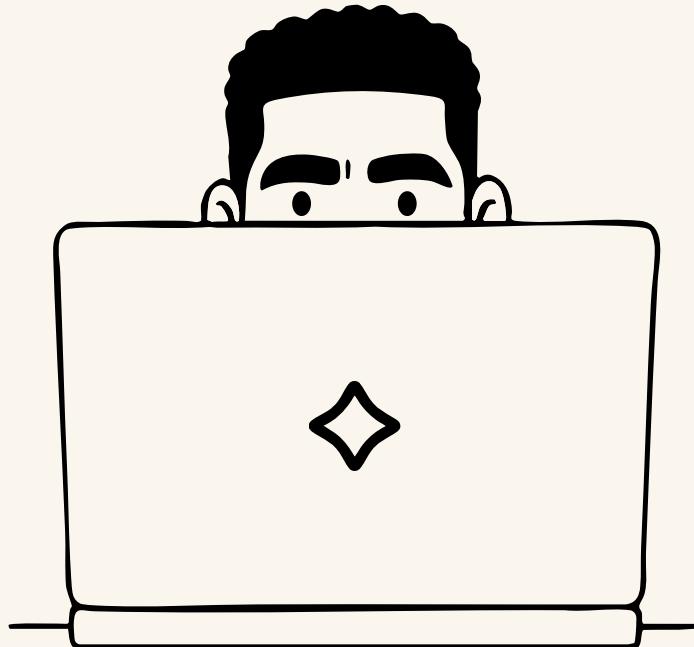


Permissionless Paths

By Laura Lotti



Executive summary

This report presents findings from a qualitative study examining sustainable open source development in the freedom tech ecosystem — an emerging field of decentralized, censorship-resistant technologies that ensure human autonomy. Between March and May 2025, we interviewed 26 Bitcoin and Nostr contributors with at least 12 months of full-time grant-funded experience. We explored their motivations, work patterns, and challenges to understand how they navigate open source development without institutional affiliation. While grant funding enables work free from corporate capture, our research reveals critical gaps in support structures for this decentralized workforce.

Our core finding: the very values and features that attract developers to the Bitcoin and Nostr ecosystems — freedom as an ideal, permissionless participation, autonomy over projects — become the source of their greatest challenges. We call this the "tyranny of permissionlessness:" while these principles enable open innovation and resist capture, without support structures they lead developers to navigate unlimited responsibility alone. **This isn't inevitable: with intentional design, we can maintain permissionless participation while building sustainable work practices.**

The report unfolds in six parts:

01.

STUDY OVERVIEW

Context, methodology, and participant demographics. Our 26 participants span 10+ countries, with 42% new contributors (<3 years) indicating healthy growth, while 69% have been grant-funded for 2 years or less, suggesting potential sustainability challenges.

02.

TOP LEVEL ANALYSIS

Results from our paradoxing exercise reveal core tensions between commons ideals and commercial realities, sustainable vision and unsustainable practice, especially as experience grows.

03.

THE TYRANNY OF PERMISSIONLESSNESS

Four converging dimensions create unsustainable conditions:

- **Ideological:** The social mission that attracts developers justifies self-exploitation
- **Structural:** Permissionless architecture creates isolated, overwhelming work
- **Human:** Self-management without support leads to unsustainable patterns
- **Institutional:** Grant systems reinforce individual struggles rather than collective support

04.

FOUR STRATEGIES FOR CHAOS

Contributors adopt distinct approaches based on experience and project type. With experience, they do not build more sustainable approaches—they learn to lean into chaos.

05.

BEYOND FINANCIAL SUSTAINABILITY

Three critical tensions emerge:

- The ecosystem thrives through constant developer turnover while losing critical knowledge
- Grant structures actively discourage the revenue models that could sustain application development
- Over half experience burnout, yet the ecosystem treats this as individual failure rather than systemic dysfunction

06.

TOWARD SUSTAINABLE PERMISSIONLESSNESS

Concrete recommendations for creating support structures: team-based funding, extended renewal cycles, administrative infrastructure, mental health resources, and transition pathways that maintain engagement beyond direct development.

The opportunity is clear: By building human support systems that match our technical infrastructure, freedom tech can fulfill its promise of sustainable, decentralized development — maintaining permissionlessness while ending the tyranny.

Study overview

Open Source Software (OSS) is foundational to our global digital infrastructure. OSS promises new modes of work that transcend corporate constraints — collaborative development beyond institutional boundaries, creative freedom without hierarchical control. In reality, however, open source development is largely beholden to either unpaid volunteer work or corporate employment. This leaves critical infrastructure vulnerable to both burnout and institutional capture.

Bitcoin introduced a new possibility for open source: by creating a new form of digital money, it also creates new capacity to fund its development. The Bitcoin ecosystem, including Nostr as its primary decentralized communication layer, now supports hundreds of developers through an expanding grant landscape, enabling them to work full-time on OSS projects without institutional affiliation. For the first time, the original OSS vision — sustainable, independent development — seems within reach.

Yet this arrangement is still treated as a rarity, rather than the radical reimagining of work that it could be. Without institutional support, grant-funded OSS developers are expected to navigate engineering issues, project management, and community building on their own. We know little about how these developers work, nor how to support them. If OSS is to deliver on its promise to decentralize the workforce, then we need to treat these developers' experiences as a primary way of working, rather than as the exception.

This pilot study addresses a foundational question: **How do full-time, grant-funded, institutionally unaffiliated developers in the Bitcoin and Bitcoin-adjacent (i.e. Nostr) ecosystem work – and what do they need to sustainably perform their role?**

Between March and May 2025, we interviewed 26 Bitcoin and Nostr developers who had worked full-time on grant-funded projects for at least 12 months. Through semi-structured interviews, we explored:



Motivations

What drives developers to OSS, and how do these motivations evolve? How do motivations and incentives differ in a grant-funded versus full-time employment context?



Day-to-day work

How do open source developers structure and experience their daily work life? What does their typical day and environment look like?



Sustainability

What does sustainability mean to open source developers, and what financial and non-financial factors support or threaten it? What enables long-term contribution versus burnout and departure?



Constraints

What structural challenges prevent sustainable development? Are there practical barriers that can be addressed by projects or their funders?

Our analysis revealed a central paradox:



The very values and processes that attract developers to the Bitcoin and Nostr ecosystems become the source of their most persistent challenges. Permissionlessness — the core principle of Bitcoin — creates isolation, burnout, and unsustainable work patterns when applied to human systems.

We focused on Bitcoin and Nostr as critical infrastructure for financial sovereignty and free speech — software that must remain free from institutional lock-in. As these systems approach critical mass, their development depends on individuals navigating unsustainable working conditions. Without addressing these systemic challenges, we risk losing the people building tools for human freedom.

While our findings emerge from the freedom tech ecosystem, they apply to any open source ecosystem seeking to support full-time, independent contributors and decentralized development. This study lays the groundwork for a shared understanding of how these developers work and what they need — providing insights that can inform the development of tools, funding programs, and support structures.

Methodology

Study Design

- Comprehensive literature review of OSS sustainability, developer experience, and burnout research
- Qualitative approach using semi-structured interviews
- Two-step inductive coding analysis
- Focus on capturing social, ideological, and contextual factors

Participant Selection

- 26 open source developers
- Minimum 12 months grant-funded full-time experience (current or previous)
- Recruited through direct outreach and open call through Waye's channels
- Strategic sampling for diversity (geography, experience, project type)

Data Collection

- Conducted between March-May 2025
- 45-60 minute remote interviews
- Open-ended format encouraging reflection
- All participants discussed their grant-funded experience regardless of current employment status

Scope and Limitations

- Focused on Bitcoin and Nostr as interconnected freedom technologies
- Sample size appropriate for qualitative depth, not statistical generalization
- Yet the consistency of experiences across diverse participants suggests broader relevance for decentralized development ecosystems

Demographics at a glance



- We interviewed participants from 10+ countries, spanning 5 continents.
- However, over half of our interviewees came from North America and Europe.
- Two participants chose not to disclose their location.

Experience levels



New contributors (<3 years)
dominate at 42.3%, indicating healthy ecosystem growth.



Mid-level developers (3-6 years)
are evenly distributed, suggesting no clear specialization pathway.



Senior developers (6+ years)
concentrate in infrastructure and applications, not protocol work.

