

*ETHDenver BUIDL Week 2020*

# Why Neo and how can I use it to BUIDL?

**Enterprise Coworking**  
3000 Lawrence St, Denver, CO 80205  
Wednesday, February 12th, 2020  
5:00 pm - 7:00 pm

 neo  
colorado

Hello and Welcome! Gauge audience by show of hands: a) if they know anything about Neo and b) if they're primarily an investor, business, or developer-based user.



Left column: Local partners to acknowledge

Middle Colum: Global partners to acknowledge, COZ for grant contributions, and NEO-ONE for conducting Neo workshop's

Right column: Enterprise for hosting a majority of the Neo Colorado meetups



Why did I choose Neo? The community, BUIDL > shill, work first – reward later, unique consensus algorithm, GAS distributions, long-term vision, and ability to deliver. All these things lead down a path of correcting misinformation – mostly on Reddit.

# NEONEWSTODAY

Core development updates for Neo3

Cover dApps and community developers

Fortnightly podcast episodes

Video coverage of major events

Weekly and monthly reports



After correcting tons of misinformation on Reddit in Q4 2017, I ended up joining the NNT team to distribute objective, fact-based, non-sensational information about what's going on in the Neo ecosystem. Went full-time in 2018.

neo  
colorado  
Est. 2018

Panels (i.e., EOS/ETH/NEO)  
Educational presentations  
Developer workshops  
Informal gatherings  
Ecosystem resources

Past events.

neo  
colorado

Neo Colorado offers the following events and opportunities. A timeline of Neo Colorado’s events since November 2018 can be found by scanning the linked QR code.

## This slide deck covers

1. Blockchain industry
2. "Why Neo?"
3. Resources



Link to the slides.



The first part of the presentation is a brief comprehensive overview of the most active blockchain networks. The second part will delve into the benefits of Neo from the investor, business, and developers perspective. Lastly, we'll go over the resources available in the ecosystem.

This presentation will be put on-line, along with links to accompanying websites.

# Why are we here?

Blockchain/distributed systems open new economies and markets.

The shift Web 3 is underway.



Society is increasingly moving to a more fragmented, global infrastructure of networks that connect people. Blockchain offers a means of trustless interaction between anyone across the globe, enabling new markets for buyers and producers to interact.



*The future isn't one blockchain or another;  
it is one blockchain and another.*

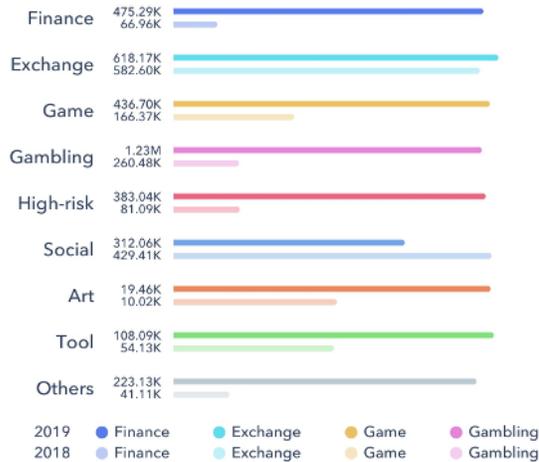
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In an industry that prioritizes decentralization, there will not be just one blockchain to rule them all. There will be many blockchain platforms and ecosystems that cater to various markets. This is exhibited in the following slides, which highlight statistics from Dapp.com's 2019 market overview report.

