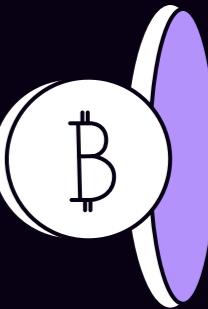# Giving back to Bitcoin

A closer look at how Bitcoin developers build on and maintain the world's most important financial innovation — without consistent income — and what we can all do to help.

TL;DR

- Most respondents, didn't know there's no consistent income stream for Bitcoin developers and don't know most funding comes from grants/donations.

- Respondents care a lot about supporting Bitcoin development after being made aware of the lack of consistent income, and they're willing to pitch in themselves to support protocol development.

- Awareness about and action to support Bitcoin development are both essential to the continued growth and success of Bitcoin.

Whether you're new to Bitcoin or have held it for years, there's a lot to follow — far beyond the price. Perhaps you've heard about mining. Maybe you've looked into the environmental impact. But how much do you know about the development of the protocol? Who is behind the technology? Who is working on the maintenance and security of the software? Importantly: If Bitcoin is decentralized, how can we motivate people to keep working on it?

In June, Okcoin randomly surveyed 477 customers to learn more about their awareness of how the protocol is maintained and how they think developers are compensated. 76 of them identified themselves as full-time crypto professionals/traders, and 401 identified themselves as non-professional retail customers. In partnership with Brink and open sats, organizations funding a variety of programs that support Bitcoin development, we're sharing an ebook that illustrates some of our collective findings.

Contents

Facebook is a trillion dollar company and has thousands of engineers. Bitcoin will soon be a trillion dollar asset and only has about 30 full-time engineers.

Mike Schmidt
Brink Cofounder

What's a Bitcoin developer?

Bitcoin is open source money: A fully decentralized protocol supporting a fast-growing financial ecosystem with a market capitalization that broke the $1 trillion USD mark in 2021. Bitcoin developers are highly skilled software engineers who work to eliminate bugs and vulnerabilities in the code, strengthen the network's security and performance, review proposed code changes, improve the efficiency of transactions, develop solutions to increase the number of users, and more.

Bitcoin Core, the software that most people use to access the Bitcoin network, is open source, which means anyone can view the code, distribute it, copy it, or even change it. This means there is no central authority to organize and reward the work of developers: it is all supported by passion-driven volunteers. This is a strength of the network because it safeguards the decentralized nature of the project.

Before 2013, there was not a single paid developer working full time on Bitcoin. Today, estimates are 20-30 full-time developers. But as the needs of the protocol and the people using it evolve, we need more people to contribute. Before we dive further into why funding for these developers is important, let's explore what this work looks like, and meet some of the developers.

What developers work on

Some of the respondents in our survey asked "Wasn't the protocol finished when it was released?". The answer: The technology may have been far along when it was released over ten years ago, but there's still a lot of work to be done. There are a number of important areas that full-time Bitcoin developers are focused on, and every contribution helps.

There have been many meaningful updates to the protocol since it was released in 2009, in security and beyond. Here's a recap of a few notable protocol updates that have been implemented in the past twelve years:

An upgrade eliminating Transaction Malleability, which in turn enabled the development of Lightning on top of Bitcoin.

2012: P2SH

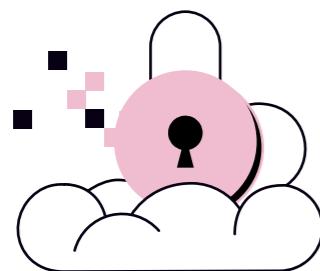Made multi signature transactions easier and more private.
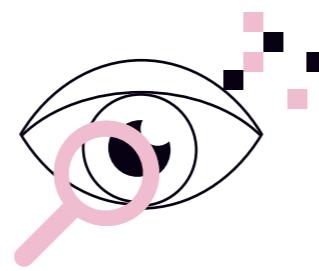
2017: SegWit

2021: Taproot

Bitcoin's latest upgrade to increase privacy and make complex smart contracts cheaper.
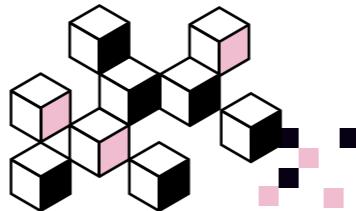
Some areas developers focus on

Security

Virtually all Bitcoin developers work on improving its security and hunting for vulnerabilities. Like all software, Bitcoin has bugs! The hope is to catch them sooner with more code reviews.
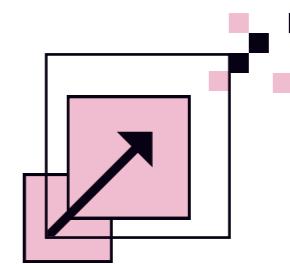
Privacy

Decreasing the information transactions leak is a strong area of focus. This work also aims to keep Bitcoin fungible – ensuring each transaction remains as indistinguishable as possible from another.