Grant-funded tenure

- 73% of the contributors are currently grant-funded, while 27% have transitioned to employment or independent projects in the ecosystem.
- Among all participants, 69% have been in grant-funded roles for 2 years or less, while a quarter have sustained funding for 2-5 years and only one participant has been grant-funded for over 5 years.
- Funding was primarily provided by OpenSats, the Human Rights Foundation (HRF), and Btrust, although additional sources were mentioned.

Ecosystem distribution



76.9%
work on Bitcoin

23.1%
on Nostr.

Nostr developers cluster primarily in applications.

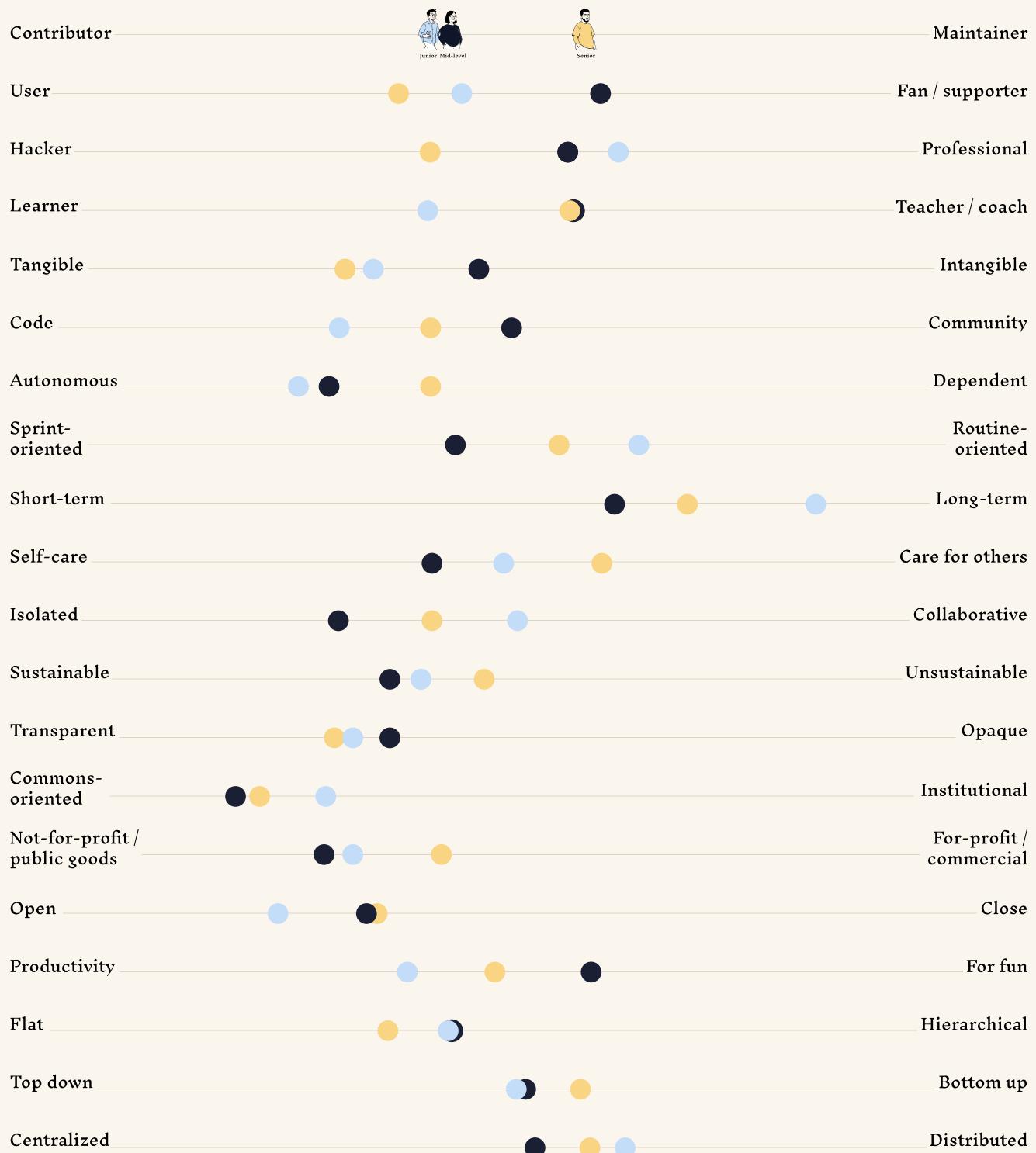
Project focus

- 38.5% focus on applications vs 30.8% on core protocol.
- Core development dominates in the Bitcoin ecosystem.
- Application work is evenly distributed between the Bitcoin and Nostr ecosystems.
- This mirrors the ecosystem's maturation: infrastructure exists, user-facing tools are now needed.
- Infrastructure work (19.2%) appears to be the domain of either newcomers or veterans, with no middle ground.
- In our sample, no expert contributors worked on core protocol development.

Top level analysis:
**Navigating the paradoxes of OSS
 freedom tech development**

Before starting with the open interviews, we asked participants to rate on a scale between 1 and 10 how close they saw themselves – in their roles, their work processes and environment, and their projects' organizational structures – in relation to two opposite terms (where 1 is the closest to the first term, and 10 is closest to the second term).

Here are the results, highlighting common patterns and strongest polarizations.



Experience evolution patterns

ROLE IDENTITY VARIES WITH PROJECT FOCUS AND EXPERIENCE:

Core devs see themselves more as contributors, while app developers as maintainers. More experienced devs embrace the hacker identity, while newcomers see their roles as more professional – especially those working on core infrastructure.

WORK MOTIVATION EVOLUTION:

In their work, contributors emphasize productivity as much as fun. The more the experience, the more work becomes about having fun. As an experienced dev observed, “being productive is fun.”

IDEALISM TO PRAGMATISM:

New contributors are most long-term oriented, and have strongest public goods focus. As contributors gain experience, they become more realistic about openness, time horizons, and commercial realities.

THE CARE PARADOX:

New and expert contributors focus more on code, while the 3-6 year group is more community-oriented, bridging technical and social work. Expert contributors also report the highest scores on caring for others (collaborators, community, people outside work), suggesting they channel community care through technical development, which may contribute to their unsustainable work patterns.

Project focus differences

WORK ENVIRONMENT:

Participants generally agree on the open and transparent nature of their work environments, but app developers acknowledge they have more centralized and top-down decision making approaches — often because they are the only people working on a project.

AUTONOMOUS AND ISOLATED WORK STYLES:

Nearly all contributors have an autonomous work style, which is especially isolated for core contributors.

COMMERCIAL PRESSURE:

App developers recognize their projects to be more commercial-leaning due to user-facing sustainability needs.

Core findings:

The tyranny of permissionlessness

The paradoxes revealed in our opening exercise — between commons and commerce, sustainability and experience, autonomy and isolation — all point to a deeper structural tension, revealed by our interviews.

Permissionlessness — the defining principle of Bitcoin and the broader OSS ecosystem — becomes oppressive when applied to human work systems.

We call this:



"THE TYRANNY OF
PERMISSIONLESSNESS"

If Jo Freeman's tyranny of structurelessness (1970) spoke to the invisible power dynamics in horizontal collectives, and Nathan Schneider's tyranny of openness (2021) addressed how transparency masks exploitation in peer production, tyranny of permissionlessness reveals how the promise of total autonomy becomes total responsibility.

In technical systems, permissionlessness enables innovation and decentralized participation by removing gatekeepers — anyone can transmit data packets, build websites using HTTP, or contribute to and modify open source code by following protocol rules (Nabben and Zargham 2022). But when extended to human labor systems, this same design principle creates overwhelming choice without guidance. The absence of gatekeepers means absence of guides; freedom from oversight means freedom from support; the right to contribute becomes the responsibility to self-manage everything.

As our paradox exercise showed, this tension intensifies with experience: senior developers report higher burnout while caring more for others, embrace "fun" because productivity alone cannot sustain them, and become pragmatic about commercial realities they initially resisted. The tyranny doesn't diminish with time — it compounds.

This tyranny emerges at the confluence of four interconnected dimensions that shape the developer experience:

- **Ideological factors:** how freedom as mission becomes freedom as burden
- **Structural factors:** how permissionless architecture creates isolated work
- **Human factors:** how self-management becomes self-exploitation
- **Institutional factors:** how grant systems reinforce individual struggles

Below we describe these tensions. Each dimension shows how the very features that attract contributors to the space — mission, openness, autonomy — become the primary causes of burnout and unsustainable work patterns.