# Market Performance - 2019 vs. 2018

## Active Users:



## Transaction Volume (USD) :

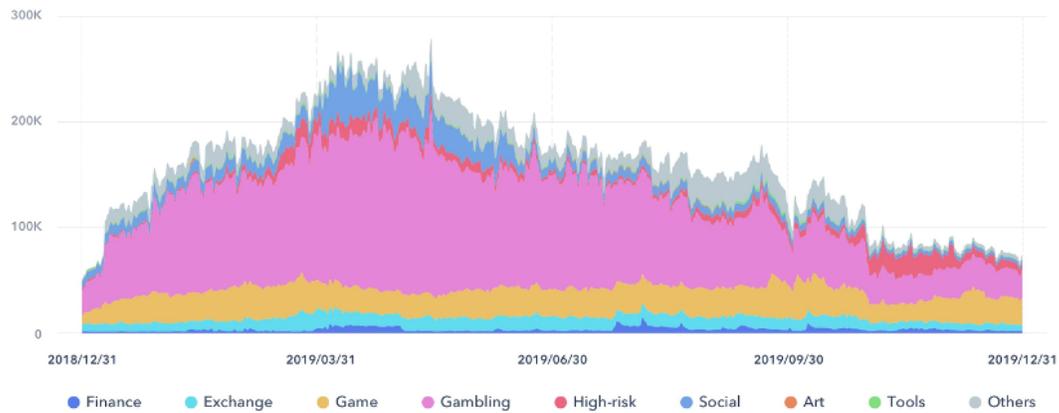


ETH kicked off the ICO, ETH kicked of the DeFi ecosystem. An obvious trend towards distributed systems and decentralization people have increasingly asked for since the 2009 recession.

## 2019 Daily Active Users by Category

dapp.com

Total of **3,117,086** Active Users - **1,229,912** Gambling, **618,166** Exchange, **475,290** Finance.



2019 Annual Dapp Market Report | 14

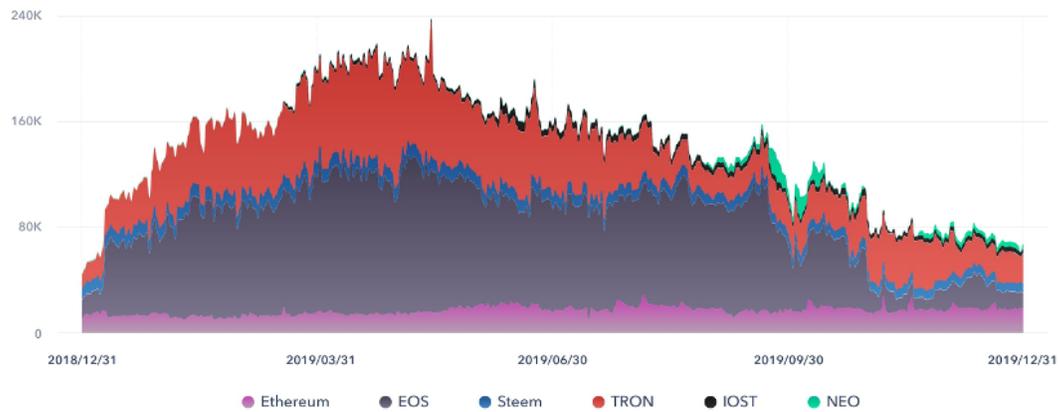
Across the blockchain industry, there were 3.1 million active users. The three most popular use cases were gambling, exchanges, and defi.

## 2019 Daily Active Users by Blockchain

dapp.com

Total of **3,117,086** Daily Users:

Ethereum **1,427,093**; EOS **518,884**; Steem **120,560**; TRON **967,185**; IOST **27,871**; Neo **55,493**.



2019 Annual Dapp Market Report | 15

The blockchain/dApp ecosystem is still nascent, but a picture is beginning to form. One where unique blockchains are beginning to serve unique purposes.

## Multiple Chains, Multiple Purposes

Neo: Non-custodial exchanges

Ethereum: DeFi applications

Steem: Social

Tron, EOS, and IOST: Gambling dApps



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I am here not to “convert Ethereum devs” to the Neo blockchain, but to highlight there is a future where the top public blockchains will need to interact with one another. Increasingly so, as each chain begins to differentiate itself in terms of purpose and use cases.

## 2019 Dapp Market Overview - User Analysis

	⌘ All	⬆ ETH	⬆ EOS	⌘ Steem	⬇ TRON	Ⓜ IOST	Ⓜ Neo
Number of Active Dapp Users	3,117,086	1,427,093	518,884	120,560	967,185	27,871	55,493
Number of Unique Dapp Users	4,630,105	2,330,260	572,441	579,418	1,019,993	27,871	100,122
2019 New	+2,769,070	+1,289,831	+399,416	+60,123	+947,775	+27,871	+44,054
User Activeness	67.32%	61.24%	90.64%	20.81%	94.82%	100.00%	55.43%
Compared to 2018 Data	109.36%↑	78.24%↑	199.89%↑	-68.84%↓	1239.26%↑	--	-1.03%↓
Number of Mainnet Address	93,885,304	83,932,227	1,693,608	1,350,000	4,394,515	344,183	2,170,771
2019 New	+34,849,866	+29,701,733	+1,061,608	+170,000	+3,261,492	+344,183	+310,850
Number of Active Mainnet Address	n/a	n/a	1,060,976	n/a	2,684,018	97,663	603,048
Dapp Users %	n/a	n/a	48.91%	n/a	36.03%	28.54%	9.20%

Despite the size of the blockchain ecosystems, in the Top 6 public blockchains, there was general growth across the board in DAU's, unique dApp users, and in addresses/wallets created.