Decentralization

Decentralization is maybe the most important aspect of Bitcoin's architecture. One way to keep Bitcoin decentralized is to ensure running a Bitcoin node remains as easy and low-cost as possible.

Scalability

Developers also work toward minimizing the size of each transaction, resulting in more throughput as well as lower transaction fees for the sender.

Meet Bitcoin developers

Marco Falke

Bitcoin Core developer

❝ At least half of all Bitcoin developers' efforts, mine included, are directed towards quality code assurance. I also dedicate part of my time to Bitcoin outreach. Educating new volunteers on the project and teaching them how the consensus model functions is a really important part of building the community. I was given this support when I joined, so I want to pass it on.

Antoine Riard

Bitcoin Core and Lightning developer

❝ If you're a curious being, with a taste for hard, unique, impactful challenges, demanding a wide variety of skills, far beyond the code, please consider getting involved in the Bitcoin protocols development stage. Whatever your life path or wherever you come from, you can make it as long as you put the work in.
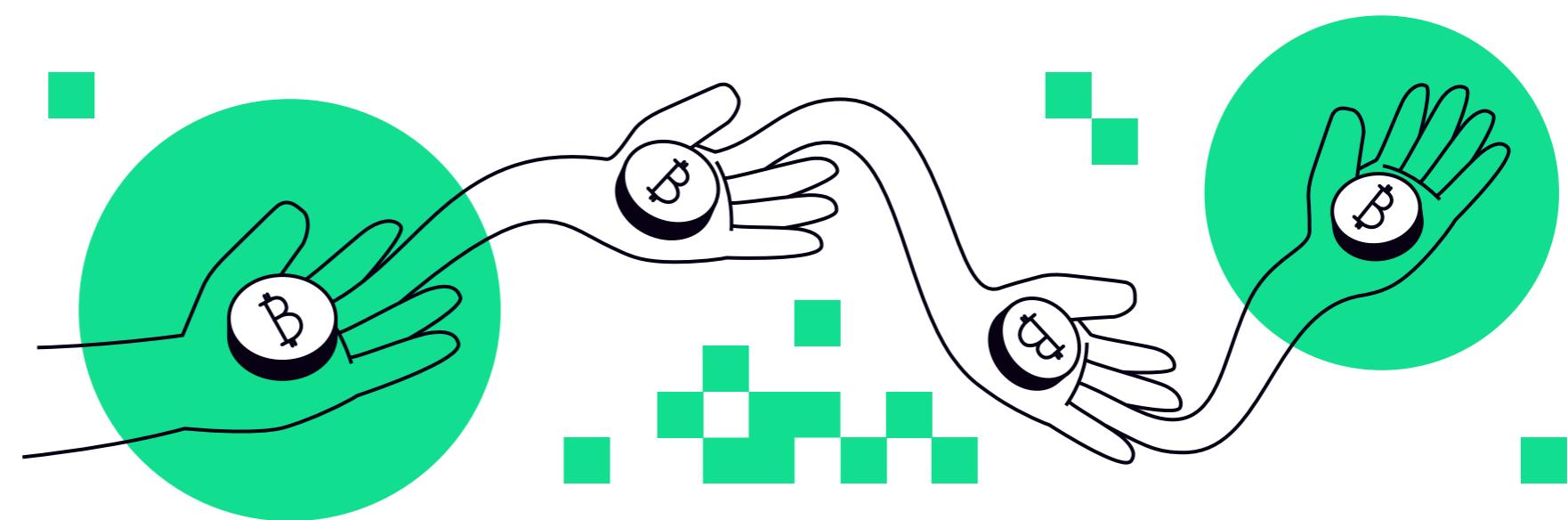
John Newbery

Bitcoin Core developer and Cofounder of Brink

❝ Developers like working on big, interesting problems that have the potential to have a huge impact, and there is nothing bigger or more interesting that working on Bitcoin. However, passion isn't enough by itself. We need to make sure that developers are fairly compensated for their skills, and that they feel that they can make a sustainable and long-term career by working on Bitcoin.

How is Bitcoin development funded?

The biggest cryptocurrency in the world has no employees and no research and development department because it's completely open source and decentralized. There's no technology, company, or organization out there that's quite like it. This might explain why there's often confusion about how Bitcoin development is funded.

Do people know Bitcoin developers don't have a consistent income stream? In short, no.

