are really doing, not what the companies are saying, what they are doing, what they are really doing.

And if there's a difference, we also say that clearly say, Hey, that is what these check client is saying, what he's doing. And that is what the community found out, what it is doing totally up to you to make your own mind on that. And then by, by, by doing so you're getting a first idea. To whom you're talking.

So if we are also offering an interface for corporate, that they can support their own information and our system, but we have also offered the interface to journalists and NGOs and whatsoever that they can say. What these companies saying is a lie.

**Eric:** So w we had a little sound break, there, but I wanted to follow up on a, on a couple of points.

If a user has certain preferences for engaging with a company, I guess if the company can demonstrate that it can meet those preferences, then they just simply won't share data with that company. And then the, then the user community who checks up on. Let's say that, that the company says I do everything that you want me to, with your data.

We are the girl Scouts and boy Scouts have data privacy and your communities engaging with them. And then somebody does a research project and says, no, they're there. They're not the girl Scouts. They're selling it to hackers and, top hackers and all the countries. Is there an update at that point?

Like is in other words, I guess I'm asking is like, is there a real listing or something like that? Yes.

**Thorsten:** Yeah. It's a real time system. So they would be blacklisted. Yeah. Listed from your personal point of view, not in general. Other people would say, Hey, I give a shit for, they are selling my data to blah, blah, blah.

They can still work together. Know it's not up to us to say what's right. And all we will just make transfer. And what's. What does that mean to you? It's your decision know. Also there can be companies who need much more data than others. I don't know. That'd be commonly talking for example, to a company, which is a large koshering provider.

They would get access to very, very large amount of data because they want to pick you late as precise as possible. But when a car should be aware, so they would like to have access to your calendar and what's. So would I be willing to share my calendar with a company? Of course not, but I can understand that they would need that kind of information.

So what is the solution? Hey, very simple algorithm or in this case, let us build a federated AI system, which is training the model every time, every night. So that in the morning when we are standing up, the cars are at the right place. Or you're currently talking to a company who wants to, who is in the fashion industry, and they want to change the way of producing addresses for environmental protection reasons.

By the way, they said, Hey, we want to stop producing stuff, which is just hanging around in a shop and fits more or less. We would like to change it in a way that these addresses are produced when you were ordering them and personally measured. So that would mean they will. More or less a digital version of your body.

That means they, you have to stand in your home, making photos of yourself half naked. That's quite a high fashion label. Can you imagine what would happen if they would get hacked? And millions of managers would be published or half naked. So most of them are even don't want to see half naked, but they would let, would be a disaster for that.

So what is the solution? Very simple now sent me the algorithm to my new eyes and what you're getting back is not my photos. What you're getting back as a frame. Yeah. You just need a model of my body, which is good enough to build my piece individually, be spoken restless. No, you don't need my picture.

So it is in the interest of that company to really change, sending the end result. They don't want to have that picture by the way, same with this and company, they said, Hey. The CTO told me, he said, I cannot sleep well anymore. I said, because when, when somebody is going to let me say special meeting, he doesn't want to use his own car for they're using ours.

They are not using an Uber. They are not using a taxi. They're using crusher and curse. When these data would get hacked and be published, that would be our end. And so lots of companies are really willing to give all that data because it makes their life. And

**Eric:** cheaper. Yes. Yeah, no, I, I, it, and that's something that's very powerful about the platform that isn't to be understated, which is, data is toxic.

If you're a responsible company and personal and personal identifiable information is toxic it's I think sandbagging off says it's the new nuclear waste, it's. And so as a CTO, like you have all this data, you get hacked. If you can discover a way not to have this data, like you can.

And to your point why do you want the pictures of somebody half naked? The only reason why you want the picture of somebody half naked is to figure out from a modeling perspective, what to do with it. So something that gives you that model without all the burden of the data protection makes your life a hell of a lot easier.

Like the best way to protect yourself against hacks is not to have the information. Yeah, that, that the hackers would want, do you know, or, or inadvertent disclosure is not to have the information. So that's powerful. And I think, I think it answers my question also in that the fundamental objective is the data minimization to identify what data is coming back.