# Why Neo?

Investor

Business

Developer



I think all boats should rise together, and each blockchain will eventually exhibit its own uses. This portion of the presentation will highlight why the investor, business, and developer should examine the Neo blockchain when looking for a blockchain solution for their project.

## Investor

GAS passive investment

Liquidity

Long-term vision

State of the Neo ecosystem



Choose yourself | James Altucher | TEDxSanDiego



Unlike James here, I'm not going to shill the attendee on why NEO is the next 100x coin. Rather, I'll highlight a few of the fundamentals that long-term blockchain projects should have, and why I believe Neo meets these criteria. This is not investment advice.

Neo (\$NEO), non-divisible

- Governance coin for voting, stake in network

NeoGas (\$GAS), divisible

- Utility token for smart contracts, and payments

10 NEO/S (= \$121.60)			
YOU GENERATE FOLLOWING GAS REWARD			
Current Rate: GAS = \$1.31/USD			
Block Generation Rate: 16.7s			
THEORY CALCULATION		ACTUAL CALCULATION	
Time	GAS	Time	GAS
Per Day	0.0040	Per Day	0.0036
Per Week	0.0282	Per Week	0.0253
Per Month	0.1250	Per Month	0.1122
Per Year	1.4717	Per Year	1.3216
Theory ROI: 1.59%		Actual ROI: 1.42%	



The NEO coin holder is passively distributed GAS tokens each block, comprised of a collection of network fees and redistributed to coin holders. In theory, the more GAS is used in the Neo ecosystem, the more NEO holders are distributed. GAS use will increase as layers are added to the platform.

## Purposes of GAS

### Present

#### System Operations

- Smart Contracts, Nodes

#### Value Transfer

- Remittances

#### Network Fees

- Transaction costs

### Future

#### System operations

- Native oracle network
- Distributed storage network

#### Value transfer

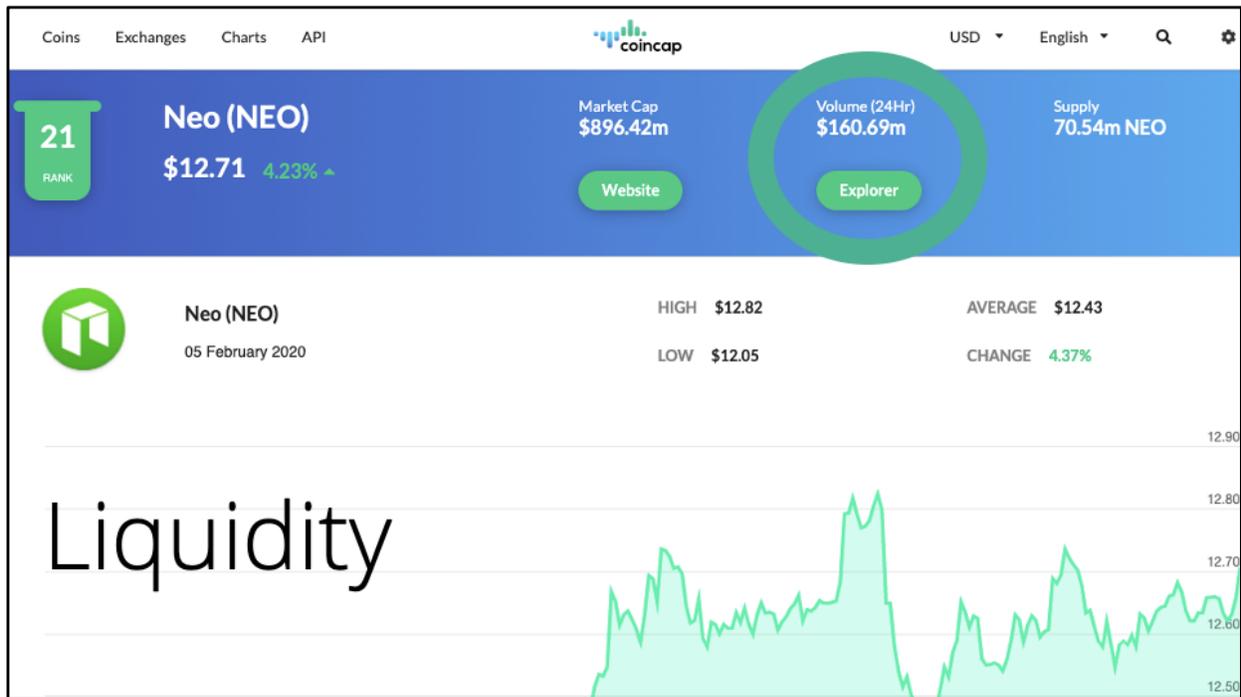
- New off-chain vendors
- On-chain apps that accept GAS

