The Open Source Way
Episode 10 – ZEISS and SAP – An Open Source Talk

Transcript

Karsten Hohage: Welcome to the Open Source Way. This is SAP's podcast series in which we will talk about the difference that open source make. In each episode we will talk to a different expert and we will talk to them why they do it the open source way. I'm your host Karsten Hohage and in this episode I'm going to talk to Holger Streidl, who runs the open source activities at Carl Zeiss AG and Peter Giese, who leads SAP's Open Source Program Office. We will try to identify some similarities as well as differences in the approaches to open source in our two different companies. Holger is basically the Open Source Program Office at Carl Zeiss AG, the open source consultant at Carl Zeiss. He joined ZEISS in 2019 and his background is computer sciences. He used to work in the area of health IT as a researcher at the University Hospital of Heidelberg and the Helmholtz Center in Munich, and also in various roles in service and engineering at GE Healthcare. His first rendezvous with open source for all I know, was in 2010 when he founded the medfloss.org repository that indexed nearly 400,000 open source projects in the area of health care. Peter Giese, we've had him as a guest before, is Director of the SAP Open Source Program Office, focusing on refining the SAP's open source strategy, developing new tools and approaches for managing open source, and on further promoting Inner- as well as open source at SAP. Peter joined SAP in 1996 and worked as a researcher at Fraunhofer Institute before that, for experimental software engineering and as a development manager at Kiefer and Veittinger Consulting before. He holds M.Sc. also in computer sciences. Welcome, Holger, and welcome, Peter. Hello.

Holger Streidl: Thank you so much.

Peter Giese Hello. Thanks for having us.

Karsten Hohage: Ok, great that you're here. Let's get started with something that was communicated by the European Union, I think a couple of weeks back. They published

the numbers for gross product share of open source in Europe. Holger, that was quite a few billions. How many was that again?

Holger Streidl: This was really a very interesting or amazing number; there has been sixty-three billion Euros that European software developers contributed in form of source code to the overall gross domestic product of the European Union. I think it was in the year 2018 which they examined in detail.

Karsten Hohage: Ok, so that's numbers from a while back that have probably even risen by now, I assume. How does it come to these numbers? And why is a company like ZEISS, who we know for optics, for metering technologies, semiconductor and so on…how are they involved in contributing to that gross product?

Holger Streidl: ZEISS is mainly known for their glasses, their lenses and their telescopes, or if you are more interested into the tiny little things and if you are, for example, working in material sciences or medicine, you will probably know our microscopes and of course, everything that is related to ophthalmology. That's not the only part where ZEISS is active or that are really important for our company, because we also have a big business-to-business relationship. And this is mainly in the field of industrial quality solutions as well as in the field of semiconductor manufacturing technology. There we can combine all of our strengths or specialties or great techniques that we have, because with our mirrors, we can really support the five-nanometer lithography process, which is really the latest state of the art. So, the processors that we carry in our smartphones or the latest computer generations are made and based on this technology. And this is really pretty amazing or was really a surprise for me, that ZEISS is also active within that field. So, we have great hardware, but we're also very strong in software, as you probably will know, even if our product does not contain any software, it was strongly supported by software when it was produced. And so, this really gets very obvious if you look at the number of software engineers we have at ZEISS, we are counting at least 1,500 at the moment. And this is really continuously and fast growing. We are developing software in the modern and agile way. And of course, this also means with a big share of open source software as part of our products. And now, for example, we also recently partnered with Microsoft, who is meanwhile also a big contributor and friend of open source software. And so that's, I

would say, also our story from what we are doing and why we happen to be also active in the field of open source software.

Karsten Hohage: Ok, so like the very short summary could be from Precision Hardware, basically outside the field of computers, it took you to hardware on the IT side, on the computer side. And from there, of course, the natural course is that you are also involved in software. Would that be the short summary?

Holger Streidl: I would say so, yes, I mean, you cannot live any longer without software in nearly every device that you are touching or working with. If you take a closer look, I think our history with computing already started way earlier. So, it was in 1955 in the German Democratic Republic that Carl Zeiss Jena built already the first computer, it was called "OPREMA". It's the short form for "Optik Rechenmaschine". And of course, it was also used during that time for rapid optical calculations for our lenses or lens-based systems, and it was soon followed also by the "ZEISS Rechenautomat 1". That was the first in series produced computer long before, for example, Robotron started to do this within the eastern part of the world.