So in the case of selling data to the hackers, I mean, listen, I could, I could take this, this example to an extreme, meaning my profile is because it's the girl Scouts of America. I love them and I will show everything about myself to them, whereas if somebody else or some other entity and then, but then something changes where the hackers are actually buying it and somebody in the community discovers it.

I guess my question was, and you answered the more important question honestly, but then the, because I think it's an extreme, it's more of an extreme, why not? We're going down this road. So once it's discovered that these, that these people are bullied will stay with the fashion entry that it's actually being sold.

Instead of going to the girl Scouts, it's being sold to pornographic pornography actors, I don't even know there's such a thing, but we'll just go there. If that gets discovered how as a user who's opened myself up, who have no idea, I say, listen, just for these guys, I hate the idea of anybody else seeing me half naked, but because it's the girl Scouts, I trust them.

Totally. What changes in that is that even a logical use cases, it's sort of like, Eric, that's just, that doesn't even exist. You tell me, like, how does that get as a user? Something changes, not in the way that the company portrays itself to the Polypoly, but something changes to the credibility of that.

How does the Polypoly itself react to it?

**Thorsten:** Oh, of course. If nobody is recognizing this is nothing will happen. But there are smart people out there. There, there is a community journalist whatsoever. So you can all their organizations I don't know how the one is called. I don't remember the name.

There's an organization, I guess it's called customer report or something like that, which is constantly monitoring products and publishing reports about it. I don't remember the name of what the name of it was. Can you help me? Schumer reports, consumer reports. Yeah. It would be lovely. If they would publish their trust better.

So if they, they would join the pony system, like other NGO or, unions or politically political parties or newspapers or whatsoever churches, I don't know. And they publish their trust and it's up to you to decide, okay, I'm trusting these, I'm subscribing these trust pedal. And for example, if this is a New York times and the New York times is reporting, Hey, these company have you know, made something horrible that will have immediately an influence on your decision because it's a real time they're changing their trust better.

You have subscribed it. They're saying, okay, we decreased the trust in that company massively. Then. If it's really something massively and you have a strong connection to New York times, you will get informed proactively saying, Hey, something changed you, do you want to read that article about it?

And then we will just bring it to that camp, to the newspaper. You can read it and then you can make a decision, or you can say, Hey, if just one party is saying something is going on with. I don't care. But as soon as you know, let me see 5, 6, 7, or very, very important ones are all saying, Hey, something is wrong here.

Then your pod is getting aware about it and saying, okay, now I have to act, but this is exactly how it works in reality, because everything is subjective here. We don't have the. Typically, and when, when we are talking about hate speech and all that saying, it's not so much about echo chambers, we are, we are echo chambers for hundreds of years already.

Yeah. So it is about the algorithms which are, pushing up, things which are as loud as possible. And also let me say creating reach in an abnormal way. So that's not happening in our system, by the way, you can also change the algorithms of how these whole stuff is calculated. As I said, it is an open platform and people can just publish an algorithm and you can download it to your partner.

And then you're using that one. But the algorithm we are trying to use is as close to normal human behavior. And it will, it takes a while for us also to optimize it really in that way that doesn't make everything perfect. Don't get me wrong. We had problems in our society before, but at least it is then in the.

How would most be before so we can deal with it with some mechanisms we have learned over the last thousands of years, not completely unexpected.

**Eric:** So I, so I think you, I think you, you gave me the right answer. So having been in a similar position myself at one time, I know the danger of feature creep.

Somebody says, wouldn't it be great. Yeah. And wouldn't it be great if, and I'm sure in your position, particularly when it's a co-operative, wouldn't it be great if you could do every single thing perfectly? Yeah, it would, but it would take us forever and we wouldn't prioritize, and we wouldn't even get off the ground.

And so I think what you're saying, it's an important point too, which is if you're a Polypoly, You should, you still have the power to screw up your trust profile? You're, you know, you try to give the tools, but if you say, listen, girl Scouts of America, half naked is fine. You'll be, PI allows you to say, okay, whatever.