Free from authority, free to burn out

THE TENSION:

The ideals of decentralization and freedom from institutional capture attract developers and sustain motivation. Yet this same ideological commitment accelerates burnout: the social mission justifies self-exploitation, unlimited freedom becomes paralyzing, and cultural rigidity alienates diverse perspectives. The very values that make the work meaningful become the mechanisms of burnout, leaving developers caught between their commitment to freedom technology and their own sustainability.

YES, PEOPLE ARE "IN FOR THE TECH" – BUT ALSO FOR FREEDOM:

Nearly all interviewees joined the ecosystem not only for a fascination with the technology and the prospect of working with top engineers, but also for the ideals of freedom and decentralization embodied by the Bitcoin and Nostr ecosystem. Participants working for over two years on their grant-funded projects report gaining greater awareness of the humanitarian goals of Bitcoin and Nostr, and a desire to engage with "big picture" thinking. 3/4 of participants explicitly described the meaningfulness of their work as a key motivator — often citing it to justify routines and patterns they acknowledged as unsustainable.



I have a better understanding of the type of fundamental problems that it can solve from a more humanitarian perspective, and I came far more interested in it because of the technical details. You know, how bitcoiners say "I'm in for the tech", I came in for much more leaning towards that and the curiosity that transpired and ... now I will say that I have a far broader view and a much more humanitarian goal in sight than just a technical one.

- Anonymous Contributor

It's still the best work I've found so far. The autonomy is great in a way, and the work is meaningful, and ... the shared values in the Nostr and Bitcoin community and the freedom technology and better future we are pursuing, it's quite privileged in many ways, to have a work like this feels so meaningful. You get even paid for it.

- Anonymous Contributor



PERMISSIONLESSNESS ATTRACTS, THEN OVERWHELMs:

The no-barrier ethos draws contributors across all experience levels — anyone can build without asking permission. Yet permissionlessness as an operating principle means no schedules, no managers, no external structure. Over half of participants appreciate this flexibility to choose what to work on and when, yet these are precisely the areas where they report the most challenges: nearly a third struggle with boundaries and a quarter with prioritizing tasks. The open-ended nature that initially attracts leaves many, particularly newer contributors, paralyzed by infinite possibilities and no clear direction.



I guess that's always been the thing that's drawn me to Bitcoin, fact that I can build this peer-to-peer transaction system on a social network, and I don't have to ask permission from anyone. So I definitely like that aspect of just not having someone telling me that I can or can't do something, and I can just do it.

- Anonymous Contributor



It's nice to work for yourself, to have that freedom to do that. But then, of course, the curse is always that no one else is going to do it. So I've got to do it.

- Anonymous Contributor



I can work whenever I want' translates to 'I can not work whenever I want', right? And so I had some trouble with that. Like, the whole day, I don't do anything, and then in the evening, ideas would pop in my head and I work 7pm to 10pm, that's not sustainable.

- Anonymous Contributor



I would love to be able to have a stricter routine. But on the other hand, it's great the fact that I don't need to have one.

- Anonymous Contributor

EXPERIENCE ENABLES, THEN EXHAUSTS

As contributors gain experience, they develop deeper clarity about Bitcoin's humanitarian mission — but not about sustainable work practices. Instead of learning healthier routines, experienced contributors adapt to cycles of intense work and burnout, driven by the urgency of building critical freedom infrastructure. Over half of participants report experiencing burnout at least once in their professional life, with 3 citing it as a primary reason for leaving their grant-funded position. Yet it's senior developers who normalize it most: for them, burnout is "the normal state of affairs." The sacrificial ethos of OSS, compounded by freedom tech's humanitarian stakes, transforms exhaustion from exception to expectation.



There's a hell of things to build, and I think a lot of us feel a sense of urgency, because we know that if traditional financial rails fail ... people will seek out alternatives, and it's kind of important that those alternatives work. So I think there is kind of a sense of urgency amongst a lot of the people, like myself, who are lucky enough to stumble across this technology. ... There's a bunch of tools which you need to build to realize that fallback if everything else breaks

- Anonymous Contributor



I think it was a big, long burnout. For a very long time, I just didn't know how to talk about it. And, wow, now I know and see where I am at.

- Anonymous Contributor



I think it's working in free and open source. Actually, I suppose I'm really speaking for myself and the sorts of people I work with, but it's very altruistic and full of personal sacrifice, and you really are working on it because you see the greater good in the thing you're building.

- Anonymous Contributor

CULTURAL FRICTIONS UNSETTLE COMMITMENT:

A small but notable group of contributors (4 out of 26) reported cultural tensions with the wider Bitcoin community — citing a lack of critical reflection, ideological rigidity, and a preference for hype over substance. Some described the culture as “cult-like” or toxic, where performative enthusiasm overshadows technical work. In a few cases, developers reported distancing themselves from the community as a coping strategy. Despite these challenges, contributors expressed continued commitment to Bitcoin as a technical and political project, while navigating the community on their own terms.



I guess every day I hate Bitcoin because it's also full of assholes, and it has its share of problems and discourse, so it feels like every day is a decision to work on it again, but if I'm being realistic, I don't see anything better that I could do with my time, and it's rewarding work.

- Anonymous Contributor



I think the Bitcoin community itself has these cult-like tendencies which make it, I think, very demoralizing for people who are in situations similar to mine or the situation I was in ... So it just seems like there's a lot more enthusiasm for cheerleading Michael Saylor and the crap he spouts, as opposed to the people who are actually trying to make tangible, positive change in this thing, because it's not ready. It's not. Like there's still so much work to be done.

- Anonymous Contributor

Collaborating alone

THE TENSION:

OSS promises collaborative development, peer learning, and community support. In reality, contributors work primarily in isolation — physically alone in remote areas to reduce costs, professionally uncertain without feedback, and struggling to maintain motivation amidst the uncertainty of their work environment. The infrastructure for human connection exists mainly through conferences (considered “taxing” by some) rather than sustained collaboration, leaving developers to self-manage everything from career progression to daily motivation

EXCITED TO COLLABORATE, BUT WORKING IN ISOLATION

Contributors are drawn by the prospect of collaborating with top engineers they respect, yet end up working mostly in isolation. 8 of 26 participants reported feeling isolated working alone — for two, this isolation was the primary reason for leaving their grant-funded positions. Several participants reported living in small towns or rural areas to reduce living expenses; however, that further adds to the sense of isolation as developers don’t have occasions to meet up in person. For those that can, joining a coworking space seems to improve the day-to-day routine.



There wasn't a framework for collaboration, for newcomers. And I was in a space where, honestly, I felt like I could have done more if I was collaborating with other contributors. I tried here and there, but then I couldn't get a mentor.

- Anonymous Contributor



The lack of structure, the lack of support from other, more experienced engineers and then just the sort of isolation, they're all different aspects of the same thing in a way.

- Anonymous Contributor



Recently, I decided to go to a coworking space. ... And so I think that was an instant improvement, you feel much better, because in your coming back, you're like, okay, I went somewhere, did something, I'm coming back. Remote was always overrated

- Anonymous Contributor

GROWING WITHOUT GUIDANCE

Contributors join to grow professionally through peer learning, but struggle with a chronic lack of consistent feedback. Around 40% of participants reported struggling with feedback — either in receiving it, offering it, or both. This is particularly acute for newer developers: they need feedback most but feel least entitled to ask for it, assuming others are too busy or that they haven't "earned" the right to it. This creates a persistent sense of uncertainty that weighs on developers' day-to-day work — making it harder to assess progress, build confidence, or know when to ask for help. Despite only 3 interviewees having access to formal mentoring, the majority recognized its vital importance for navigation and retention.



There was always some stress in the back of my mind of not doing enough, because it's hard to tell what is enough. There is no KPI. Nobody even tells me if I'm doing good or not. There is this recognition, but it's mostly people who have no idea what I'm doing.

- Anonymous Contributor



I think because they [project maintainers] don't know who you are at that point, they can't tell if you're serious or not, they don't like to waste their time. So I don't blame them that they ignored me. But I think getting that feedback or external help is probably the biggest challenge. And if you had somebody who was just there mentoring you and checking out your stuff, it really helps.

- Anonymous Contributor



For reviewing PRs, I know how it feels when you write a PR and no one looks into it. So I know that even if I just spend some time reading code, and then I tell people, oh, it's all good, I know it's going to help with, first of all with their motivation, but also with the fact that if enough people say, Oh, it's good, then it gets merged.