*Don't know, what we don't know.*

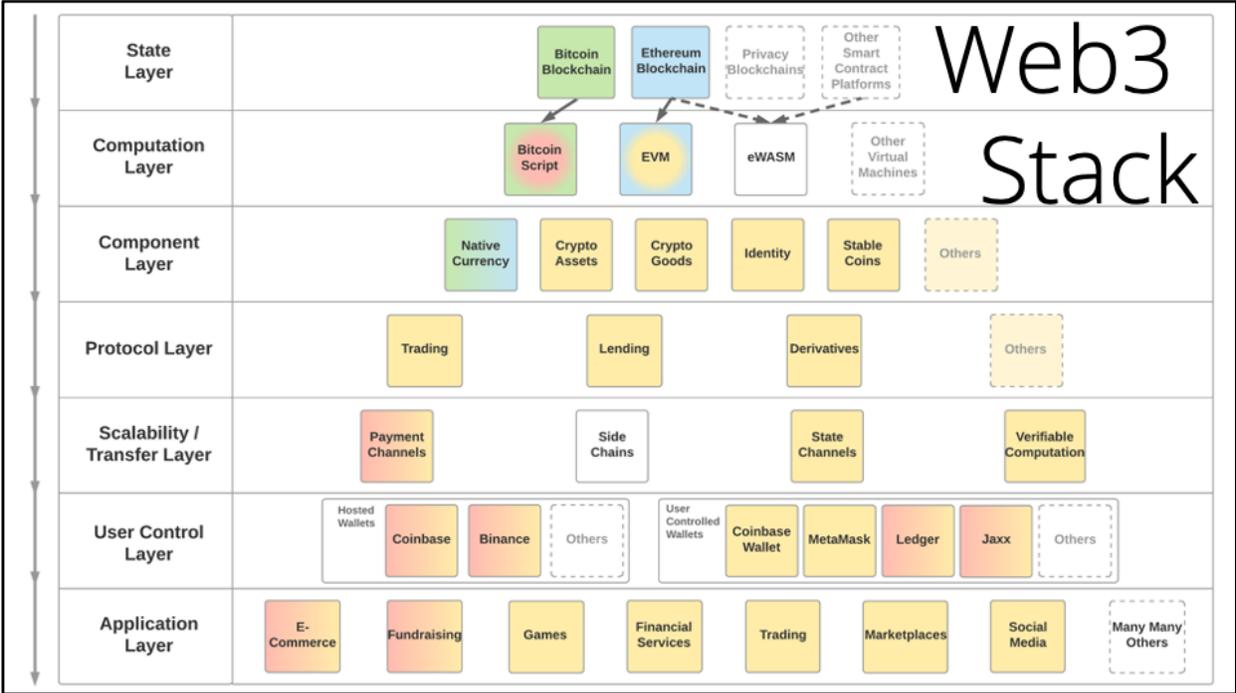


Currently, if a transaction size exceeds 1,024 bytes, a transaction fee is required. GAS is also used to pay for system operations like launching a smart contract, and to collect network fees for sending transactions.

In the very short-term, Switchero DEX will use GAS for base trading pairs.