I'm, I'm, I'm not even saying that it's happening, but whatever, it might just be like, whatever I share, I share. And there's no controls because, but Polly, Polly, doesn't Polly. Polly's not going to like, if something, it doesn't have a newsfeed or something that automatically like, even if somebody in the group realizes it blacklists that you're still there could be a whole community that recognizes it.

But if you're one of these people who don't engage, who don't inform, you could keep, you could still be like, despite the fact that you have Polly, Polly, you could still be exposed. And so Polypoly gives you the tools. But it, it gives you the freedom, but that freedom could also be, you may not be educated enough.

That freedom should also be, it's not just a blind reliance oh, I'm on Polypoly. So I'm all good. I know I'm never going to be my information is never going to be exposed. I can give all my information to girl Scouts of America and there's nothing, nothing that'll happen wrong. You still have that obligation.

And I'm assuming that there's probably also, I'm guessing if you have an active community and people are like, Hey, I just realized that the girl Scouts of America are, are, are associating with, this is just such a ridiculous situation example, but they're associating with a partner we're not graphy hackers of, of, of North Korea even pick up on North Korea or some other jurisdiction, you know that then you could, that's like an information stream and you could say, oh, Hey, I'm part of a community that identified this and I'll change it.

But it doesn't. You still have to be responsible, and you can be responsible by setting those controls, maybe a little stricter, but if you choose to loosen it up, you're responsible for that too. So it's, it's freewill and that's what it should be. And building every single scenario into it is probably not going to leave, cause like, the other problem with feature creep is it's also like to your point, you were saying it before, it has to be easy, right? The interface, like you could build all this functionality, but if the users don't know how to use it or they screw it up, it has to be goofy.

And it's not going to be adopted. And then I guess another question I had, because you were, you were talking about the, the poly pedia poly pedia is an informational source. And so let's say that I want to pursue data deletion. Let's say that. And again, this also probably falls into the bucket of being all things to all people.

But if I, if I want to, if I want to do it, you know, contact a company, and have my data deleted, are there tools for that outside of poly PD, which advises, informs me of that policy?

**Thorsten:** Yeah. So there are, of course, lots of communities out there who are trying to deal with that problem. So most of them, and I'm not saying that this is wrong, I'm just saying that most of them are more on a research level.

And so that means most of these things. People who are in their topic already. Yeah. But for America and Joe, Joe does, or something like that, typical agenda things that doesn't really help, I guess it's a typical problem we had in that whole space over the last decades, things like PGP and so on.

So forth, we have awesome tools, technically perfect, but really difficult to use for people who are not in that tech space. Yeah. So what my mom be able to be able to install it. That's the kind of thing on there on her iPhone. I would say she would already fail or at least stumble a bit when she would try to read.

Thing is good for, so what we will build. You know, first of all, as I said, you know what we are commonly billing is that you can download all your data. That is an important step for you as a citizen, because then you will know what the net knows about you. And it is an important step for us as an ecosystem because this important data capital ecosystem, if

you're utilizing it or not is a different story, but it is important data capital to that ecosystem means to your own devices.

So then you can say, okay, now I want to clean up what their, the net knows about me, because I may be found something here and there each feature, by the way, normally. So for example, if you're downloading your Facebook Bader or your Google data or whatsoever, this is normally generating hints to other data sources, you're finding hints, oh, it looks like that.

Some of the data is also at Instagram. Okay. And from there, you're coming to, I dunno, whatever Hotmail and, and so you're collecting more and more data and then you find stuff. That picture should be on my device, but nowhere else, I want to banish that from the net. And because the polyquad will remember where this picture is all stored.

You can generate a message, message saying, okay, automatically to all these data consumers and saying, Hey, please delete that. Then it will connect the to find out where all these companies are settled. And then it will check after two, four weeks, whatever depends on your section, refinishing it reinitiating the data, data downloads and having a look it's a picture of.

If so, you can, depending on your local law, you can punish these companies. You can force them to. So what we will build for Europe, soonish is a fully really highly automatic legal pipeline. So that company doesn't behave well. And by the way, all of a sudden American company, the, if they don't behave well in Europe, that European co customer.