- Anonymous Contributor



In a for profit, you get these performance reviews, you know what people think of your work. But in open source, it's not like that, and I was a little bit shy or embarrassed to go out and solicit that and ask somebody if they think I'm doing good job or not. And it's no one's job or responsibility to do that assessment of me either. So that part, there was a lot of uncertainty.

- Anonymous Contributor

NO CLEAR CAREER PATHWAYS BEYOND CYCLING THROUGH GRANTS

Unlike traditional employment with defined progression (junior → senior → lead), grant-funded OSS offers no structured advancement. Contributors are excited to deepen their expertise or expand their project scope, but there's no framework for evolving responsibilities or recognition. The implicit "career path" often means either perpetual grant renewals, transitioning to a company, or starting one's own project — but these transitions happen by necessity rather than design, leaving mid-career developers particularly unclear about their professional future.



I'm probably going to do this forever as long as I possibly can. And the more important thing is: can I do it in a way that is not going to be a total financial strain constantly and be really annoying.

- Anonymous Contributor



Since it's an open source project, and not a company, it's maybe sometimes a bit hard to feel like you belong. So for example, I use the title bitcoin core developer if I go to conferences, but at the same time, I feel a bit shy about it, like, no one told me you're a bitcoin core developer.

- Anonymous Contributor

PREDICTABILITY OF MOTIVATION IN UNPREDICTABLE ENVIRONMENT

Half of the interviewees struggle with maintaining consistent motivation in their unpredictable work environment, while a quarter experienced ups and downs in energy depending on the task and context, but not motivation. For two contributors, the shifts in motivation ("It was research, then it was ideology, then it was making money, then it was back ideology") were a key determining factor for departure. Contributors develop various 'self-help' strategies to manage their motivational swings, including walks, exercise, good sleep, envisioning the next day, and structured planning templates like Waye's AIR tool.



Sometimes you're just feeling that you're not doing enough. You want to do so much, but then you don't do it, and then you get into this self critical phase, and that negatively impacts till I get out of it. So it's always like waves

- Anonymous Contributor



Some days, I wouldn't feel very motivated and wouldn't get much done, and because there wasn't really any pressure — you know, I work very well under pressure — and so that was a little bit of a struggle where I could just not get anything done for a day or a couple days, and it wouldn't matter, really, and so it was hard to hit the same level of output that I would hit, like when I was working at [The Company] where it was very high pressure, with very strict deadlines.

- Anonymous Contributor



It can be quite bipolar, and I don't know if this is just a personal thing, but you have periods where you're super enthusiastic and productive, and you can't focus on anything else. Just want to build the thing. And then you have periods where you just feel like, underappreciated, and it's why the fuck are you spending all your time working on this thing? So, yeah, it does fluctuate.

- Anonymous Contributor



I have ups and downs, but not in motivation. I think the motivation is always there. I think I put a lot of pressure on myself to just to do the thing and do it really well. I always feel like I'm not going fast enough, and that I'm not doing it well enough, which I think is standard in this business, for most of us.

- Anonymous Contributor

IRL GATHERINGS BEYOND CONFERENCES

While conferences provide community connection, many find them taxing — the travel, preparation, and socializing drain energy rather than restore it. Some experienced contributors report attending 8-10 conferences yearly, which they consider excessive. Among the conferences that contributors mentioned appreciating the most are: Bitcoin Baltics, Honeybadger, Bitcoin++, Africa Bitcoin Conference. More valuable are team offsites and contributor retreats that combine focused work with social activities, exercise, and relationship building. These smaller gatherings address the real need: not knowledge sharing but sustained collaboration. As one participant noted, conferences help "remind that other people exist," but it's the deeper working sessions that make distributed work sustainable.



Conferences kind of help you connect with people, and especially when you work mostly by yourself at home, maybe on your own project, not collaborating with others so much, so conferences help you get connected with a community and keep you real and remind that other people exist.

- Anonymous Contributor



I really like going on stage and just sharing my experience, but it takes a lot of energy for me to do that, just all the traveling, etc. And then I also love the socializing part. ... because it gives me this sense of community. But then I noticed that if I go to a conference and none of my friends are there, then I'm going to feel a bit like: it wasn't really worth it.

- Anonymous Contributor

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The worst was 2023 I think, which was like 10 conferences, and I like going around the world. It was too much though. Like, ok, I need to get back to work.

- Anonymous Contributor

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Usually, conferences are I find kind of draining. I need to prepare. I, you know, prepare the talks and and I usually find them more taxing than uplifting

- Anonymous Contributor

The solopreneur burden

THE TENSION:

The OSS ecosystem has already undergone major structural shifts, from distributed communities toward a model where solo maintainers carry outsized responsibility ([Eghbal 2020](#)). For freedom tech developers, this burden is amplified by the unique demands of the Bitcoin/Nostr ecosystem. Contributors must simultaneously be visionary builders and pragmatic managers, technical experts and community leaders, creative innovators and maintenance workers — all while navigating the additional complexities of Bitcoin payments, tax implications, and the high-stakes nature of financial infrastructure. As projects mature, the most creative contributors find themselves trapped between their desire to build and innovate and the growing responsibility to maintain, manage, and support what they've created. Developers must individually shoulder technical, administrative, and social responsibilities that would typically be distributed across teams in traditional organizations.

TAKING ON MULTIPLE ROLES IS EXCITING AND, AT THE SAME TIME, EXHAUSTING

Contributing to OSS involves a much broader skill set than traditional software development, requiring research, technical writing, communication, and project management alongside coding. 6 out of 26 contributors described this variety as both exciting and exhausting — they appreciate the opportunity to grow diverse skills in a value-aligned environment, but struggle without adequate support structures. Unlike working at tech companies where developers primarily write code, OSS contributors spend significant time on research and consensus-building. Research involves substantial invisible costs that contributors must shoulder independently, while 6 contributors reported to struggle with project management and organizing their work without support structures.

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It was very different than working at an app company, [where] you're writing a lot of lines of code. Whereas in Bitcoin Core, sometimes I talk for three weeks about like a three line change of code and so you do a lot of technical writing, thinking and technical writing and communication.

- Anonymous Contributor

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At the moment, ... there are better places to enjoy programming than Bitcoin, because the project management is very poor, and it's just a lot of struggle to get work done, to organize, to get review. So if I wanted to do research, I would probably still do something different, something painless

- Anonymous Contributor

TRADEOFFS BETWEEN CREATIVITY AND MANAGEMENT

As OSS projects mature, contributors face an inevitable shift from creative development to maintenance and contributor management. 5 out of 26 contributors reported struggling with tradeoffs between being creative and managing other contributors. This transition is particularly challenging for experienced developers who must give up hands-on building and innovating to review pull requests, train new contributors, and meet community expectations to maintain a project. Contributors find themselves spending more time checking others' implementations than creating, leading to frustration and boredom among those who thrive on innovation.

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It's a struggle for even me and some of our contributors, the balance between reviewing pull requests from open source contributors who just come along, and also just trying to get your own work done. It's really hard to do those two things at the same time, and you're trying to focus on the work that you're just trying to do then. But then again, you want to encourage more people to contribute to the project. ... But what you really want is them to join and then become autonomous. To do that, you have to train them. But you're also just like, I don't have time to do that. ... So it's this constant battle between balancing your own work and trying to review contributors and help contributors.

- Anonymous Contributor

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We had a whole year of this creative process, and it was amazing, but I think right now it's kind of boring, because I'm not creating anymore, I just checking that every contributor is implementing. It's boring for me just to check and maintain.

- Anonymous Contributor

PROS AND CONS OF BITCOIN PAYMENTS

Grants also bring hidden labor. In addition to preparing applications, contributors must often manage incoming payments (frequently in BTC) and handle related responsibilities like healthcare or taxes independently. Contributors appreciate being paid in BTC ("it feels right") but at the same time this administrative overhead can disproportionately impact those with less experience or external support. In one case, the lack of healthcare and benefit was one of the key reasons for departure from the grant ecosystem.

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Taxes were a shitshow

- Anonymous Contributor

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All the grants are paid in Bitcoin, which is great. I like that. It's a big experiment. See how this works. I am not an accountant. Luckily, I have one that understands Bitcoin, and how that is actually going to work out long term. I'm just sweeping that under the rug, either let the accountant figure it out or I'll figure it out later. That gives me some anxiety. ... Like, am I paying more taxes? I really can't stand that side of business.