Most respondents didn't know how Bitcoin developers are compensated.

36% believe developers receive parts of transaction and network fees

23% believe developers receive funds from Bitcoin mining efforts

19% believe developers fund themselves through crowdfunding or otherwise

? Many didn't have a guess

In their own words

It's like Wikipedia where the founder could be rich but decided to be poor.

Is the mysterious Satoshi guy paying people to work on it? They get money from miners? No clue.

I don't even understand the question of how Bitcoin developers are paid. Do they get equity from the founder?

Why Bitcoin is different

If we compare Bitcoin with companies that support complex technical products, the differences are clear. For example, Facebook reached a market capitalization of one trillion dollars in 2021, and employs tens of thousands of product-focused employees to maintain and develop its code. Bitcoin, on the other hand, has about thirty full-time developers and no centralized party sponsoring the growth of the protocol.

If we compare Bitcoin with other crypto projects, the large majority have a dedicated developer team, paid either via venture capital funding or a coin premine. What's a premine? The process of mining coins before the public launch, usually to create value for people working on the protocol. Bitcoin did not have a premine: All of the coins were mined after its public launch. It also didn't raise capital from an investment fund – Satoshi Nakamoto built, distributed, and maintained the software for free.

Bitcoin's closest cousins are in the world of free and open source software (FOSS) – software that is free to use, copy, distribute and change. The most famous example of FOSS is the operating system Linux, powering hundreds of millions of personal computers, mobile phones, and web servers. Most of Linux's paid developers are funded by a couple of companies who offer professional support services to Linux users. Bitcoin can't afford to have only one or two companies fund its development: The risk of these companies colluding to change the protocol would be too high.

With all of this in mind, it's understandable that people aren't sure how Bitcoin's development is funded. All open source developers are volunteers and none of the transaction fees, nor the mining rewards, go to them. But with the network's growth, it has become necessary for some engineers to work full-time on the project.

A few reasons Bitcoin needs dedicated support from developers:

01 / Code complexity

The protocol has become increasingly more complex over time. It's now become very difficult to have a deep view of its structure without working on it full-time. Programs like Chaincode's Residency program and the PR Review Club help, but educating, mentoring, and onboarding new developers is still a challenge.

02 / Defense against attacks

Bitcoin's usage and market capitalization have skyrocketed in ten years. That means the number and motivation of potential hackers have also skyrocketed. The hunt for a vulnerability serious enough to endanger the network is getting much more active, although no widespread attacks have been effective to date.

03 / Market confidence

The consequences of any hiccups in the technology are more serious. Issues that may have affected the protocol, like the "inflation bugs" discovered in 2010 and 2018, would have much bigger effects with more widespread adoption today, and they could undermine users' confidence in the long-term value of the project.

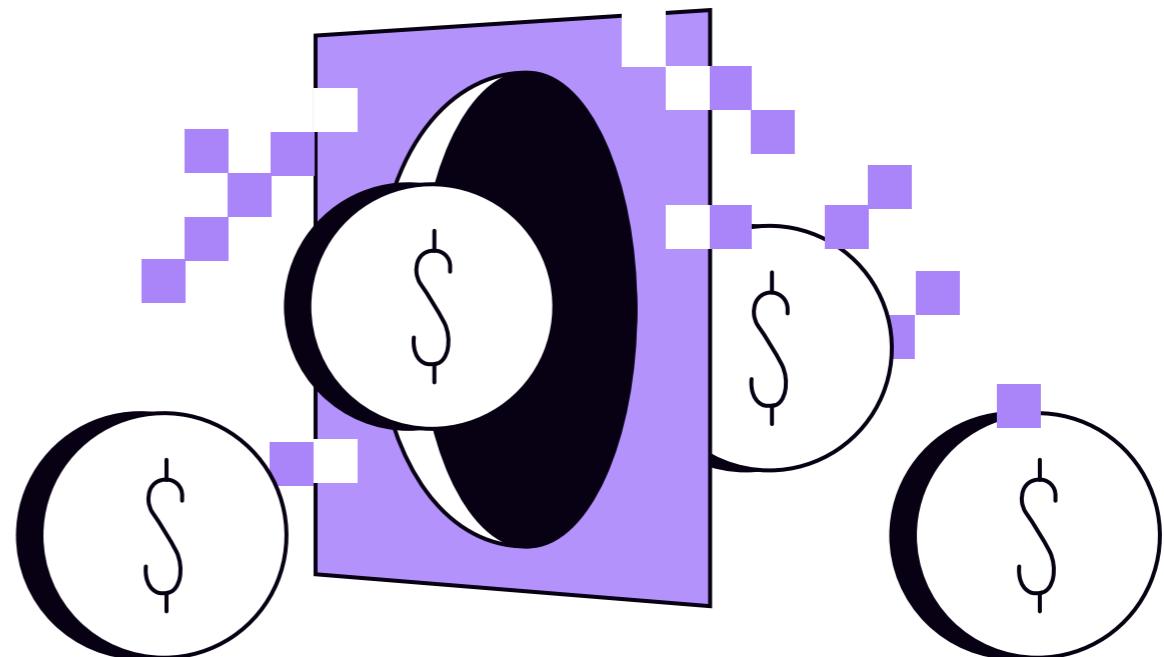# What are the current funding solutions?