Fully automatically send that to lawyers. They will take care of it. And so on and so forth. So these is wrought to do. And unfortunately that's something you have to redo again and again, depending on the jurisdiction, you'll see there, the co-ops that coming into the game again. So as soon as we have an American co-op Visco, we'll take care of implementing the legal pipeline for the American market.

And because we can only have just a co-op in Europe, we will do that for Europe, but yes, you can, you can delete that stuff quite easy in the meaning of sending out notifications to these companies. But if they don't behave well to really force them. Right. You cannot execute is not the right. So it means you need an execution here and it must be easy rather than a cheap one for the consumer.

Otherwise nothing will change, but that will take a while, before we will have that in the U S because first we will need to up and do it.

**Eric:** And then I. Max Schrems is organization. What's it Noya is that they're very active. They're very active in that space.

**Thorsten:** Yeah. Yeah, yeah. They, they are doing really good stuff in Austria.

They are projects like, like the one of max we're digging deep into you know, the, the terms of Foundations and sounds of force companies. They are checking out stuff. And basically we are building these infrastructure also to support folks like that, because the funny thing that happened to one of their generating constantly data downloads from Facebook and others.

And from time to time, it happens that someday. Type I'm not seeing data, really data type it's appearing in one data download of the same company that was never there before. And it disappeared afterwards again. So basically they buy, buy excuse exposed that they have more data about somebody than ever before.

So what all the Polypoly are doing is they're spying back. They are checking what is coming. So they're spying back what the companies are sending to them. And as soon as a new data type is in there, they will inform the PD or, Hey, here's a new data, they're not sending your data. They're just saying, oh, it looks like that.

Netflix is also storing when I stopped the movie and, fast forward and whatsoever. Something like that. So then the pedia will know, and that means as well, the next 24 a few minutes later, we'll also ask for that data and say, Hey, we know that you have that data and it out, give it to me.

And so the, the, the, let me see the coverage of their data per company is getting better and better all the time.

**Eric:** Right. And by the way, the, the org, the organization was not noisy. It's noisy. They're doing things that no one else is doing in, in Europe. They're going after they're, they're, they're complaining in jurisdictions.

They're understand the legal system that the GDPR affords them to go after companies that are not complying. And they got quite a plate. But, as you said, it's like, what's the point of GDPR. If you, if there isn't any type of enforcement mechanism, if you don't comply and NOI business ensuring or endeavoring to ensure they got their work cut out for them.

That they're very active in that front. How do you view the, the, the changing burdens that the changing expenses for security at the more centralized level? What, like you said, you were talking to security providers. How do you think about security as, as this, this, the scales?

**Thorsten:** So I guess first of all, we have to understand that hacking is normally an economic process.

There are of course hackers or other, or they have other reasons, but most of the time it's they're doing so for earning money. And so that means one of the best things you can do

to get rid of hackers is to make it not worthwhile. You know, that the, the amount of data you can get by hacking somebody is so low that it doesn't make sense anymore.

You know, again, let's go back into reality. When I'm checking my front door, it has a simple key locker in comparison, especially to my bank, when I'm going to my bank to key lockers, definitely different. So by decentralizing data, Of course, the Polypoly is not unhackable, of course not, but does it really make sense to me?

Hey, you can help me, I'm not as so interesting person, like for most of the people that's true. Would we recommend to you to use the Polypoly when you're the president of the United States or the capital of Germany or, or a journalist in a horrible or a country? Please not the poly pub we are actually building is for normal people.

They are not built for, it's not built for people with this, a special security requirement later, we will publish this, the specification of the park and then entry, oh, who are specialized on that one or governments who wants to build a Polypoly for politicians they can do. It's not our job.

Our job is to say to, to make the life of the people out there easier and not saving the life of our journalists, don't get me wrong. I would love to do but I cannot fix all the problems. So scope creep, unfortunately. And so that, that means, by draining all these honeypots and bringing that stuff back to us, we will fix a lot of hacking issues.

As a site defect and not by technology. Hmm, by a systematic approach, more or less, it's, it's a little bit like, does it make sense to break into your bank if the money is not there? No. It only makes sense. It's all the money is stored there. But if all the data is stored in my pocket, yes, you can break into my pot and then you know, that I'm a fan of big bang theory or whatsoever if you want to, or you can maybe also see what my body index is.

