The Dev Report is a quarterly publication by Electric Capital.

The Dev Report uses Electric Capital’s proprietary data to trace where developers are building across the crypto ecosystem. The report will be published in parts.

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Electric Capital is a crypto asset management firm.

We invest in programmable money tokens based on innovative technology, market adoption, and real use cases. We perform deep technological diligence far beyond just reading a whitepaper. We compile code, do security audits, run nodes to programmatically inspect the blockchain, have market intelligence based on proprietary software, and more.

We’re located in Palo Alto, California.

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Introduction

Part 1: Developer Activity Overview

Upcoming Parts:
Platform & Infrastructure
Apps & Services
Money
Developers are a leading indicator for where value will be created and accrue.

We indexed 21,000+ code repos

...de-duplicated 16M commits to find original code authors

...analyzed 130k developers

...across 3k crypto projects.

The Dev Report consolidates our findings on the top projects by network value.
Not all code commits are created equal. We eliminate those that don’t reflect real activity.

1. **Forks**: Only new code count toward “core” protocol activity. We omit code and developer activity from merging changes from the original, forked codebase.

2. **Commits from Integrating Open Source Libraries**: Integrating common libraries does not count toward “total” or “core” code activity.

3. **Projects with only 1 repo**: Activity resulting from changes to the website or documentation does not count toward “core” activity, but counts toward “total” activity.

4. **Projects built on Ethereum**: Only Solidity changes count toward “core” protocol activity. Website changes, documentation, etc. in the same repo as protocol code only count toward “total” commits.
We can always be better. Have feedback?

Code contribution analysis is nuanced and we know this is imperfect. We welcome any feedback or comments on this report. Please do let us know how we can improve our data and analysis.

Contact: Maria Shen - info@electriccapital.com
Looking at all public coin repositories since 2010...
The number of developers working on public coins has roughly doubled in 2 years
From Jan 2018 to Jan 2019, monthly devs only fell 4% while crypto markets fell 80%.

Crypto prices peaked here.

Index 2,845 coins across 20,667 repos | Electric Capital Internal Data | Excluding closed code repositories
Today, 4k+ developers a month work on over ~2,800 public coins

Monthly Active Developers

Number of Developers

Jan, 2010 | Jan, 2012 | Jan, 2014 | Jan, 2016 | Jan, 2018

Indexed 2,845 coins across 20,667 repos | Electric Capital Internal Data | Excluding closed code repositories
But this is actually undercounting the number of developers in crypto...
Some of the biggest repos are private, not yet shipped, or not a coin e.g. Lightning (future reports will incorporate these sources)

Monthly Active Developers

Total number of developers is actually much higher
So, what are all these devs working on?
Developers are working on two aspects of projects...
1. **Core Code**
Core Protocol Implementation

2. **Total Code**
Core Protocol + SDKs + wallets + website + api docs and examples + etc.
Starting with number of developers on Core Code...
Ethereum has the highest number of developers working on core protocol

Ethereum has an average of 99 active developers per month.
Bitcoin has the 2nd highest number of core protocol devs 10+ years after founding

In Core Code: Average Monthly Developers by Network Value (Linear Scale)

BTC has 47 core protocol developers per month

Top 10 coin by network value (Excluding USDT, BNB)

N = 78 projects | Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data | Excluding closed code repositories
Cardano, EOS, and Tron have 25+ monthly devs, the most for platforms after ETH

In **Core Code**: Average Monthly Developers by Network Value (Log Scale)

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**N = 69 projects | Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data | Excluding closed code repositories**
Many well known projects average 10-20 core protocol developers per month

In Core Code: Average Monthly Developers by Network Value (Log Scale)

Monero, IOTA, Zcash, Tezos, Zilliqa and others all have 10-20 developers per month

N = 69 projects | Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data | Excluding closed code repositories
Status has a high number of core protocol developers relative to network value

In Core Code: Average Monthly Developers by Network Value (Log Scale)

Status has 36 protocol developers per month

Network Value ($M, Log Scale)
Some projects with $250M+ network values only have 0 to 5 developers!

