

Olivia Ryan: Okay, we're here with Neil Deakin and it is June 5th, 2006. And Neil, when did you first start using computers?

Neil Deakin: When I was ten and my father bought us a computer for Christmas, and that was when I started using computers and he taught me how to program little things that just drew stuff on the screen and all that.

Olivia Ryan: So was your father a programmer?

Neil Deakin: No, but he'd played around with it. He's an engineer. But he played around a little bit with it, made little things. He was doing various business things with it.

Olivia Ryan: And what kind of—sort of that's what got you interested in computers. Did you take any formal--?

Neil Deakin: I took computer science in university.

Olivia Ryan: You did.

Neil Deakin: Yeah, for four years.

Olivia Ryan: For four years?

Neil Deakin: Yeah.

Olivia Ryan: And do you remember the first programming project you worked on?

Neil Deakin: At work, or early [in life]?

Olivia Ryan: Sort of any—kind of your, maybe, first sort of substantial project—either at university or before university.

Neil Deakin: Well, probably the most substantial one would probably be my thesis, which was an application written in JAVA which—it was sort of a math related thing. So you'd draw various shapes on the screen and it would compute various answers and so on. It's a bit hard to explain. Once you know the— with the math and all that.

Olivia Ryan: Sure. Well, when did you first begin contributing to open source projects, and how did you first sort of connect with the open source community?

Neil Deakin: Oh, well, I started working at an ISP, Sympatico in Canada, and I was doing browser customization of Netscape. And then Netscape went to open source into Mozilla. So I kept following through on that and I just got interested and I started writing documentation and so forth for it, outside of work. And then I just got involved in it through that.

Olivia Ryan: Okay, so what are the, all the different projects that you've worked on from Netscape up until now, for Mozilla?

Neil Deakin: Oh, well, I started out working on documentation on the Mozillaplanet.com. I did that starting in, around 1999. I mainly did that as—because I wanted to learn how to use it and all that. So, I wrote all this documentation and people liked it and all that. Then I kept going with that. Like, I still had another job that wasn't—

Olivia Ryan: So you were volunteering?

Neil Deakin: Yeah, yeah, I mean, I still had another job that wasn't—I wasn't doing as much browser customization at that time, because I had moved onto website stuff and so on, for my job. But I still kept going with the documentation stuff. And then a couple of years ago, maybe three years ago, I started getting a little bit into the actual coding and stuff. I mean, very minimal at first, and then I started picking up—I started working on a larger project. I started working on a—it was an application of my own. I haven't worked on that for a while with any—I did a bit of—and then I got a job at Mozdev which does Mozilla consulting. That was at the end of, probably 2003, October. I worked there for just over two years. And we did a variety of projects, or paid-for projects, for various companies and the US government and so on. And then I got a job here at Mozilla.

Olivia Ryan: And when was that?

Neil Deakin: That was in February.

Olivia Ryan: February? This February?

Neil Deakin: Yes.

Olivia Ryan: So what are you working on now?

Neil Deakin: I do the XUL stuff, which is the UI language. That's mainly—my main responsibility. I've done a few other things for Firefox 2, or whatever, that needed to be done. But that's mainly what I've been working on.

Olivia Ryan: So when you volunteered, how often did you volunteer and say, maybe, how many hours a week or a month did you generally volunteer?

Neil Deakin: It tended to depend on how excited I got about doing something. I mean, there were periods where I wouldn't do much for several weeks and then there were periods where I got excited about something and then I would work on it all weekend. It depended on feedback as well. If somebody provided feedback to say, "Oh, I wish we had some documentation about this," and I thought, "Oh, that's a good idea," and I'd rush to write it or something. But I would say probably, I mean, except for weekends, I mean, during the week I didn't do that much—maybe an hour or two here—it really depended on how interested I was at the time on whatever it is I was doing.

Olivia Ryan: What would you say is the biggest reason why you volunteered?

Neil Deakin: Well, initially it's because I was interested, like, I'm interested in UI. So I wanted to learn how to use this UI tech—UI mark-up language and so on. And I wanted to learn it. So, I thought, well, a good way of learning it is to write some documentation on it, which wasn't—it wasn't really available at the time. So I thought, well, I can sort of do two things here, I can write documentation for other people as well as trying to learn it myself. I mean, it started out very small, and then it, like now it's like, five times larger, or ten times larger, or something. And that way I could learn the language and keep my interest in UI alive.

Olivia Ryan: And did you find it—how did you sort of enter into the community as a volunteer? Was it sort of an easy thing to do, or were there some barriers you sort of had to cross?