- Anonymous Contributor

Autonomous over projects, but constrained by the funding structure

THE TENSION:

While financial compensation is not a primary motivator, sustainability remains elusive for most contributors. The expanding funding ecosystem has enabled many developers to enter and remain in the space ([1A1z 2024](#)) — but the structure of grants often undermines the very autonomy it is meant to support. Yearly renewals, individual funding models, and the opaque social aspects of grants create perverse incentives for people to "write for the grant" rather than pursue long-term technical visions. While most grants are theoretically open to all, success often

depends on informal networks and social capital. Additionally, hands-off funding approaches leave contributors navigating administrative burdens and isolation without adequate support structures.

SEARCHING FOR SUSTAINABILITY AMIDST GENERALIZED UNPREDICTABILITY

16/26 participants described ongoing difficulties navigating financial sustainability. For most, compensation itself is not the issue — it's predictability. Annual cycles of reapplication introduce stress and distraction, especially for contributors whose mother tongue is not English. 10 contributors explicitly identified long-term sustainability as a priority, yet only a few felt they had a stable path toward achieving it.



It's hard, because I really did love working on open source stuff and having the freedom to do it, I felt really lucky to have that. But just the financial instability and not knowing if I would get renewed, and just feeling a little isolated were probably the three main reasons I decided to change.

- Anonymous Contributor



I don't think that it's 100% sustainable. I'm not sure how that can be done. I think some people actually do this 100% like all the time, but I'm not sure it's that sustainable. Like, having to write a new grant every year is very, very stressful.

- Anonymous Contributor

BITCOIN IS FOREVER, GRANTS FOR A YEAR ONLY

Contributors define sustainability in terms of decades and view OSS as a life-long commitment, even while recognizing role flexibility within the ecosystem. For all contributors, "long-term" means at least 5 years, with a majority mentioning 10 years as their measure of long-term, and some equating it to the length of their career or beyond. 5/26 interviewees explicitly stated that they couldn't imagine going back to a "normal job" — Bitcoin is for life. Despite this enduring commitment, funding mechanisms remain out of sync. While opportunities for support have grown, most grants operate on short, annual cycles that fail to reflect contributors' long-term orientation. The renewal process is universally stressful, impacting negatively both long-term thinking and daily focus — demanding at least two months of preparation prior to each deadline and proving especially challenging for non-native English speakers.



Every year, you have to apply for a new grant, so that whole process is stressful. Or generally, not having to worry about your grant organization can allow you to be a whole lot more free with what you work on, because if you're pressured to deliver results, you might avoid certain projects, like multi-year projects, or they might be difficult to get started

- Anonymous Contributor



If I'm looking for grants, it's very hard. There's so much admin work, so even when I'm trying to work, I keep thinking of my proposal, which I have to write, and I've procrastinated and I feel bad for not doing the grant proposal. So all those admin stuff do affect my productivity a lot, especially the renewal grant every year.

- Anonymous Contributor

INDIVIDUAL GRANTS VS TEAM REQUIREMENTS

Particularly for contributors working on self-directed projects, individual grant structures often fall short of what's needed to scale or sustain their work. While grants may support a single developer, they are not suited for the requirements of teams working on projects. The lack of team-based funding models limits long-term planning and ability to focus as individual maintainers need to take on roles beyond development — including grant writing, onboarding, and community management. In one case, a participant chose to use the grant to pay his team while complementing OSS work with a traditional business.



The very first thing is that I'm currently working entirely alone on a project that could never be completed by me alone, and I have to try to convince other people of what I'm trying to do, so that I think will be a big challenge and getting to be on board with the vision and contributing to it.

- Anonymous Contributor



We're pretty underfunded. I mean, we have our grant, which I use to pay developers who work on [the project], but I myself don't get paid, so I need to work to generate a fair income.

- Anonymous Contributor



This can't be just me, so I need other people to get grants as well. So then it's like, can I help them with that? Is that even how this works? Like, figuring out how to get other maintainers responsible ... how to get them committed longer term, which usually means money.

- Anonymous Contributor



If somebody was like: Okay, wave a magic wand and you want this project to just succeed way better, what are the things you need? Pretty top of the list is just money, because I know I can't scale my hours any further, so the only thing I can do is scale the size of the team. And I feel very confident that I'd be able to do that well because of my background, but the economic resource isn't there. And so, I think that's the one thing where I do feel constrained. You know, how do I make this financially sustainable on a broader scale, not just me.

- Anonymous Contributor

REALIZING YOUR VISION VS WORKING FOR THE GRANT

The individual and short-term structure of grants gives rise to perverse incentives, by which contributors will "write for the grant" instead of pursuing their visions, diverting time and attention from actual development work. The burden falls disproportionately on newer contributors, who may spend a month or more crafting proposals compared to the 10 days required by established experts. This creates a cycle where those who most need funding face the highest barriers to obtaining it, while also incentivizing alignment with perceived funder priorities rather than technical vision.



We need to reapply for the grant, and for grants, this is the same thing, which I suppose you have in academia: often people will write for the grant. So if they see that a certain area in Bitcoin that is getting a lot of money, say, for example, Ecash, ... then people will propose a whole bunch of grants for Ecash projects, ... even if their heart's not entirely in it, in order to secure that funding. I tend not to do that, and I think sometimes that shoots ourselves in the foot a little bit when it comes to getting grant money I've always been kind of hesitant when it comes to getting grants, because I feel often, a lot of the people who issue grants have their own agendas.

- Anonymous Contributor



It's kind of a silly thing to complain about, because it's not that hard considering the fact that they're giving you money. But it definitely does create a little bit of a compromising thing ... Sometimes I work on things that I think people who are reviewing the applications are going to think are a good idea — which they are — but I'll shift the priorities of things. There's a little bit of an extra pressure, which may be a good thing sometimes, but it's definitely a new skill that I've had to learn.

- Anonymous Contributor

PERMISSIONLESS ENTRY: OPEN BUT OPAQUE

While grant programs are presented as open and permissionless, many participants noted that success often depends on informal connections and social capital. While the vast majority of contributors find the yearly renewal stressful, 3 participants (particularly the most expert and visible ones) had never submitted a formal application, instead receiving grants through introductions or past reputations.



The reality of grants is that there's a social aspect to it. You have to be somewhat known, because it's people making these decisions. So you have to lobby on your behalf and do that kind of outreach to make sure that the granting organizations understand the value of your project, and that, I guess in my case, they understand my need for these grants. Because I don't sell, so I don't have income from that direction. And I want to keep it that way. That's this sort of decentralized ideal there. That's a challenge, like getting grants and maintaining that clear perception with the granting organizations that I need it, that it's important.

- Anonymous Contributor



Long way to answer about writing grants, but unfortunately, it's all tied in with these people and these personalities and these incentives that are part of these organizations. There's no way to untangle them and that's been one of the most important things just for my mental well being, I can't just sit here and be angry and fuel this frustration over it.

- Anonymous Contributor

HANDS-OFF FUNDERS: AUTONOMOUS BUT ABANDONED

10/26 contributors have voiced concerns that granting organizations could do more to support their work. This is not so much in terms of compensation, but in providing additional support structures that would help developers navigate the uncertainty of daily work life. Among the aspects where contributors feel have been lacking support are: mentoring, guidance with admin stuff (including taxes, visas etc.), and tooling (one contributor wished for a supercomputer made available for the grantees).



I think if I had stayed there from the beginning, when there was somebody more experienced, who I was checking in with regularly, and I could have brought all these things that came up to this person, and they would have helped me figure out what I could do ... And in retrospect, I should have done more to create that, instead of just needing it to be handed to me. But you know, if the funder had invested more in creating support and structure, that definitely would have been significantly helpful.

- Anonymous Contributor



One of the things that has been lacking, I think, with these granting organizations is this community of people solving these problems, ... like the admin stuff, like we were talking about with taxes and things like that. We're obviously all having the same problems. So, yeah, we can help one another figure it out.

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- Anonymous Contributor

Strategies: 4 approaches to the chaos of day to day work

The combination of openness and permissionless ethos, unstructured work environment, lack of support structures, and short-term funding cycles results in a day-to-day routine marked by **chaos**, to which contributors relate in different ways.



It's not super unstructured, but it is still kind of chaotic, because no one's getting really paid, and people are just dropping in and out. So it's a mix of chaos and organized.

- Anonymous Contributor



it was, it was a little bit all over the place, because there was no structure — I don't have any meetings, I don't have any sprints or accountability. So some days weren't very productive. Other it might be late night coding, I'd get the inspiration and go to 2, 3am coding. It was very chaotic ... it was a bit of a struggle to figure out a more stable pattern, because there's no structure at all.