If you're interested in that, Hey, I'm sorry for you, that you are interested in my body. And then I guess that's the good thing, when, when we are getting rid of all these kind of. Just the rest of the stuff will be stay there. And then our governments and our NGOs can take care of these really bad assets, which are, they're trying to harm our society.

Yeah. Because all these, these economic or business hacking of me that happens, people are breaking into systems to get maybe, I don't know private telephone number of Anglo-American. And they're not interesting in my world, they are just grabbing all that stuff. And because of some whips are in that data pool as well, they are trying to get.

Okay. And then that doesn't make sense anymore. Then if all that stuff is just, in our product parts problem solved partly, but then we can start taking care of the real big problems, and not have these vendor. Let me say. Yeah, but that's, that's, that's the way how we can help there at least the test to make it also crystal clear here we are not saying we should generate less data.

No, we should generate even more data because as more data we have, we're going to be saying we, that means me personally, as much better, we can optimize things. Now we can make better recommendations. We or to be precise, recommendation engines can work better on that infrastructure based on your data, making you locally a recommendation, you can produce better products based on relevant.

Yes. Yes. Clean data. There's a study out there, which is saying 85% of all the data, this companies of sport or so-called Brock's data. So redundant, obsolete, trivial, and outdated. When I got it. Yeah. Just imagine how many money these companies are burning by saving all the data. How many energy is coming to you to save all the data and how many poor data scientists are sitting in front of all this useless data and have to generate something meaningful out of that for the next.

Yeah, let us get rid of all that shit and let us focus on the stuff that's real. And by decentralizing things, stuff, getting a context and context makes things

**Eric:** clear. Great. That's a, that's a great note to end the podcast over time. I actually feel like we could have. We could probably go for hours on a bit of an I'm a bit of a nerd.

So I don't know, my, my hours may not appeal to everybody, but this was a great session. So I look forward to following up and keeping tabs on Polly, Polly, cause it's it hits a lot of my points, a lot of things that I I'm thinking about and on the encrypted economy and otherwise so Thorson, thank you.

It was wonderful to have you on the podcast and you know, we'll be, we'll be keeping tabs.

**Thorsten:** Thanks a lot. And thanks for your time. Hopefully, interesting for your audience we talked about and yeah, whenever I can help, just give me a ping. And as soon as we are opening their co-op in the U S you will get a notification for sure.

And by the way, that's, what's funny from, from a European perspective, it looks like the best cool. It's in Texas, not in California. And I guess because of the farmers, so we are in contact with a lawyer down there, and Hey, that's awesome what they have there in Texas.

So,

**Eric:** so it's interesting.

I'm actually doing a jurisdictional analysis across jurisdictions. Texas is one of the ones I have to return to. I spend a lot of time focusing on Colorado because it aligns well with the crypto space. I've also heard great things about Minnesota, Texas got on my calendar, on my, on my list. And I actually, this weekend was the weekend.

I'm looking at Texas. Another one that amazed me was Washington DC. Of all courses they have because, because what's interesting in DC is you don't even have to form an entity. It's basically an unincorporated cooperative association and that's. I know of unincorporated non-profits, I didn't know of, of unincorporated cooperative associations.

I think it's really probably an outgrowth of the lobbying and quasi lobbying groups in Washington, DC, but anyway, interesting stuff. And now you got me pick at Texas. I'm thinking Texas, like this weekend is Texas for me.

**Thorsten:** Yeah. There's, an awesome university in Spain, which is funded by one of the largest cooperative in Europe.

And I guess they are one of the largest in the world. So they have their own university, and we are commonly working with them together on building a, kind of a blue book, how to build co-ops in different parts of the world, because we will need that for the foundation. Anyway it's early stage. We are just at the beginning to do but it's so interesting to see.

And that if you have these kinds of culture in so many different countries and how it was evoked, and there was a kind of a cooperative slaughtering in the UK round about 20 years ago and why that happened and how they want to fix it. Now, it's, it's really fascinating. Also law can be really a fascinating aspect of our life. .