Neil Deakin: Yeah, it was hard because I'm fairly shy, and so, I mean, there's a barrier of trying to get—you have to kind of get involved on IRC and chat and all that kind of stuff.

Olivia Ryan: Had you ever at that point used IRC?

Neil Deakin: No, I hadn't used that before. So it provided a big barrier. And of course, you've got these people—I mean, at that time Mozilla was still a lot of Netscape people.

Olivia Ryan: Right, so what year was this? Probably '98, '99?

Neil Deakin: Yeah, '99 or so. I mean, I'd been reading stuff—I guess a 'read only' sort of user. Like, I didn't actually contribute before that.

Olivia Ryan: And how long were you doing the read only before you—

Neil Deakin: Well, since they started, really. I mean, not as much as later, but I just kept my interest going – because it was sort of relevant to my job as well, in a

sense, to keep up with what Netscape was doing because that's what my job was. But there was a lot of barrier with all the Netscape people. They did seem a little bit more—like, they knew what they were doing and all that. I didn't of course, so there's a bit of a barrier then. It is sort of overwhelming, all these people that you don't know and all that. Especially if you're like me, a quiet sort of person.

Olivia Ryan: So did you just sort of start off slowly by contributing?

Neil Deakin: Yeah, very slowly, yeah.

Olivia Ryan: What were the first sort of contributions that you made?

Neil Deakin: Yeah, documentation was the first—

Olivia Ryan: Oh, right, so you just—

Neil Deakin: Yeah, that was the first thing and I just posted a message on the newsgroup saying, "I've written this documentation." I mean, at that time it was about 12 pages or so. I mean, it's now about 70. And people said, "This is great! This is great stuff!" And that sort of encouraged me to keep going.

Olivia Ryan: And who was it who first started communicating with you, people from QA, or who did you like, generally first start talking with?

Neil Deakin: Probably other—

Olivia Ryan: Developers?

Neil Deakin: No, I would say more other—see that's why it was hard to get in because the real developers didn't generally communicate. And I found that to be the case. Whereas people who were learning the technology outside, other volunteers, would communicate.

Olivia Ryan: With one another?

Neil Deakin: Yeah.

Olivia Ryan: So was there kind of an inner—was there anybody who was sort of employed by Netscape or Mozilla who acted as an intermediary between the developers and the volunteers? Or not?

Neil Deakin: Not for me, no. I mean, there may have been for other people. It really depends on how much, like, some people really sort of are more aggressive about talking, like, I wasn't very aggressive and all that. But some people are more—or they try to get more and more involved, I mean, to the point of

getting annoying, for example, or whatever. Which is what—I didn't want to annoy people, that's the thing.

Olivia Ryan: What was your full-time job at the time?

Neil Deakin: Working at the ISP. Yeah. Well, I worked there until early 2002, and then I sort of just had off and on jobs for a while, and then I worked at Mozdev, and then Mozilla.

Olivia Ryan: Okay. And right now I guess, or maybe even over time, since you've been contributing to Mozilla projects, do you generally work alone, or do you work with small groups, or? And how do you communicate with the people that you work with?

Neil Deakin: Here at Mozilla?

Olivia Ryan: Yeah.

Neil Deakin: Generally, on my own. I mean, I haven't had a lot of projects yet where I've had to work with other people. I mean, for some developers, depending on what their role is, they just sort of go off and say, 'Okay, do these kinds of things.' It was a bit weird at first because I wasn't used to that. And I mean, I told them about—that I was asking—should I be getting things to do and all that. And they'd say, 'No, just work on whatever you think needs to be done.' So, it was an odd feeling. I mean, it was sort of odd because I sort of expected somebody to sort of be watching what I was doing at least, and that's sort of an odd feeling that maybe someone isn't. So you're not sure whether you're doing the right thing, or whether they just don't know what you're doing. I have done a couple of things that have involved other people, session storage stuff was a recent thing that I worked on, and some stuff with the notification bar, the yellow strip that says a pop-up has been blocked. Those are things that we did for Firefox 2, which I worked on with other people. And we just communicated in the usual sort of, IRC or email, or Bugzilla or whatever.

Olivia Ryan: And so you're describing sort of a lack of structure, I imagine, that was different from what you had previously been working on.