- Anonymous Contributor



I just try to have enough things that if I'm bored or I feel stuck, I can occupy myself with something else, but not too many that I don't like abandon something for weeks, but basically I use chaos to keep things interesting.

- Anonymous Contributor

Through the interviews, we can identify four distinct approaches to navigating the "beautiful chaos" of day-to-day OSS work based on focus area (core infrastructure vs app development) and OS experience:

Junior core dev: lost in the protocol

KEY MOTIVATORS VS LIVED REALITY:

Newer contributors working on core infrastructure are particularly attracted by the endless opportunities the ecosystem offers for personal and professional growth but struggle with self-management, isolation and pressure to deliver in a low feedback environment.



ENTRY PATHWAYS:

Most contributors joined the ecosystem through fellowships or university connections. Some of them had less than 1 year of OS experience prior to their grant-funded positions.

ROUTINE:

Newer core devs tend to have more structured routines (focus tracking, productivity strategies, tool minimization), which helps them deal with the uncertainty of everyday work.

KEY CHALLENGES:

- Growing without guidance [Structural]
- Excited to collaborate, but working in isolation [Structural]
- Permissionless entry: open but opaque [Institutional]
- Bitcoin is forever, grants for a year only [Institutional]
- Hands-off funders: autonomous but abandoned [Institutional]

“

When I started working on grants for the first time, I found it very hard. No one's giving me the question, how should I form the answer? You have to find your own questions. So there was a period in time when I felt like I didn't know what I was doing.

- Anonymous Contributor

”

've been doing the AIR sessions. ... I do that every week, so that next week I know exactly what I'm supposed to do, because there's no one telling me what to do.

- Anonymous Contributor

“

I knew one person at the beginning. It's probably one of the biggest reasons why I lasted. You know, I survived last year.

- Anonymous Contributor

Senior core dev: looking beyond the protocol

KEY MOTIVATORS VS LIVED REALITY:

Interestingly, in our sample there were no senior core contributors. Of the experienced developers we interviewed working on core infrastructure (3-6 years in OS), only one was actively working in a grant-funded role. The others had moved on to found their own projects or were hired by companies in the ecosystem. One contributor reported leaving their role due to burnout. This aligns with the broader ecosystem pattern: at present, there are only 5 active Bitcoin Core maintainers and 41 active Core Developers total ([1A1z 2024](#)) — an extremely small and concentrated space despite the broader ecosystem's growth.



DEPARTURE PATTERNS:

- Contributors navigate years of protocol work without clear impact metrics, until the motivation that sustained them fades, leading to what one contributor described as a “fog of motivation.”
- Expertise in core development paradoxically leads away from core development: the skills gained — protocol knowledge, ecosystem understanding — makes contributors too valuable (or too burned out) to remain in grant-funded roles.
- This suggests that grant-funded core development may be inherently transitional, a launching pad rather than a destination for experienced developers.

KEY CHALLENGES:

- Predictability of motivation in unpredictable environment [Institutional]
- The amorphous scope of OSS contribution [Human]
- Realizing your vision vs working for the grant [Institutional]
- No clear career pathways beyond cycling through grants [Structural]

“

At some point, I stopped being able to believe that I could just build a better technology and trust that it would be used well, and [became] more focused on how that technology is entering the world.

- Anonymous Contributor

”

[Motivation] was all the things. It was research, then it was ideology, then it was making money, then it was back to ideology. ... It was always hard to reflect on this, so it was always kind of foggy. ... I was working for many years, and I wish I spent more time thinking about meta questions about why I work than actually working. So if somebody had asked me more often, I would have a good answer by now, and maybe I would have quit earlier, or maybe I would just have enjoyed it better. ... I wish I did more thinking about this exact question at the time.

- Anonymous Contributor

“

Finding a problem, like some problem that is not too easy, not too hard, has a chance of being merged, has impact, like all these factors are just really hard to navigate, and I wish somebody told me what to do sometimes

- Anonymous Contributor

Junior app dev: pressure to build

KEY MOTIVATORS VS LIVED REALITY:

Similarly to junior core devs, contributors working on user-facing applications are attracted by the opportunities to work in an expanding value-aligned ecosystem, but also struggle with autonomous decision making and self-management, as well as the added tasks of working on a product (communication, recruiting and retaining volunteer contributors, scaling the project). The ideological commitment and community focus drives daily motivation, while adding pressure to deliver.



ENTRY PATHWAYS:

Contributors working on applications generally come from “flat careers” in tech startups, as one contributor described it, or from a hacker background. They enter the space by volunteering to projects with small tasks and eventually get funded through grants, in some cases to work on their own projects.

ROUTINE:

The immediate user feedback and tangible results of application development provide clearer direction and enable faster iteration cycles, creating a more structured feedback loop than protocol work. However, this user-facing focus comes with additional responsibilities: community management, user support, and contributor outreach expand developers' daily workload beyond pure technical tasks.

ENTRY PATHWAYS:

- Permissionlessness attracts, then overwhelms [Ideological]
- Individual grants vs team requirements [Institutional]
- Excited to collaborate, but working in isolation [Structural]
- The amorphous scope of OSS contribution [Human]

“

This is probably the most common thing you're gonna hear the whole time. I'm my own best asset and worst enemy in the sense that I'm highly motivated, I want to work on the thing, I like to think I'm fairly intelligent and can do good work, but I am limited strongly by the number of hours I can work. I'm learning on the job and trying to figure stuff out. And often it takes me longer than I feel like it should. I just have all the general failings of a human and so, I have to just keep reminding myself on a regular basis.

- Anonymous Contributor

”

Where I worked before, most times, at any slight inconvenience or slight roadblock, we usually jump on a call and resolve it. It's not like that in open source.

- Anonymous Contributor

“

I'm worried that before a certain threshold of success or momentum, if I get jaded, I'm thinking about the risk of being at the tip of the spear stopping, and everything else stopping.

- Anonymous Contributor

Senior app dev: “using chaos to keep things interesting”

KEY MOTIVATORS VS LIVED REALITY:

The humanitarian mission of the ecosystem drives daily engagement, but adds to the sense of urgency and feeling responsible for both users and volunteer contributors.

Contributors 'can't go back to a normal job,' yet they live in a state of constant burnout as they juggle technical development, community management, grant writing, and contributor retention.

ROUTINE:

- More experienced developers working on applications have learnt to navigate the chaos of OSS work, not through any particular strategy but by leaning into it — with one interviewee explicitly “using chaos to keep things interesting.”
- Often contributors simply keep a mental todo list of their next tasks and update it as things proceed. However, this mastery of chaos comes at a cost — the constant adaptation and lack of clear boundaries eventually leads to chronic burnout, which becomes normalized within the community.
- Unlike their protocol counterparts who work in isolation, they must coordinate multiple stakeholders and manage volunteer teams, adding further complexity to their already chaotic environment.
- User feedback provides an important validating factor and helps give direction to a project, while also adding further expectations for lead maintainers. Managing a team of volunteer contributors adds further psychological pressure, with maintainers feeling personally responsible for their contributors' experience.



ENTRY PATHWAYS:

- Permissionlessness attracts, then overwhelms [Ideological]
- Experience enables, then exhausts [Ideological]
- The invisibility of maintenance and management work [Human]
- The amorphous scope of OSS contribution [Human]
- Individual grants vs team requirements [Institutional]
- Bitcoin is forever, grants for a year only [Institutional]
- Permissionlessness attracts, then overwhelms [Ideological]

“

I'm not happy with the status quo, but I haven't found something that works better for me ... like time tracking, and then generate reports of exactly what I've done, setting very specific goals or fragmenting the day ... Or Tuesdays are only for this type of work stuff. But yeah, very, very, very quickly, it doesn't work.

- Anonymous Contributor

”

We do have a volunteer project manager. So we kind of go through different waves of being more organized ... But that's say 20% of the time, the other 80% is just kind of beautiful chaos that produces results.

- Anonymous Contributor

“

There is this funny thing. So if you build something, then there's an expectation for you to then maintain that thing. And for some brains, like my brain, I like building something and moving on to the next thing, but you can't really do that, because people then become dependent upon the thing working, so you end up having to maintain and then more and more of your time starts to be focused on maintaining projects. Some people just move on to the next thing. But I think a lot of us feel the responsibility to maintain those projects. So even if you're reluctantly doing it, often you find yourself maintaining a lot more than innovating and contributing and developing and building new stuff.