Karsten Hohage: So, these were the computers that were being used to make the lenses that I now adapt to my digital camera, right? Because I have this nerd hobby of screwing old ZEISS and Meyer-Görlitz and so on lenses to my new digital camera. And I guess then these computers were involved in making the calculations for lenses like that, right?

Holger Streidl: Exactly, because probably during that time, ZEISS didn't have that many mathematicians or the demand for the lenses has been so strong, so that already during that time, computers helped to get the best out of our product.

Karsten Hohage: Ok, cool, is there any more to say about this, like the ancient history of computer use or was that basically it, the RA 1 and the OPREMA before that? Right?

Holger Streidl: Exactly to all what I know, and I think then it was passed on to some other facilities due to the different economic system in the Democratic Republic, but these are mainly the roots

Karsten Hohage: Yeah, but of course, the times have changed and now the involvement in software and hardware is a quite different one from back then. That was back then only for the purpose of building even more precise optic devices. And now, as you've already described, it's a totally different game, right? So, this leads me to the following question. In these modern days that we have reached now, what are the questions that arise for an enterprise like ZEISS and what's your role in that? And I don't know, maybe start with the latter. What's your role?

Holger Streidl: Mm hmm. So, my role is mainly I would call myself something between a coach and a consultant. So, I'm providing trainings, but also really helping a lot on a case by case basis. And what's really important also is to grow our internal expert community so that it's not only me, but really the knowledge is spread throughout the company. And, of course, I also try to strongly promote or advocate for the use of open source because, yeah, it really helps a lot that we get the latest technology into our products. So what topics are in there? The most important point at the beginning is always license compliance to also reduce the IP risk and to focus also on application security. But as you grow and as we continue this journey, there are a lot of other topics. And to my understanding, I think SAP has already also explored a lot of all the other contexts, right, Peter?

Peter Giese: Yeah, definitely, I think our companies or in general companies differ in size and probably also differ in when they started consuming open source, for instance. But in the end, the overall open source journey is very similar in all companies. Normally it starts with consuming open source components. And then after some time, you also want to fix certain bugs in those components or add certain features and then you start contributing to open source. And at some point in time, maybe you start even releasing your own open source projects. And then of course, all of these inbound outbound open source tasks you can also have different levels of maturity, for instance, of automation, depending on the scale on which you have to do this. But in the end, it's always the same fundamental questions for all of us. And if it comes to consuming open source and the first thing every company normally looks into is license compliance. But from my point of view, equally important is also security. You have to ensure that they are no known vulnerabilities inside of open source components if you include in your own products. And that is something you have to take care for. Or, in our enterprise business, when SAP delivers software to customers, oftentimes we have to maintain

those for 10 or 20 or 30 years. So, maintenance of consumed open source components is also a topic. And for that, for instance, we are already starting at the time when we select an open source component to include in our products, that we have certain selection criteria's and also tools for supporting our developers in doing such a selection so that we are not running into trouble later on, hopefully.

Karsten Hohage: So, is that all the same stuff as you're worried about or taking care of at ZEISS as well? Holger?

Holger Streidl: Yeah, I would say it's similar, of course, we currently do not have yet a very strong focus to also engage in the community. I mean, this is currently still happening already and also since quite a while within each of our different segments. But it's on their own and it's not really an orchestrated approach, so to say. And so every team or engineering or product team does it, depending on how much they need it or how much sense it makes. But of course, we can still do better in providing more clarity, more assistance in doing this really the best way and also to take the best out of this. So how do you really successfully grow a community and so on? I guess that's the place as SAP is already very active. And I mean, just if I look on your blog, I see a lot of projects that you brought into life and are growing over a longer time.

Karsten Hohage: I guess we do have a little bit of a difference, of course, because SAP, in the end, is one hundred percent a software company and ZEISS is partly also involved in doing things with and about software. So there are probably some mechanisms that were better in place at SAP already, maybe, and maybe we've already had some employees, I know we've had employees who have long contributed to open source projects in their private time because they're just simply developers and have been for 20 years. And maybe that's a little bit of a difference to ZEISS, isn't it?

