Will young developers take on key open source software?

DANIEL STENBERG

Daniel Stenberg first released his open source software in 1996

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Many of us have prepared instructions and critical information for our family in the event of our sudden demise. For Daniel Stenberg, that includes passwords for his Google and GitHub accounts.

That's because he's the founder of curl, an open source internet transfer engine that has been downloaded billions of times and is used to transfer data to and from computer servers.

It was first released by Mr Stenberg in 1996 and is now used by millions every day.

It's important that someone is able to maintain curl when he steps away.

"I just want to make sure that everything is there so the day I go away, someone can take over," Mr Stenberg says.

It's a problem confronting many of the open source software pioneers who transformed the technology world in the 1990s and early 2000s.

Their ethos was that anyone could contribute to the development of an open source application or operating system – and the software and underlying code could be used, modified, and distributed for free.

The open source movement broke the stranglehold of big technology companies, spurred innovation and underpins much of today's technology landscape.

In 1999, Loris Degioanni made his first contributions to an open source network analysis tool that eventually became Wireshark, as part of his master's thesis. "My concern was graduating," he says, not succession planning or the long-term future of the project.

Almost 30 years on, Mr Degioanni is now CTO and founder of cybersecurity firm Sysdig, which is a key sponsor of Wireshark.

"We're approaching the time when the founders of these early open source projects are starting to get old," he says.

Loris Degioanni has been working on open source software Wireshark since 1999

While projects do come and go, he explains, some remain relevant over the years, and founders and maintainers usually want to ensure they live on while there is demand. That's not just because they've invested time in developing the code itself, but also because they have spawned communities, both virtual and in the real world.

But while the likes of Mr Stenberg and Mr Degioanni can take action to ensure the keys to the kingdom are passed on, ensuring there is someone to pass them to can be a challenge.

Many in the open source community worry there are not enough younger developers willing to get involved in contributing to or maintaining projects. This is often unpaid work after all.

Even Linus Torvalds, the creator of Linux, the operating system which kick-started the open source revolution in the early 1990s, noted at the Open Source Summit Europe in September that the "kernel maintainers are aging".

Amanda Brock, CEO of OpenUK, a non-profit organization which represents the UK's open technology community, says younger developers might not appreciate the grip that closed software companies had in earlier decades.

"You've got a next generation who haven't engaged as a philanthropic community and volunteer community in the same way, at the same scale."

There are technology barriers to address too. Many key open source projects were originally written in C, a coding language first developed in the early 1970s.

While C is still taught in universities, it is no longer widely used in the commercial world, Mr Degioanni explains. "The fact that C is the main language makes it harder to attract a younger generation."

Amanda Brock says younger developers are not as active in the open source community

There are ways to work around this. Mr Degioanni says both Wireshark and a project he founded, Falco, rely on "plug-ins", which can allow new functionality to be written in different languages.

Mr Torvalds has given his blessing to the adoption of Rust as a programming language for Linux, while noting the "Rust versus C discussion has taken almost religious overtones in certain areas."

When it comes to steering projects into the future, leaders and maintainers have the option of handing over control to foundations. The Cloud Native Computing Foundation, for example, oversees 208 projects, with more than 250,000 contributors. Wireshark has its own independent foundation, with Mr Degioanni as a board member.

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Not everyone subscribes to the foundation model. Stenberg and his collaborators have kept curl completely independent. "I'm much better off without being in their neighbourhoods and just running my own neighbourhood," he says.

And foundations still face the issue of ensuring a steady supply of fresh developers to keep projects alive, he notes.

Miss Brock says it's essential that the open source community consider how it encourages younger people to participate.

This is about showing that while being a contributor can be challenging it's also career enhancing, giving young people an entry into established ecosystems and an opportunity to finesse and highlight their technical skills.

"It's a way to help STEM talent flight," Miss Brock adds. "Because people can work from home in the UK or whatever country they're in."

Degioanni is more sanguine. Even if there's "probably less visceral enthusiasm" for the concept of open source, he says, the fundamental idea of being able to modify software is now a given.

And, he continues, "I've worked with open source my whole life. I've created my own projects. I've seen people join the projects that I created. I've seen people start their own open source projects."

Ultimately, he says, there is a "joy, especially for a young person" in creating software, seeing it being used and sparking a community.

"That feeling doesn't get old," he says. Even if the pioneers who popularized the earliest open source projects do.

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