- Anonymous Contributor

”

We've got a team of four developers who are pretty much full time ..., and then you feel responsible. I mean, they've got lives, they don't get paid much because they're working on a project which they really love. So they're making sacrifices already ... And then all you can really do is being the person who's helping source those funds to keep them working on the project. You just feel a lot of responsibility, because they have kids, they have families, and they have responsibility.

- Anonymous Contributor

“

It's a lot different now than it was when we first started. It was kind of a toy prototype, and now it started to get a bit more serious, there's a lot more users, there's a lot more stakeholders, and people are expecting it to actually succeed.

- Anonymous Contributor

”

Everybody's burnt out. Everybody I work with is completely burnt out. ... everybody's in the same boat. So no, I think it's a problem beyond just me and a few other people. It's the normal set of state of affairs

- Anonymous Contributor

“

It's this constant battle between balancing your own work and trying to review contributors and help contributors. So that's probably one of the biggest challenges, and I struggle with that too, because sometimes I look and this guy's been waiting for four weeks for me to review his PR. I just haven't gotten to it yet, but I know. And then he goes away, and I'm like, Oh, I lost a potential contributor.

- Anonymous Contributor

”

I can easily find a job at a company. I mean, I don't have a problem or fear of not having a job. I have a problem, a fear of not working on Bitcoin.

- Anonymous Contributor

Beyond financial sustainability: The hidden costs of freedom tech development

The ecosystem is sustainable, the role may not be

TAKEAWAY

Contributors are confident in the sustainability of Bitcoin and in their individual career prospects in the wider ecosystem. However, this abundance mindset masks a critical vulnerability: without structures to transition contributors beyond core development while keeping them engaged, the ecosystem loses critical protocol knowledge rather than accumulating it.

INDIVIDUAL OPTIMISM AMIDST ROLE UNCERTAINTY

Contributors universally believe in Bitcoin's long-term sustainability while acknowledging that their own positions may be temporary, viewing grant-funded development as a strategic career phase rather than a permanent destination.



I don't worry too much, because I know that even if I lose the grants, I can get a job maybe in two months. So I'm very on the relaxed side. And half of it is my mentality, but another half is I feel like there's just a lot of money going around right now.

- Anonymous Contributor

The project was sustainable before I joined. I believe any project will be sustainable without any individual, anybody can go. So it's more like, how much the project helps me as a person?

- Anonymous Contributor



THE TWO-YEAR PATTERN MAY MASK A CRITICAL VULNERABILITY

As discussed at the beginning, 65% of participants had worked on their grant-funded roles for 2 years or less. This could either reflect the recent ecosystem's growth, or natural career progression, or indeed a sustainability challenge. However, contributors aren't panicking: they recognize that working on Bitcoin is a launchpad to other career opportunities in an expanding ecosystem. As one contributor (who had already left his grant-funded role) observed, it doesn't close any doors, it just opens them.



There's an endless amount of projects and things to work on. There's always more ways we can improve Bitcoin and lots of different types of projects, lots of communities and events and opportunities to network with people and connect with people, and a lot of different organizations that fund this kind of work. There are also a lot of opportunities for hybrid situations where you can use open source to boost your resume and be able to get opportunities to go back into working for a for profit company, or being able to found a company and then still work on open source on the side, and then you could go back into open source full time. So it doesn't really close any doors. It just opens doors. It seems very viable as a career path.

- Anonymous Contributor

KNOWLEDGE LEAVES WITH PEOPLE

Yet this individual resilience can mask a systemic risk. The ecosystem's health depends on retaining enough developers long enough to build deep protocol knowledge — but the current model is designed to encourage short-term contributions over long-term commitments. When developers leave, they take critical knowledge with them, with no structures to transfer expertise to the next generation. Each departure means starting from scratch.



I spent a year and a half working on this project and really getting to know it, and then, because I left, they basically had to train a whole new person who has to spend probably similar amount of time to really catch up to speed on how everything works. So that makes me wonder, is it really sustainable?

- Anonymous Contributor



We need to retain contributors who have had experience with the code base. Only if you're able to sustain new contributors, they will eventually become experienced contributors, and we need experienced contributors for the project sustainability. Otherwise, it's pretty bad, because there's so many intricate stuff in the code base which only experienced contributors see. So if there are no new contributors, there are no experienced contributors.

- Anonymous Contributor

CONTINUOUS TURNOVER OVER SUSTAINED EXPERTISE

Contributors accept this replaceability as natural: "everybody's dispensable... it's the ecosystem that's important." But this normalization of transience means that critical knowledge gets lost every couple of years, with no pathways for contributors to remain involved. The ecosystem sustains itself not through supporting individuals but through their endless replacement.



The ecosystem can be totally sustainable, because people can come and leave, and other people can join. It's a movement, right? ... I think everybody's dispensable in that sense, and it's the community, it's the ethos, it's the ecosystem that's important.

- Anonymous Contributor

The stigma of profitability in OSS

TAKEAWAY

The one-size-fits-all grant model fails to recognize the different realities of core infrastructure vs application work. Protocol work needs ongoing funding streams, applications need revenue freedom. Current grant structures constrain both in perpetual dependency, preventing the sustainability they aim to support.

PROTOCOL VS. APPLICATION REALITIES

Contributors recognize that sustainability requirements differ between core protocol and application. For those working on core infrastructure, grants are essential because of the lack of business models for their projects. Meanwhile, those working on user-facing applications recognize that revenues would be a more sustainable model. Yet this approach seems to be discouraged by funding bodies.

“

Just because it's open source doesn't mean it shouldn't be made profitable, because at the end of the day, that's how you make it self-sustainable, and you don't want to be relying on grant organizations the entire way.

- Anonymous Contributor

”

Right now we have these foundations that are funding our work. But ... maybe the more sustainable thing, long term, would be actual business revenue. I might pursue that direction, but it might not be available to everyone. I work on a user-facing product, where I could have paying subscribers, but if you're developing a library, or if you're developing Bitcoin Core, then you basically need sponsors.

- Anonymous Contributor

THE REVENUE TABOO

When projects propose hybrid models, they face skepticism from funders, which prevents the very sustainability it aims to encourage. As one participant told us: "On their side, they're like: Well, why would we give you money to fund development of something you're going to turn into a business? But then ultimately ... we won't have to be reliant upon a grant, and then that capital could be freed up for other projects."

“

[The granting organizations] are great, but I do see some friction there. On their side, they're like: Well, why would we give you money to fund development of something you're going to turn into a business? But then ultimately ... we're offering products and services, so we won't have to be reliant upon a grant, and then that capital could be freed up for other projects. So I think there needs to be kind of more nuanced understanding and debate around building sustainability in some of these free and open source projects, where they're not reliant upon just the goodwill of others

- Anonymous Contributor

PERVERSE INCENTIVES IN GRANT STRUCTURES

The result is perverse incentives throughout the ecosystem. Projects with viable revenue streams stay grant-dependent because "they're scared to do that because they don't want to lose the grants." Individual-only funding prevents team scaling. Pure open-source requirements block sustainable hybrid models. Funders inadvertently trap projects in grant dependency — optimizing for renewal requirements rather than long-term sustainability.

“

I know some projects that have become constricted in their development by the kind of the expectations of the people who are giving them the grant. So for example, a grant may say: we will only fund one developer directly ... so that then means that you can't expand your team and pay other people to work on that thing. They don't want to, they prefer not to give a grant out to a project. And then also, they would prefer to only give grants out to completely free and open source projects. And then some of the projects I know, they have good ideas for creating for profit revenue streams which could help sustain their projects, but they're scared to do that because they don't want to lose the grants. So there is kind of a skewering of incentives that happen just by grants existing. Not being unappreciative of the grant existing in the first place. But you can kind of almost become beholden to the expectations of the people giving you the grant

- Anonymous Contributor

The psychosocial dimension of sustainability

TAKEAWAY

Psychological wellbeing is as crucial to sustainability as financial stability, yet the ecosystem treats burnout as an individual problem rather than the systemic issue that it is. Chronic uncertainty, lack of feedback, and always-on rhythms are among the top causes of burnout. The ecosystem's resilience depends on recognizing that psychological sustainability requires structural support, not just individual coping strategies.

PSYCHOLOGICAL WELLBEING AS SUSTAINABILITY FACTOR

Beyond financial considerations, psychological sustainability emerges as a critical issue. Over half of participants (14 of 26) report experiencing burnout at least once, and for 3 contributors it was a primary reason for leaving their grant-funded roles.