In Core Code: Average Monthly Developers by Network Value (Log Scale)
Including developers working on Total Code in addition to core protocol...
...Ethereum (again) has the most developers

Ethereum has 216 active developers per month

In Total Code: Average Monthly Developers by Network Value (Linear Scale)
Bitcoin is in top 4 for active total developers

In Total Code: Average Monthly Developers by Network Value (Linear Scale)

Bitcoin has 51 active total developers per month

Ethereum

Cardano

Status

Aeternity

Bitcoin

XRP

In Total Code: Average Monthly Developers by Network Value (Linear Scale)

N = 72 projects | Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data | Excluding closed code repositories
Reminder: this is an undercount of BTC, ETH, XRP developers as many developers commit code outside of the org’s repos

In Total Code: Average Monthly Developers by Network Value (Linear Scale)

N = 72 projects | Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data | Excluding closed code repositories

XRP ecosystem not included
Truffle, Ganache developers not counted
Electrum, Bitgo not included

Top 10 coin by network value (Excluding USDT, BNB)
Status, Cardano, Aeternity have 50+ devs per month

In Total Code: Average Monthly Developers by Network Value (Log Scale)
Many well known projects have 25-50 devs per month committing code.

In Total Code: Average Monthly Developers by Network Value (Log Scale)
These are averages, how have active devs changed over time?
Looking at monthly active developers from Jan, 2018 to Jan, 2019...
Monthly **core** and **total** devs in the past year across most valuable projects....

**Dates:** 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
Bitcoin has not fallen below 35 developers in the past year

Number of Active Developers by Month

- Bitcoin Core
- Bitcoin Total

Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
Ethereum has strong, consistent developer growth

Number of Active Developers by Month

- Ethereum Core
- Ethereum Total

Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
EOS developer growth increased around its launch, then flattened

Number of Active Developers by Month

- EOS Core
- EOS Total

Mainnet launch

Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
Many Bitcoin forks have flat or declining number of developers.

Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
Among top developer losses...
In Top 100, biggest losses in **core** developers & **total** developers

**Dates:** 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
Despite losses, some projects still have 10+ total code developers per month

- Verge has 15 total devs/month
- Steem has 14 total devs/month
- Qtum has 13 total devs/month
- XRP has 12 total devs/month
...while these projects are at fewer than 5 monthly developers
Many projects with fewer than 5 monthly developers are forks

- Dogecoin Core - Dogecoin Total
- Electroneum Core - Electroneum Total
- Litecoin Core - Litecoin Total
- Bitcoin Diamond Core - Bitcoin Diamond Total
- Bitcoin Gold Core - Bitcoin Gold Total
- Populous Core - Populous Total
- NEM Core - NEM Total
Almost no one is working on Dogecoin

Dogecoin has 0 devs for consecutive months

- Dogecoin Core - Dogecoin Total
- Electroneum Core - Electroneum Total
- Litecoin Core - Litecoin Total
- Bitcoin Diamond Core - Bitcoin Diamond Total
- Bitcoin Gold Core - Bitcoin Gold Total
- Populous Core - Populous Total
- NEM Core - NEM Total
Litecoin has fallen sharply from 40 monthly total developers to 3 monthly devs.
Among top developer gains...
In Top 100, biggest gains in core developers & total developers

Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
Predictably, developers increase leading up to major releases

- Ontology Core - Ontology Total

- Tezos Core - Tezos Total

- Komodo Core - Komodo Total

- VeChain Core - VeChain Total

Mainnet launch
Some projects were gearing up for major releases

- Zilliqa Core - Zilliqa Total
- OmiseGO Core - OmiseGO Total
- IOST Core - IOST Total
- Holo Core - Holo Total

Jan, 2019: Mainnet launch
Feb, 2019: Alpha release
Feb, 2019: Mainnet launch
March, 2019: Alpha
Some projects have gained more momentum after their releases

- Waves Core - Waves Total:
  - Smart Contracts launched

- 0x Core - 0x Total:
  - Mainnet V2 launched

Dates: 1/31/2018 - 1/31/2019 | Electric Capital Internal Data
What if we slice by **commits** instead of number of developers?
If we isolate code commits to the Core Code...
Bitcoin is in top 15 most active projects 10+ years after founding

