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State of Open: The UK in 2023 Phase Three: "Skills or Bust"



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Understanding the sustainability of Open Source Software (OSS) communities requires a shift in inquiry from why contributors engage to how they navigate diverse work arrangements. The Web Science Institute at Southampton funded qualitative research on Open Source developer careers. This research uncovers a spectrum of economic models, including freelancers leveraging OSS contributions for client acquisition and employed developers managing OSS as "side projects". Financial backing from microfinance platforms like Patreon is noted, albeit as a modest household contribution. The intertwined nature of paid and unpaid work emerges as a prominent theme, with OSS efforts enriching skills and acting as a catalyst for professional opportunities. Life events, such as family commitments, shape contributors' engagement, highlighting the nuanced dynamics behind OSS sustainability and prompting reflection on potential models of state and organisational support.

Thought Leadership: Understanding the 'how' of Open Source careers

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Sustaining Open Source communities

Decades of academic research has grappled with understanding Open Source Software communities – from the hacker anthropologists of the 1980s and 90s, to the information systems theorists of the 'noughts' and 'teens'. Studies addressing the long-term sustainability of Open Source communities have taken various approaches drawing on ideas from anthropology and sociology about gift exchange, community and networks, and from psychology on altruism. Often a central focus of the research has been to explore 'why' individual developers and engineers do Open Source work, what motivates them to contribute time and labour, especially when it might not be paid.



The problem with motive

The problem with asking people why they do something, what motivates them, is, as any anthropologist or sociologist knows, that reasons given tend to be shaped by social norms, and individualised. Ask a

developer in an Open Source project why they are doing that work and they will say because they enjoy it or because it solves a particular problem they were grappling with. But this does not really tell us how to sustain it or why others are not doing it. 'Why' is not quite the right question.

The 'how' of unpaid work

The Sociology of Work offers a different set of questions for exploring open-source projects and communities and for understanding how to sustain them. These questions begin not with 'why', but with how? How is the work done? How do workers manage and organise the various tasks and jobs they navigate on a day to day, week to week basis? How questions reveal the complexity of people's working lives beyond their paid work, (care, household labour, voluntary and community work, creative work, activism).

'How' is also an economic question. It makes visible the financial arrangements (salaries, student loans, pensions, benefits, financial support from spouses or parents) that sustain daily lives and underpin household divisions of labour.

Doing research on Open Source labour

The Web Science Institute at Southampton funded qualitative research on Open Source developer careers. Twenty interviewees were purposively sampled from contributor 'top tens', community lists and GitHub profiles to capture diverse experiences including those of women and developers from the global south. They were relatively young (almost all were under 35) and with degree level education although some were self-taught in software development. They were working in various contexts from freelance, to startups, to nonprofits to global corporations. The 1 hour interview explored their careers from school through to the present and how they managed their Open Source work in relation to other work.

'Hats', 'sidelines' and 'things'

Those we interviewed were all juggling various work activities; some paid and some not. One distinct group, the professional freelancers, had a portfolio of activities that included lucrative freelance gigs (consultancy work building websites, offering bespoke software solutions, and writing and speaking engagements) and building and contributing to Open Source Software projects. They talked about their work in terms of 'the things that I do', and 'thing 1' and 'thing 2'. These tended to be mixed up together over the course of a working week or month.

Greg a nomadic freelance consultant developer, living in the global south, acquired clients from his extensive Open Source contribution and Github profile which provided a way to showcase the quality of



his software engineering; 'I'm doing a ton of stuff on the net where I know, it's not making me a ton of money right now, but I can charge whatever I want to my clients'

Those who were formally employed were working for a range of organisations from global corporates to small and medium size software companies. Open Source work was part of the 'day job' although they were more likely to be using than contributing. However, many had what they called a 'side-line' or wore 'other hats' which involved contributing to Open Source projects and being active in communities on GitHub outside their paid work time.

Jonas a German developer worked 60% as a designer for an Open Source cloud platform and spent the other 40% as a contributor for several Open Source project communities. His task based work pattern, shaped by release cycles, meant he struggled to limit his working time and had experimented with only doing paid work Monday to Wednesday- '...on

Thursday and Friday I will be out'. By 'out' he meant doing his unpaid open-source work.

Divisions of labour and resources

The developers managed a wide variety of different arrangements of paid and unpaid work including microfinance schemes like Patreon or Github sponsorship although this was mostly a minor contribution to the household. Their various income streams supported their unpaid contributions and time had to be managed accordingly. Several had flexible work arrangements which mean that paid and unpaid work forms were more integrated during the week. The unpaid work also in various ways supported the paid work providing skills development and an online CV that brought freelancers new clients and employed developers, new jobs.

Aisha, a young Indian developer, was in her first software job for a local technology company after graduating in information technology. As a student she participated in Open Source outreach schemes and participated to several projects which had helped start her career but found the long hours made it difficult to continue contributing: it's very code intensive, so after that, I kind of find it a little hard to you know get back to again contributing code to a different code base altogether'

The impact of life course events such as changes in employment, migration, and family responsibilities tended to reshape their working life and the arrangement of paid and unpaid work. Developers with young children for example noticed a reduction in their Open Source work.

Nikhil was a Sri Lankan developer who had relocated to Scandinavia with his young family to work for a global technology company in part to avoid the increasing political conflict. Open Source development was only a small part of his new job and having a young family had reduced his availability for the various personal projects he was contributing to 'I can't put that much time aside (for OS) as before when I am working at [...] because, family... yeah, life...'



Understanding sustainability

Looking at the ‘how’ of Open Source Software careers is key to understanding sustainability. These snapshots reveal some of the challenges and barriers to building and sustaining Open Source projects and communities.

They raise questions about skills, how these are developed over the working life of a developer and the role unpaid work plays in that.

More fundamentally ‘how’ questions help explore the practical parameters of new models of work – work futures – in which for example ‘sidelines’ and ‘things’ might be supported by the state via an individual basic income. Or where commercial organisations might mainstream support for Open Source via reduced working hours or flexible working arrangements and non profit partners. The role of organisations in Open Source sustainability is crucial and more research is underway that examines that.

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