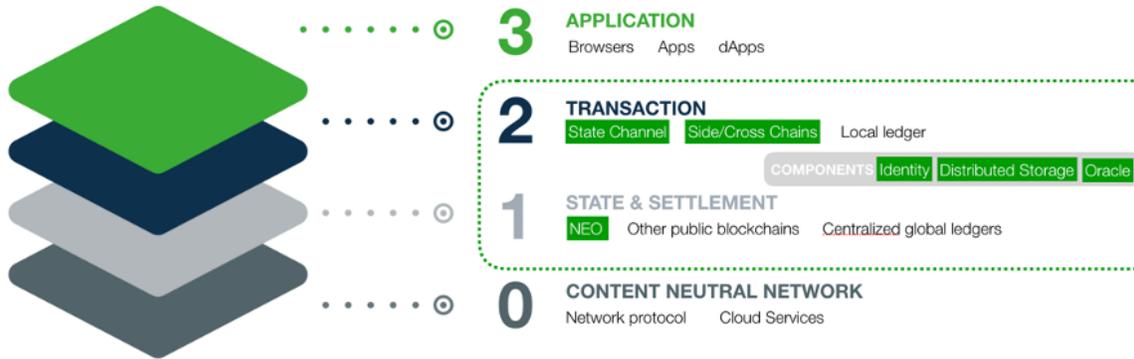


NEO's liquidity is consistently among the Top 15 (according to CoinCap), which is listed on 64 exchanges.



Long-term vision: Ethereum – and potentially “traditional developers” – might know this as the Web3 stack. The image is comprised of modules and pieces of the stack from Layer 0 (the blockchain) through the user interface (at the application layer).

# Next Generation Internet (NGI)



**Long-term vision:** Neo is building a platform that offers the following as a Web 3/NGI stack. In addition to current GAS fees for smart contracts and transactions, distributed storage networks and oracle networks will require the use of GAS.

## Neo3 in 2020

Remove UTXO-based assets

NeoVM decoupled from blockchain

Nine contract types to one

dBFT stability enhancements

Reduction in smart contract fees

Contracts in native language, not NeoVM opcode script

NEONEWSTODAY

Neo3 Updates



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Long-term vision: Decoupling: Easy implementation of native contracts. A separate entity that can run in a browser or even on another chain. In theory, neo smart contracts can be run on multiple blockchains because the VM is portable.



Lastly, a blockchain network exhibits value when there is network activity. While Neo isn't the leading blockchain, it is among the blockchains that is active.

## Business use cases

100% finality.

Quick block times (17 second avg.).

Low cost transactions (first 19 free).

No cost to spin up wallet.



For the business, or project thinking of using a blockchain, they might look into Neo for the following reasons. The blockchain has the following (on this slide).

Note: the first tx is the miner's and is free, the following 19 tx's are free for each block, then require a GAS fee.

## dBFT consensus mechanism

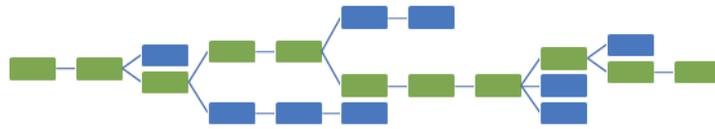


Figure 1. Chain with PoW and PoS



Figure 2. Chain with dBFT



PoW and PoS are probabilistic finality, which means they require a "longest chain" and many confirmations before consensus can be achieved on the transaction. Byzantine consensus reaches true finality, as each block must reach consensus before it is included in the chain.

Information about dBFT:

[https://docs.neo.org/developerguide/en/articles/consensus/consensus\\_algorithm.html](https://docs.neo.org/developerguide/en/articles/consensus/consensus_algorithm.html)

## Use Case: Novem Gold

100 NNN = 1 kg LBMA-certified gold.

Physical store locations.

Requirements

- Quick block times
- Finality
- Accessible group of ecosystem devs
- Distributed storage solution



Novem has physical stores where customers can come in and purchase NNN tokens and/or deposit gold. When a customer is in the store, Novem wants the transaction to be completed as quickly as possible.