Efforts to fund Bitcoin development are somewhat scattered but growing steadily. It can be difficult to understand how it all works, but here are some of the main supporters, grouped by the way they approach funding.

Types of funding

There are a variety of ways developers can be compensated for their work. Here's a look at some of the models they're funded through. This list is a snapshot, but there are more types of funding and companies and organizations who support this work.

Some exchanges funding Bitcoin developers

okcoin

BitMEX

BITFINEX

GEMINI

kraken

BlockFi

coinbase

Okcoin has contributed $1,000,000 in funding directly to Bitcoin developers or to nonprofits supporting Bitcoin developers to date.

Some Bitcoin development nonprofits

brink

>_OpenSats

(Square Crypto)

digital currency initiative | **mit media lab**

Human Rights Foundation

Brink has supported six Bitcoin developers and has $3 million pledged for fellowships and grants.

Open Sats plans for their donation platform to go live later this year and will award their first round of grants shortly after.

Types of funding

Some companies that employ Bitcoin developers

Blockstream

LIGHTNING LABS

chaincode

NYDIG

Some technology solutions

- <u>Bitcoin Donation Portal</u>: A portal to help people contribute to individual developers
- <u>BitcoinACKs</u>: A site to help developers get bounties for specific code changes
- <u>Github Sponsors</u>: A platform for developers to list their work for funding from individual donors

We're seeing more companies, nonprofits, and technologies coming together to support this important work every day. It's essential that more people become aware of the work required to maintain the Bitcoin protocol and act to support it.

Our contributions to Bitcoin developers may sound like a lot to some but it's really nothing if you think about the needs of this important technology. Bitcoin is the money of freedom and our future. Let's treat it that way.
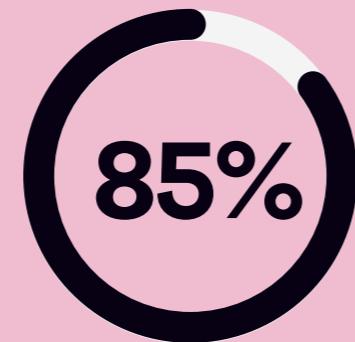
Hong Fang
Okcoin CEO

After people become aware, they care

Thankfully, the interests of people we surveyed and the needs of the network are aligned. When people become aware of the way Bitcoin's development is funded, they're excited to support the work.

Do people care about giving back to Bitcoin after they find out developers don't have consistent income? Yes.

85% said they care about their exchange funding Bitcoin developers

What else do they care about?

69%

would like their exchange to provide yearly grants to developers

32%

would like their exchange to give customers the option to round up to the nearest satoshi when making a trade to support Bitcoin developers

25%

would like their exchange to match contributions from customers for Bitcoin developers
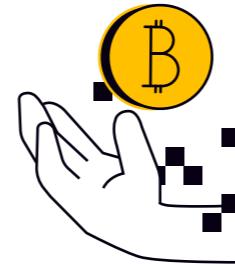
How can we all help?

As Bitcoin scales and increasingly complex functionalities are built on top of it, more work will be needed to keep it running. From promoting more awareness to bringing more sustainable financial contributions, there are a number of ways we can help.

Education

At this stage, producing more educational content and increasing awareness of Bitcoin's development model, its challenges, and the necessity to strengthen it in a decentralized manner appears to be a priority.

Contribution

Whether you encourage more companies to support Bitcoin developers or make a contribution to organizations yourself, the funds are needed and the need will only continue to grow. Consider contributing to Brink, Open Sats, or another organization supporting this work.

Productization

As the overview of the funding landscape shows, it can be hard for non-experts to navigate the space. This is where exchanges and other crypto companies can help. Okcoin is taking this research into consideration and building features to support this effort.

This technology is a catalyst for positive civilizational change like no other invention before it. We all are and will be benefiting from Bitcoin, so we need to give back to the people who maintain it.

Ben Price
Open Sats Initiative Founder

okcoin | brink | >_OpenSats

Let's give back to Bitcoin.

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