Neil Deakin: Yeah. Well, it depends on—I think it depends on the person. I mean, some people are more involved in—like right now, I think a lot of people are more focused on Firefox 2 whereas a lot of my work is more—later stuff for version 3. So it doesn't have quite as high a noticeability in terms of like, if I was working on some key—when I was working on the session storage stuff that was definitely more noticed, and people were paying attention. I mean, Mike Shaver who was in the room with me, we were talking about it, I mean, and all that stuff.

Olivia Ryan: And do you feel as though strict ownership of specific areas of code is enforced?

Neil Deakin: In some areas, yes, definitely. In other areas it's, like, there's so much code, of course, there's only so many people to do that. So some of it is sort of reduced in terms of—you know, there's huge blocks of code where one or two people, or whatever, sort of are the person you would go to ask about that, but they might not actually know the specifics of a certain piece of code. Like, the code that selects—the code that handles selecting text and all that, is a big piece that nobody really knows a lot about.

But there are people that sort of would own the larger directory or whatever, that that's in, that we would probably ask about it. But they wouldn't necessarily know anything about it. But I do think it is important to have that ownership, strong ownership, in those cases, so that there is somebody—so that you know the code is being maintained.

I mean, sometimes, some of the volunteers have wondered, is this particular feature even being maintained. And there are features like that that we don't know whether—they haven't been worked on for years or whatever, and we don't know whether they're being maintained and if there's crashes in them and all that. We don't necessarily even know if the people are using them heavily or not.

Olivia Ryan: So in those instances where there's no clear owner, if you will, who might one go to if they wanted to make a change? Is there somebody that they would feel they need to ask, or communicate? Or would you just sort of go in and start working?

Neil Deakin: Well, it depends on the person. Usually people come over and they would ask—the trick is you have to—people have to always be encouraging so that they do help out. Not everybody had the personality where they're always encouraging. So, if you're lucky you get encouraged and you start helping out. And some people do do that and that's how people get involved. But other people sometimes get discouraged by the fact that someone—nobody knows what to do. And they don't necessarily help out. But some people just decide they want to do something and they fix it, and in the cases where there isn't any strong ownership, somebody eventually just gets suggested.

Olivia Ryan: So that person may be somebody who steps forward and starts making changes, has that person ever sort of become a module owner?

Neil Deakin: Eventually. If they keep working in it. I mean, there's various people that have gotten into that. I mean, I sort of did that with certain aspects of it as

well. And there's a couple of other people that have picked up a piece and then they're probably the person who you would go to now.

Olivia Ryan: Have you ever sort of clashed with another developer over a particular point of code and if so, like, how did you sort of resolve that?

Neil Deakin: Not yet, no.

Olivia Ryan: No?

Neil Deakin: I haven't been as involved in big code changes yet. But some people have had that problem, I'm sure.

Olivia Ryan: And have you ever noticed any sort of tensions or major differences, just sort of fundamentally between people who work on the front and people who work on the back end?

Neil Deakin: Oh, yeah, there's definitely that kind of thing. There were a lot of those kind of problems once we moved from the Mozilla suite over to Firefox. I mean, there were a lot of clashes there, I mean, from front end people and back end people as well. Because the back end people is sort of, the gecko part, is different people that have different goals for what they're trying to do and when they're trying to do it, when they want to have a release and so on. And then the Firefox people have their own timelines and so on. So sometimes that happens. But I think the people who have been on the project longer know that those kinds of things, I mean, those kinds of things naturally happen. I mean, people that are new, or outsiders, don't always know that kind of thing. And they wonder why people are making changes that don't make sense to them or whatever, and there's all kinds of issues and politics around those kinds of things.

Olivia Ryan: So how are issues like that generally resolved or talked about?

Neil Deakin: Well, it depends on the issue.

Olivia Ryan: Yeah, if you want to give an example, if you have an example that's fine.

Neil Deakin: Yeah, I mean, the big issues are not always resolved. Usually new groups usually do that actually, rather than—just because it's a bit more—I guess rather than IRC where the discussion goes away, like newsgroups, it allows discussion to—things don't generally always get resolved. Especially the huge issues like--that kind of thing. But littler things usually do. Once you have strong owners of pieces, they sort of become the sort of final say, so it makes it a lot easier. Like, now that we actually have Mozilla Corporation and a lot more people and a lot more strong owners—I mean, even owners outside the Mozilla Corporation, it's made it easier for people to—especially

in the Firefox UI, and we have Mike Belzner who does the UI part, or other people who sort of say these are the things that sort of, we're going to be doing. And so it sometimes causes conflicts in people that are new that don't always know that somebody has to take control and decide how things are going to be. Even though you might not agree with it.