Holger Streidl: We also have a lot of how to say senior engineers that are working for a long time in this area. And so I heard of some colleagues who are also actively contributing to the Linux Kernel, and we are involved to some parts there, as it is used in the embedded devices.

Karsten Hohage: I was just saying from the overall organization, we're full bred basically we do software and you guys do software and many other things, right?

Holger Streidl: Exactly, we had a different focus, but I think it's slowly shifting because, yeah, meanwhile, you cannot really live without software. But of course, our main focus is on our optics and on the hardware. But there will always be or there will be an increasing share of software involved in this as well. And so…yeah.

Karsten Hohage: I think you're the first guest from outside SAP that we have in this podcast. I didn't point that really out in the beginning, so we could also have some great controversy here, but I think that you're not set out for that, as it seems.

Holger Streidl: Of course, we could discuss on certain aspects, but I guess it's mainly about collaboration. And I guess that was also one point how we got together, because we actually met at a conference which was mainly intended for companies. And that was intended to explain or clarify what's the best way of how to use open source in an enterprise, what are the pitfalls and so on. And this is also one thing I really like about that. It's more really about working together or collaborating and sharing information.

Karsten Hohage: You're anticipating my questions here. That that would have been my next one. How did you two meet anyway?

Peter Giese: Both of us, Holger and myself visited the Open Source Summit of the Linux foundation in Lyon last year, and that is where we met. No, it was not last year, it was like two years ago, right? So we met there and talked about Open Source Program Offices and what we do. And maybe because you were asking for differences, I think one difference is that, Holger right now is and I mean this with all respect, is a little bit like a one man show. So he has to build up the Open Source Program Office at ZEISS. And with everything that is coming with that, creating a policy, kind of working with the legal colleagues to create a legal framework, creating education for your developers, to educate them on how to consume open source in a safe and compliant manner. And we have the luxury that we are already running our open source journey since 1998 and that the Open Source Program Office has grown already a little bit. That's why I think for, for us certain things could already evolve over time. And we have a few more people in the office - that makes life a little bit easier. But the good news is that we have exactly these kinds of conferences and that we are living the Open Source Way also in the Open Source Program Offices. So, I think most of the offices are very open to

exchanging best practices and also exchanging tools for managing open source that we also can develop as open source. So, for instance, from SAP side, we have tools like CLA assistant to manage contributions to open source projects, which itself is again published as an open source project. Or we have a tool like Fosstars, which we use to do security ratings for open source components we want to consume in our software, and that we also share with the rest of the community and there are also a lot of associations or groups were OSPOs exchange experiences. We have people that are currently starting fresh within creating or setting up an OSPO can get help. For instance, the TODO Group of the Linux Foundation is a group where the OSPO's from a lot of different companies are regularly exchanging best practices and tools to successfully run open source programs. And we have the OpenChain project where the specification for our license compliance is developed. So the good thing is if you start an Open Source Program Office today, you do not have to start at zero, but you can turn to a lot of already existing publicly available information and open source projects and groups that are happy to help, so to say.

Karsten Hohage: Let's go back to ZEISS for a minute. How do you mostly engage with ZEISS employees to propagate open source and support them in using it, producing it, whatever?

Holger Streidl: Maybe, first of all, I would just like to add that, meanwhile, we are really already well on the way on our journey with working open source or making sure that we do everything correct. But basically most important there is to have a central policy that we accompany with a practical guidance and form of a wiki that really explains not only what is required to do, but also why you need to do this and what's the purpose, what's the background behind this. Because if you know this, then you can really make sure that you adhere to this. In addition, the way on how I also interact with my colleagues is that we really try to empower each other by knowledge. So not really just saying you need to do this or to do that, but really to spread the knowledge and make sure that the knowledge is really at the forefront where software is actually developed. We are continuously growing our internal community by using, of course, modern communication platforms and also delivering a lot of trainings to our people.

Karsten Hohage: So, let's maybe dedicate some time to training. There's, of course, a lot of different aspects around open source software in general that you can train people

about. Do you have at ZEISS, is there like an entire curriculum of trainings or from concepts down to details or is there one training and what is it focus on how is that set up for ZEISS?