Core Code
Commits by Network Value (Linear Scale)

More Commits

Core Code

Network Value ($M, Linear Scale)

Top 100 coin

Bitcoin has 4,557 protocol commits

N = 75 projects | Dates: 1/01/2018 - 2/19/2019 | Electric Capital Internal Data | Excluding closed code repositories
XRP stands out with few commits to the protocol relative to network value

XRP has 314 protocol commits
Ethereum is 3rd in actively committing code to its core protocol

Core Code: Commits by Network Value (Linear Scale)

Ethereum has 9,727 protocol commits

Network Value ($M, Linear Scale)

Top 10 coin by network value (Excluding USDT, BNB)
Excluding coins $5B+: Tron, EOS, and Cardano have highest protocol activity

Core Code Commits by Network Value (Log Scale)

Network Value ($M, Log Scale)

Platforms have high protocol activity

Cardano

TRON

EOS
Komodo, Holo, Zilliqa, IOST, Lisk, and Aelf are highly active with low market caps.
Established coins and forks have lower protocol activity; unclear if good or bad

Core Code Commits by Network Value (Log Scale)

Network Value ($M, Log Scale)

More Commits

Core Code

Network Value ($M, Log Scale)

More Commits

Older, top coins have stabilized protocol activity

Top 10 coin (Excluding BTC, ETH, XRP, USDT, BNB)

Top 50 coin by network value

Top 100 coin

Top 50 coin by network value

N = 74 projects | Dates: 1/01/2018 - 2/19/2019 | Electric Capital Internal Data | Excluding closed code repositories
Switching to **Total Code** (protocol, wallets, docs, etc.) commits...
Ethereum is a clear standout in total code across projects (20x XRP, 8x BTC)

Ethereum has 8x more commits than Bitcoin and 20x more commits than XRP

[Graph showing total code commits by network value (Linear Scale)]

N = 75 projects | Dates: 1/01/2018 - 2/19/2019 | Electric Capital Internal Data | Excluding closed code repositories
Platforms tend to be more active: EOS, Tron, Cardano, IOTA, Waves have the highest activity after Ethereum

Total Code Commits by Network Value (Log Scale)

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N = 75 projects | Dates: 1/01/2018 - 2/19/2019 | Electric Capital Internal Data | Excluding closed code repositories
Lisk, Augur, Aeternity, Komodo, & Holo have high activity relative to network value.

Lisk, Augur, Aeternity, Komodo, Holo are midcap coins with 13k+ commits.
Status stands out with ~20k total commits and low network value

Total Code Commits by Network Value (Log Scale)

Status has a high number of active developers among coins its size
There’s a lot of data here. If we missed anything or made an error, please let us know.

Contact: Maria Shen - info@electriccapital.com
Crypto projects come in 3 big categories...
Money, Platform, and Apps

Money
- Store of Value
- Medium of Exchange
- Privacy
- Layer 2

Platform & Infrastructure
- EOS
- TRON
- Ethereum
- Oasis Labs
- Waves
- Monero
- Dash
- NANO
- OmiseGo
- CASH
- LIGHTNING
- RAIDEN

Apps & Services
- Gaming
  - Decentraland
  - EOS Knights
- Data Storage/Access
  - Siacoin
  - Livepeer
  - Chainlink
- Rating & Reputation
  - Dent.co
- Media & Social Media
  - Steemit
- Industry Infrastructure
  - Golem
  - Odem
  - Data Storage/Access
  - Rating & Reputation
- Distributed Computing
- Apps & Services: Financial Infrastructure
  - Exchange/Market Infra
    - Coinbase
    - 0x
    - Augur
    - Basid
    - Cboe Global Markets
  - Derivatives
    - Sy/Sx
    - Bakkt
    - Gemini
  - Stablecoin
    - Tether
    - TrustToken
  - Lending
    - Maker
    - Compound
    - dharma
Coming soon: Deep dives on Platform, Apps, and Money!