Olivia Ryan: You mentioned you started off as a volunteer. To what extent do you think Mozilla relies on the work of volunteers and has that reliance changed over time?

Neil Deakin: I think it's definitely much more so now. Like, when Netscape was pretty much owned—they pretty much did most of the decision-making and all that. And I think that made it very hard and very contentious with people trying to get involved, I mean, because it was a big company around it, or AOL even. So nowadays Mozilla is a lot more open with that kind of thing, I mean, they invite volunteers to their developer days and so on. And they definitely don't want to take over in any way. And there are quite a few people outside, especially in the QA, I mean, that's pretty much all done by volunteers, except for a small handful of people. I mean, there are certain things that the volunteers can't really do, like maintain all the servers and all that kind of stuff. But a lot of, I mean, they don't actually want to hire everybody from the community. But they have hired quite a few people that they thought were good, but then they haven't done that for everybody.

Olivia Ryan: Do you think that—is volunteering sort of the best way—the best approach, say you wanted to get hired? Would you start out--?

Neil Deakin: Yeah, if you wanted to get hired that's the best way, because it shows that you know what you're doing and you can get—you know how to get involved and communicate with everybody. I mean, some people aren't—they're just—I mean, obviously developers, that's the best way. I mean, if you're doing marketing or something, there's not really any way. Well, to some degree, but I mean, some people in like, more management positions wouldn't get hired. Which could be contentious to some of the volunteers or whatever. Because, I mean, there's new guys coming in at the higher levels of the corporation and that can sometimes— who is this new guy who's telling us what features need to be implemented? That sort of thing. So they have to sort of balance that with making sure the volunteers do actually have enough say. Because it feels a lot better when you sort of say, "I made this" or "I decided" and that's a good thing.

Olivia Ryan: So have there been a number of people hired just for managerial positions recently, or?

Neil Deakin: Yeah, they've hired a bunch of people like that.

- Olivia Ryan: And so how does that—how do you strike that balance between making sure that people that have been around for a while, people have been volunteering for a while, do you feel like they have enough input and enough say?
- Neil Deakin: I think because of the managers, in a sense, do try to stay a bit more away from the specific decisions. I think the developers are more interested in like, where does this button go, or whatever. Or, what kind of design for the implementation part, as opposed to general, “When do we launch?” type things, which is I think what the managers would do. They have to make sure that they don’t try to overwhelm with a lot of, “This is what the UI should look like,” right. Or, “This is how—this is the feature we’re going to implement and you implemented it this way. We want to have the volunteers decide for themselves how it should be done.” Or collaboratively at least. Or that’s what I think anyway.
- Olivia Ryan: I understand that during the development of Firefox, CVS access was restricted to a very small team of people.
- Neil Deakin: That’s right, yeah.
- Olivia Ryan: And—
- Neil Deakin: To just Firefox UI. The rest of it was still the same.
- Olivia Ryan: The back end--
- Neil Deakin: Yeah.
- Olivia Ryan: --was developed in the same manner that other—
- Neil Deakin: Yeah, anybody that had gotten CVS access before that still had it there, but not for the UI.
- Olivia Ryan: The UI.
- Neil Deakin: Yeah. And there’s other people—the JAVA script portion is only accessible to certain people.
- Olivia Ryan: Even now, you’re saying.
- Neil Deakin: Yeah, and that’s always been the case. Yeah. And there’s a couple of other modules that are like that.
- Olivia Ryan: And do you think that—

- Neil Deakin: Those are modules that are very strongly owned. So it makes sense in that case.
- Olivia Ryan: Do you think that's a good model for production—a good way to work?
- Neil Deakin: I think the problem with that was more that the people outside of that group thought that they were being excluded in some way. Not that they necessarily were, but just the way it was done was—seemed like they were being excluded. So they—it sort of built up this atmosphere of exclusion. Even though it wasn't necessarily the case. So, because you couldn't access it, and it seemed like you couldn't access—you couldn't influence their decisions, and all that kind of stuff.
- Olivia Ryan: And how—or does it, does that differ at all from any other Mozilla projects? The sort of restricted access?
- Neil Deakin: I think there is a restricted on all the—I mean, well, there's the other various tools like Bugzilla and so on. I assume that they have—I mean, I haven't really contributed at all in there, but I mean, I assume they must have their own set of restrictions and regulations and all that. And the same set of problems, I'm sure.
- Olivia Ryan: Why do you think Mozilla, and in particular Mozilla Firefox, has been able to attract such a large number of users?
- Neil Deakin: I would probably say, I mean, obviously there's marketing behind it. I think it's just that there was sort of like this new vision for the simpler UI and it's not so much the simpler UI, but just that, I think just having like, a vision for it, rather than like, the older style, like Mozilla, that was more what Netscape was, that really was just sort of chugging along and wasn't really taking the extra steps to go anywhere, and I think people saw, oh, this Firefox is actually going somewhere and it's new and it's more focused on what users want to do. And that's sort of what they've been pushing. And I think that's really what does actually sell a lot of things. Making sure that they're focused on what the user actually wants as opposed to what the company wants them to do, or whatever.
- Olivia Ryan: How would you list Mozilla's priorities?
- Neil Deakin: I would certainly say that Firefox was the main priority. Did you mean that sort of granularity, or?
- Olivia Ryan: Yeah, sure. Or however you maybe see whether or not the priorities have changed over time. I mean, you've been with the project, in one way or another it seems for a long time. How do you see it shift in focus or priorities at all?