Holger Streidl: For now, and we have to see how well this is working out on the long run, but for now we have a kind of basic training which is aimed at really every person at ZEISS who will sooner or later touch software. So get a software developer or change something or create something with software. And this is really meant to raise the awareness and to share the basic principles of what is open source, what is allowed to do, where are the challenges. And then we have a second training, which we call "FOSS professional", which is really a full-day workshop focusing or providing you all the knowledge that is important to do it the right way. And this is really quite specific knowledge so that you really learn about specific licenses, about, yeah, what are the challenges in the world, so that meanwhile we see source-available licenses getting popular and so on. And this should really educate specific persons who then are the experts for their team, which they can then support and consult in case of questions and so on, and so that not everyone has to ask me or get in contact with me, but we really spread the knowledge and make sure that also the colleagues get fast responses.

Karsten Hohage: So most of these people that you train are senior developers probably anyway. You don't need to educate them about GitHub so much because they've been using that for a while anyway, right.?

Holger Streidl: Exactly, but mainly it's currently for us first, the main focuses is on the inbound use. So when we are integrating open source components within our own products and the outbound use is currently, I would say, still growing or we are currently investing a lot of time in clarifying the best ways on how to contribute there. And what are the best processes here.

Karsten Hohage: Ok, does that sound pretty similar to a SAP or actually we're probably a little have a little more focus on the outbound already, right?

Peter Giese: I think there are a lot of similarities, so by coincidence, we just released in January a new learning program for SAP and that consists of four modules, an introduction to open source. And then the next module is about inbound open source,

so how to consume open source in a secure and compliant manner. And then we have a module about outbound open source, how to contribute to open source. And then last but not least, we have a module about InnerSource because SAP is, of course, not developing all of its software open source. But for the things that we are not publishing as open source we still try to follow the open source development model in-house by running them as InnerSource projects.

Karsten Hohage: Ok.

Peter Giese: In our inbound module we are conveying similar information, as Holger just described, and we also have a similar concept. We have open source champions at SAP who work closely together with OSPO so that in all our development locations spread across the globe, we also have local champions that can act as first level contact in case of questions and consulting for teams. So that is also a little bit similar to what Holger just described.

Karsten Hohage: How about the effect that is often listed as a benefit of open source? Do you Holger see open source as an attracting factor for bright young new talent? Because doing things open source is a little bit cooler then doing it proprietary.

Holger Streidl: Yes, definitely, I think it's beneficial for both sides, so for them or for the developers, because they are just used to, I would say already during their studies or during their education to work with open source projects. They can be sure that although they might change the employer and they do not have to give up their skills or knowledge of the specific technology or project, they can just take this with them to the next company and just continue where they stopped. And at the same time, I think this is also one big advantage for us as a company, because we do not have to educate the people in the technology that they are supposed to use. We can just say "No, continue! That's also one technology that we use or want to integrate in our products" and the guys normally do not have to start from scratch.

Karsten Hohage: So does it sometimes even work this way, that Holger goes to his boss and says 'Boss, I've seen this guy out there in the open source communities, he's doing this and that and this and he seems to be brilliant or she, lets hire her!'.

Holger Streidl: that would require that I'm a coding wizard, and that's not really true because I am really excited about everything that's happening in the in the open source world, but I would not really call myself an expert in any serious programming language or so.

Karsten Hohage: Maybe you know who the coding wizards are and you see that the coding wizards all say 'hey, what you're doing there is great and it's relevant to ZEISS'. And then you say 'Hey boss, let's hire this person!'.

Holger Streidl: Yeah, I see your point, but this would probably also require that I spend a lot of time in participating or checking out what's happening on GitHub and yeah, right now, as also I think we once said before, I'm already quite busy in providing the trainings and so on. And so it's really sometimes hard to catch up with the community. And I guess our engineering teams have the best idea of what they actually need or what is important to their work. And so I think it happens more that way. But I mean, in the end, it's fully true. I just learned that a specific project, they needed some person from a community and they just hired him or her on a freelance basis. So…

Karsten Hohage: Oh, okay.