We have extreme burnout. ... in Bitcoin world, people go to the extreme. ... I think a lot is about identity. ... Then that identity is kind of pegged to the success of the technology, the price, the idea, how people are talking about it. ... Then your sense of identity can kind of fluctuate quite heavily.

- Anonymous Contributor

SIGNS OF BURNOUT

Among the top causes of burnout recognized by contributors (7/26) is “working too much in the wrong direction,” as one participants put it — directly connected with the lack of feedback and mentorship. Another 7 identified life getting in the way of work as a burnout trigger, while 4 participants found that setting boundaries exacerbated stress and burnout risk. The boundary paradox is telling: work becomes so engaging that “I’m always happy to give more to the work stuff, because it’s fun for me,” yet this same inability to disengage prevents the rest necessary to sustain the work in the first place.



Mostly burnout has been related to just going in the wrong direction, and working too much in the wrong direction, and then noticing that, and questioning decisions. And if things are not working you just might need to take some time off.

- Anonymous Contributor

There were a lot of moments of doubt, like, maybe I'm not good enough. And I didn't really know, do people like me? Do they not like me? Do they like the work, not like the work? So that would create burnout sometimes, and it could be hard to get motivated, because I'm not really sure, is this actually successful or not, and if not, how do I improve? And how do I get better? And so that would create a sense of burnout and lack of motivation.

- Anonymous Contributor



The burnout for me feels to come more from the family side of stuff. Like, I'm always happy to give more to the work stuff, because it's fun for me.

- Anonymous Contributor

INDIVIDUAL RESPONSES VS SYSTEMIC ISSUES

When burnout occurs, contributors overwhelmingly internalize responsibility — 5 of 26 explicitly stated that managing burnout was entirely their own responsibility. This self-reliance reflects both ecosystem values and practical reality: without clear support structures, developers have nowhere to turn. One participant captured this: “I don’t think it’s dependent on any external body per se.”



But [overcoming burnout] that's all on myself. That's all on me to do. I don't think it's dependent on any external body per se.

- Anonymous Contributor

I think it's really hard to get someone to admit that they need help. But I would say, maybe, but I don't even know what that would look like

- Anonymous Contributor



COPING STRATEGIES

Contributors develop individual approaches to manage burnout. Common strategies include taking breaks ("giving myself permission to not do stuff ... and have faith that you will want to come back to it later"), boundary setting, switching to creative side projects, and practicing meditation. One participant emphasized the importance of simply acknowledging burnout as legitimate: "hearing the term burnout and it being acknowledged as something which happens to people, makes people feel less inadequate or lonely."



I think just being aware of burnout, and hearing the term burnout and it being acknowledged as something which happens to people, makes people feel less kind of inadequate or lonely if they go through that process. So it's good for people to speak about it openly.

- Anonymous Contributor

You need to create boundaries, and how exactly to create boundaries and stuff like that. But many young kids I see getting into Bitcoin, they're good, smart kids, really motivated, but they are just like losing it in their head because of all the excitement, all the things that they get learning. It's also very intense. You learn so many things simultaneously. You learn about money, you learn about computers, you learn about softwares. So, yeah, it does affect me also, but it used to affect me much, much more. Then I started doing meditation ... doing meditation as a medication.

- Anonymous Contributor



I have that strategy where if I start to get burned out, I'll just work on some crazy thing, which is fun. So I have a hard time burning out, because, the burnout just leads to not doing what I'm supposed to be doing. But this is better than just crashing and not being productive.

- Anonymous Contributor

I think the thing with burnout is that you just have to trust that you'll get through it. ... I think the hard part of getting through those particular emotions is just having faith that you're going to want to do it again in the future, and not getting into the bad emotional cycle of feeling like you should be doing something when you don't want to. ... I can get over being burned out really quickly, because I give myself the space to let go.

- Anonymous Contributor



THE URGENCY PARADOX

While some contributors find relief through short breaks and boundary-setting, this becomes increasingly difficult for senior developers maintaining critical infrastructure. The humanitarian stakes create an impossible bind. Unlike newcomers who can step away for "two or three days," experienced developers face the weight of knowing their absence directly impacts users relying on these tools. The very expertise that makes them irreplaceable also makes rest feel irresponsible.



We are trying to solve issues that are getting people in very serious situations. It's a pretty big burden, and being able to talk with someone that understands the urgency, that they don't tell you: "Oh, why don't you take a few months off," you know, they'd understand that they would just make things worse.

- Anonymous Contributor

Recommendations:

From tyranny to sustainable permissionlessness

RESTRUCTURE FUNDING MODELS

- **Fund teams, not just individuals:** introduce team-oriented grants to support application layer developers
- **Extend renewal cycles after year 1:** reduce the grant-writing burden for proven contributors
- **Create revenue friendly grants:** encourage profitability in grant-funded applications, based on OSS principles, use licensing cleverly to avoid corporate capture
- **Develop transition pathways:** fund alumni roles (mentorship, documentation, part-time maintenance)

PROVIDE INDIVIDUAL SUPPORT BEYOND MONEY

- **Facilitate admin support:** facilitate shared services for taxes, healthcare, legal needs
- **Co-working space stipends:** combat isolation through physical presence
- **Mentorship matching:** connect new contributors to experienced developers to ease onboarding pains
- **Mental health resources:** normalize and support initiatives aimed to improve contributors' psychological wellbeing
- **Self-management toolkits:** provide productivity resources, time management support, especially for newer contributors

SUPPORT ECOSYSTEM COORDINATION AND HEALTH

- **Partner with universities:** create structured pathways and talent pipeline into the ecosystem
- **Fund team offsites and developers retreats:** provide financial and organizational support for smaller IRL events beyond conferences
- **Document institutional knowledge:** capture expertise before developers leave
- **Support community initiatives aimed toward mindfulness and wellbeing:** preventive approaches including yoga retreats, mindfulness programs at conferences, wellbeing workshops



DEVELOPERS' IDEAS...

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One thing I've been doing is mentoring other people getting into open source. There's a developer that I mentored for over a year, and I still mentored and helped him get a grant, and then I just took on a new person, and I'm really trying to give these people what I didn't get, and take all these experiences I had and really help them feel supported, and create a space where they can be a beginner and not have the answers, and that they don't have to feel like they're constantly having to prove themselves and impress somebody. And so that's been really gratifying to be able to kind of support other people and but in general, I think Bitcoin open source is an amazing thing, and is and something I continue to be inspired by, and I love working with the open source community and connecting with them.

- Anonymous Contributor

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One of the first Nostr events was in Costa Rica, and it was in a yoga retreat. And that was quite funny, because you had all these pale, miserable looking developers go into this yoga retreat in Costa Rica, and they're all in their black t-shirts, and they're all pale, and beards are overgrown ... And then after three days in this yoga retreat, they're walking around barefoot, they got bangles on their wrists, and they're having these philosophical conversations. I thought that was very beneficial for a whole bunch of developers who I work with, and I think it was a good experience for them. And since then, I would like to see maybe more events in somewhere like a yoga retreat, because inevitably, people are going off and doing yoga, and they're eating well, and so it was quite funny. ... I saw a transformation in some of my peers, which was probably, I don't know if life long, but I think it was very good for them to take some time out. Mindfulness, forced mindfulness.

- Anonymous Contributor

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I feel like that might be a huge missing aspect of a lot of open source teams, this idea of an offsite or just getting together in person. It's kind of hard to get people around from around the world to travel for an open source project since they're not getting paid for, but when it does happen, it's actually really productive, and I would hope we do more of that.

- Anonymous Contributor

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Just trying to slip in more mindfulness does make sense. So, a lot of projects and a lot of developers, they'll feel the need to travel around a lot, and go to a lot of conferences and and that can take its toll. There's usually a lot of alcohol involved, and it's quite high energy and then you feel bad because you're actually neglecting the project. So if you can have that space be more nurturing, and have some mindfulness. I think there is probably, maybe even subconscious, an active move to provide ... satellite events at some of these conferences. Like, there's the Bitcoin runners, and in the event, I'll go for a jog around the local city or something, and there's a Bitcoin walkers society as well. And maybe something which you could push is, for some of these conferences, some mindfulness exercises or mindfulness workshops where there could be some meditation, or some guided meditation, or some yoga or something like that, I think that could be great for people.

- Anonymous Contributor