- Neil Deakin: Yeah, I mean, in the earlier days the focus was more on everything as a whole, I think. Just browser—not just the browser but the mail as well. And Netscape had that focus as well for corporate users, or whatever, that were interested. As well as back end stuff and being able to embed it in other products, or be able to embed the browser into other products, and so on.
- Whereas now I think the focus is more on—I think they've sort of more cleanly divide—well, not necessarily cleanly, but they've divided up the pieces a bit more into Firefox and Thunderbird and then XULRunner which is the embedding, or the equivalent. So I think they've—I think it makes it easier for them to prioritize the specific pieces. As opposed to before where everything was just sort of one big blob, and there was no real priority on any piece.
- Olivia Ryan: And the marketing of the projects, do you feel like marketing is something that the developers can sort of do along with the community, like the Spread Firefox community or community of volunteers, or do you think it's important to have some professional marketers aboard?
- Neil Deakin: Well, so far it's worked with just having—well, I mean, we do have a few, but it has worked very well with the volunteers, I think especially in Europe. I'm not sure if we actually have any real professional people there, or not very many. I mean, we only have a limited number of people and we've managed to push very well in this. But in other areas of the world, in Asian markets, or whatever, we haven't done as well. Yeah, but I think the idea is, yeah, I think the volunteers have done a good job. I mean, they do have a couple of people just to—I mean, I think there's probably a need for at least a few to get into areas where volunteers can't necessarily get, like either into businesses or into paying for certain things. Like when we did that New York Times ad, I think that probably needed—I mean, volunteers, I don't think would necessarily have done that on their own. I think it needed somebody to drive that. I'm not sure who exactly did that, probably Asa or someone.
- Olivia Ryan: And why do you think it is that Firefox is mainly the focus of the marketing efforts and to a lesser extent maybe Thunderbird, but maybe--Firefox seems to be the main focus of marketing efforts.
- Neil Deakin: I guess maybe because, I think it's easier to push a browser probably. I mean, it's a simpler product I think. And I think the mail requires more server infrastructure and so on, it's harder to get. And a lot of people use web mail anyway. So, it's probably harder to push that kind of product. I mean, mail doesn't have the same issues—like a browser has all this, for the last few years, has all this pop up issues and I kind of think people were having problems with that kind of stuff. And then—well, I guess mail also has the, you know, junk mail and all that kind of thing. But I don't think that—well,

also the mail isn't quite as—there isn't necessarily one other mail client to go after because people use web mail and they use Outlook and they use Eudora or whatever, or Gmail, or whatever. Whereas the browser is more—there's only one main competitor, so it's IE, and it's probably easier to target, maybe?

Olivia Ryan: What about, like why do you think Firefox is marketed more of the other Mozilla browsers?

Neil Deakin: As I said, I think it's because it's more, it has more of a vision I think, than the suite has or whatever.

Olivia Ryan: Have you contributed to any other, any non-Mozilla open source software projects?

Neil Deakin: No, I don't think so, no.

Olivia Ryan: This is sort of a broad question, but how might you define a successful open source project? What sort of elements or practices do you think might be necessary for developing a successful project?

Neil Deakin: Well, I wouldn't say it was necessarily the number of people that were using the product, because you could be a success with just a small number. I mean, I think it's really dependent on the project. Perhaps, I guess, a successful project is just one that enough people use that you can continue developing and continue improving. I mean, if not enough people are using it then you might get discouraged and, you know, like, so that enough people can—then you would get more people involved and it starts growing, I suppose. I mean, as long as the project keeps going, then I think that's just a success—well for me anyway. I mean, different projects may have very different goals. I mean, Mozilla says that their goal is to have the open Internet and all that kind of thing, rather than one browser. Although, I mean, I don't know what they would do if say, Firefox became fifty percent usage. I mean, would they say, okay, that's enough, we've done what we need to do, or would they keep going to get up to a higher level. I mean, that's always a sort of interesting question.