Holger Streidl: Just to make sure that they really can benefit from the knowledge or both can benefit from the knowledge, because in the end it goes back into the community project. And so…

Karsten Hohage: Ok, so these things do happen.

Holger Streidl: Yes.

Karsten Hohage: Peter, does this happen for SAP as well, that we just know someone from out there and say 'Hey, you want to come work for us?'

Peter Giese: That doesn't happen so often, but the other way round happens more often. So when we present our open source projects at a meetup or at a conference, we already had several applications from people who attended those presentations, for instance, with Gardener. In the meet ups that we did and where we talked about

Gardener some developers outside of SAP became aware of what we are doing with respect to container and cluster management. Then they applied for a job at SAP and we hired them for the project and this has happened already several times. So I think open source is also a brilliant way to make people aware of what we all are doing. And sometimes people are surprised because they don't associate certain technologies with SAP even though we have significant development efforts in those areas or technologies. And maybe Holger already mentioned most of the important aspects for open source from a developers point of view. One of them being that developers can develop their own personal brand. And definitely that leads to the fact because they are working in the public, oftentimes on public GitHub, that a lot of companies also use GitHub as a hiring tool where they are looking for contributors to open source projects or components which are mission critical for their respective companies. That definitely happens a lot. And I think one advantage that I would also add from a developers point of view is as a developer, if you work on an open source project, you have the chance to work together with the world's leading experts in that respective fields. Right. If we take again the example of cluster management, if SAP would develop our container orchestration solution in a proprietary way, then our developers would just talk to each other. Now we are doing it in the open, based on Kubernetes and we can talk to the world class Kubernetes experts. And that is, of course, also very satisfying for developers. And it's also great for learning and for keeping your knowledge up to date.

Karsten Hohage: So it works whichever way - you can talk to the leading experts, you can be recognized as the leading expert, you can hire the leading expert, you can whatever the leading expert, they're all out there. Great. Yeah.

Peter Giese: Absolutely. That's the beauty of open source.

Karsten Hohage: OK, now we have talked about quite a few aspects in this last half hour, if you could have or if we could have three key takeaways that we want our listeners to remember from this podcast, maybe we will all do one. Peter, no Holger does one first then Peter does one and I do one. So, Holger, your turn first. What's your key takeaway from the podcast?

Holger Streidl: I think in my opinion, what's most important is to really focus on knowledge and sharing this knowledge instead of just betting on a specific tool or on a

policy or a process, because this might be of not that much use if you don't know why you're using this and what you need to check for. So, I mean, sometimes vendors are selling tools and they tell you 'yeah, if you use this tool, you can be sure that you are open source compliant'. But in the end you are open source compliant if you've understood what you really need to focus on and what are these aspects and most importantly, what are the underlying principles, because only in that way you can make sure that you can fulfill the requirements and take the best out of this.

Karsten Hohage: Ok, great. Peter, what's your one most important point?

Peter Giese: The really nice thing about managing open source in a company, for instance, in the form of an Open Source Program Office is that you can also do it the open source way. There's a large community where you can turn to for help and for exchange. For instance, we have the Linux Foundation TODO Group where a lot of Open Source Program Offices meet regularly to exchange best practices. Then we have the OpenChain Reference Tooling Group, which aims for creating a complete open source managing tool chain, compliance tool chain completely based on open source projects. That's great. And in September, end of September, beginning of October, there will be the first OSPOCon, so Open Source Program Office Conference. And that is, I think, a brilliant event for all OSPOs to meet and exchange and collaborate.

Karsten Hohage: Ok, here's one for the OSPO's, then it's my turn, my turn says that the sheer fact that we're recording this podcast among SAP and ZEISS actually proves, I think, that open source is being lived. And Holger, thank you again at this point for being our first external guest. Thank you, Peter. Again, it was nice to have you both here and thanks all out there for listening to the Open Source Way. If you enjoyed this episode, please share it and don't miss our next one. It's published every last Wednesday of the month around noon. You'll find us on openSAP and in all regular podcast distributions like Apple podcasts, Spotify and the likes. Thank you all. Thank you, Peter. And Holger again. Goodbye.

Peter Giese: Thank you and goodbye.

Holger Streidl: Thank you so much, goodbye.