Olivia Ryan: Is it a question that is discussed?

Neil Deakin: Yeah, I think it's probably been discussed. I mean—

Olivia Ryan: There's no clear answer at this point?

Neil Deakin: Yeah, and I'm not sure what would happen then, I mean, because it's not really their goal to achieve world domination or anything. I mean, that might be Microsoft's goal, but it's not necessarily ours.

- Olivia Ryan: So what would you list—I guess, I mean, obviously there are probably a number of goals, but what would list are the most maybe, 1, 2 or 3, most important goals of Mozilla.
- Neil Deakin: Well, their main goal is to, I can't remember the exact wording, but it's something like, to promote open freedom on the Internet—not freedom, as like speech or anything, but just being able to have more—
- Olivia Ryan: Access.
- Neil Deakin: Yeah, access, and more than one, like not be—like go cross platform, like, being able to use different systems and not just be controlled by one vendor or something. Yeah, I suppose that generally, is their goal. But other goals like making money and achieving world domination and all those, are not goals.
- Olivia Ryan: Do you consider open source software projects as a public service?
- Neil Deakin: In a sense, yeah. I mean, I think it probably, in the sense that it encourages—like if ten companies get together and build one product, it sort of seems more valuable than if the ten companies each build their own version of this similar product. Like, it seems like that's a lot—it would seem more cost effective to me to just build one or two, or some smaller number, rather than having everybody—although you do sort of need different versions I guess, in order for there to be some reason to improve the product. That's especially how companies would look at it anyway.
- Olivia Ryan: What if anything, do you think the popularity of Firefox will do for sort of, open source, as a whole?
- Neil Deakin: I think it's done quite a bit. I mean, once you have some successful projects, I mean, people sort of, I mean, whether Mozilla considers a large number of users to be a success or not, I mean, the media, or whatever, or individual—other users, would probably consider that to be a success. So I think it probably is fairly encouraging for other projects. Whether that—I mean, a big thing would be whether to get large computer manufacturers, like Dell or whatever, to actually use the software by default for a lot of these other products. I mean, Firefox could be doing that, it's fairly easy for them to use Firefox on a computer as opposed to say, Linux, or something. And some products like Apache or whatever are not made for individuals. And that has been a successful one. So I mean, Apache already is a fairly highly used product even before Firefox. So I don't think Firefox is necessarily the first one to have done that. Although it might be the first—more user product, that's done that. So, I think people will probably see that as a success, in a sense.

Olivia Ryan: And do you think that open source techniques can be applied to other means of production, like the sort of, you already mentioned marketing being done by volunteers, and sort of opening that up.

Neil Deakin: Yeah.

Olivia Ryan: Do you kind of see that as part of the same movement? And do you think that there are other kinds of things that can be opened up in similar manners?

Neil Deakin: It's possible. I think it might be hard to do that, given sort of just the way that companies have historically worked. I mean, with trade secrets, and all that kind of stuff. And it's probably harder to do that, especially in North America, I think it's probably a bit—probably a bit easier in Europe, I would say. But yeah, I mean, in terms of—yeah, I guess, I mean there's a lot of products that are made sort of with pieces with—by lots of companies working together. I mean, they're not necessarily open. I mean, I think it really depends on how the company feels. I mean, some companies are a little more open in that, and I think having more open source and stuff might encourage.

I mean, even Microsoft is now more sort of open than they were five years ago. And I think open source has probably been a big factor in that. And then the Internet and all that stuff. Having people—encouraging them to provide more of their various things, and be more open and like web blogs and all that from their developers and so on. I mean, it used to be the case where companies wouldn't even be allowed to talk to people about anything they were doing, right? Whereas now you often see that. I mean, sometimes it's limited, but sometimes they can get really open in that way, and I think people appreciate that kind of thing.

Olivia Ryan: Do you think that this is sort of a trend that will continue? Or I guess, more broadly, what do you think the future is for open source?

Neil Deakin: Yeah, I think that will continue. I mean, I don't see why it would disappear. And it's not like it can really diminish in any way. I mean, it's not really gone too far yet, so I think there's still lots more places it can go.