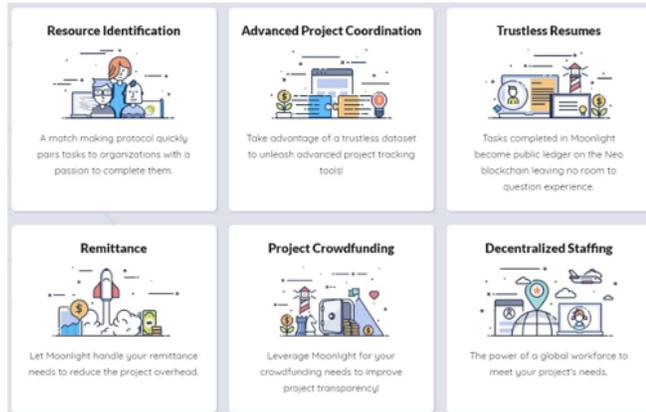
The team will be delivering a wrapped NNN token on the Ethereum blockchain, tentatively some time in 2020.

# Use Case: Moonlight

Distributed workforce platform.

## Requirements

- Finality
- Claims can't be removed
- Quick block times
- Cooperative nodes



Through 100% finality, Moonlight “doesn’t need to worry about someone taking over the network and entirely removing claims. That in combination with the block time creates a platform that can be interactively (meaning that it can be used for point of sale applications without assuming any risk).” - Tyler Adams, Moonlight co-founder

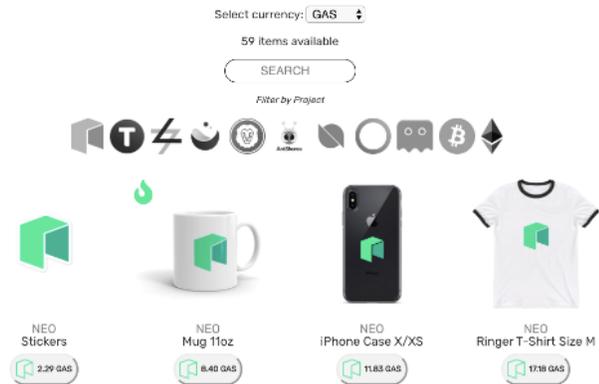
When nodes cooperate and collaboration, it makes the solution extremely energy and compute efficient.

## Use Case: Neo Economy Store

Uses GAS to purchase merchandise.

### Requirements

- Single block finality
- Faster speeds (15 second vs. minutes)



The Neo economy store uses the Neo blockchain because it's fast speeds and has 100% finality, plus it offers a new use case for GAS.

## Use Case: TranslateMe

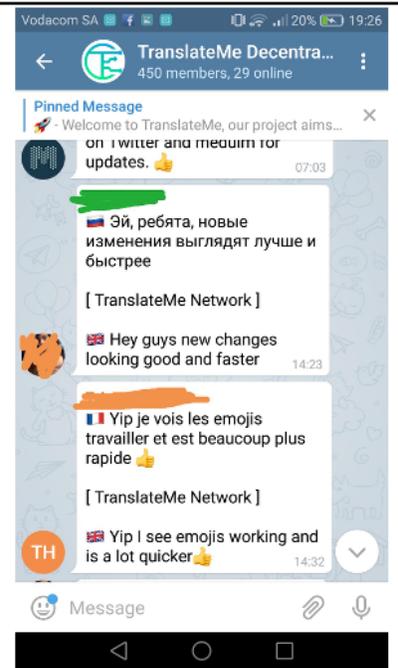
Less expensive than Google, Azure, etc.

Instant translation services:

- Documents
- Live chat

Requirements

- Minimal transaction fees
- Lower barrier to entry
- Focus on regulatory compliance
- Won't get washed out in ecosystem competition



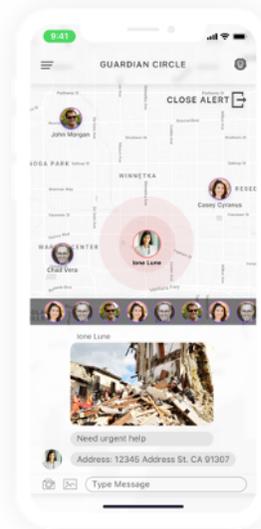
TranslateMe will depend on user-feedback to improve their AI algorithms that instantly translate conversations while instant messaging. Currently, the platform supports 18 languages, but will see more accuracy with a larger amount of translators contributing to the code.

## Use Case: Guardian Circle

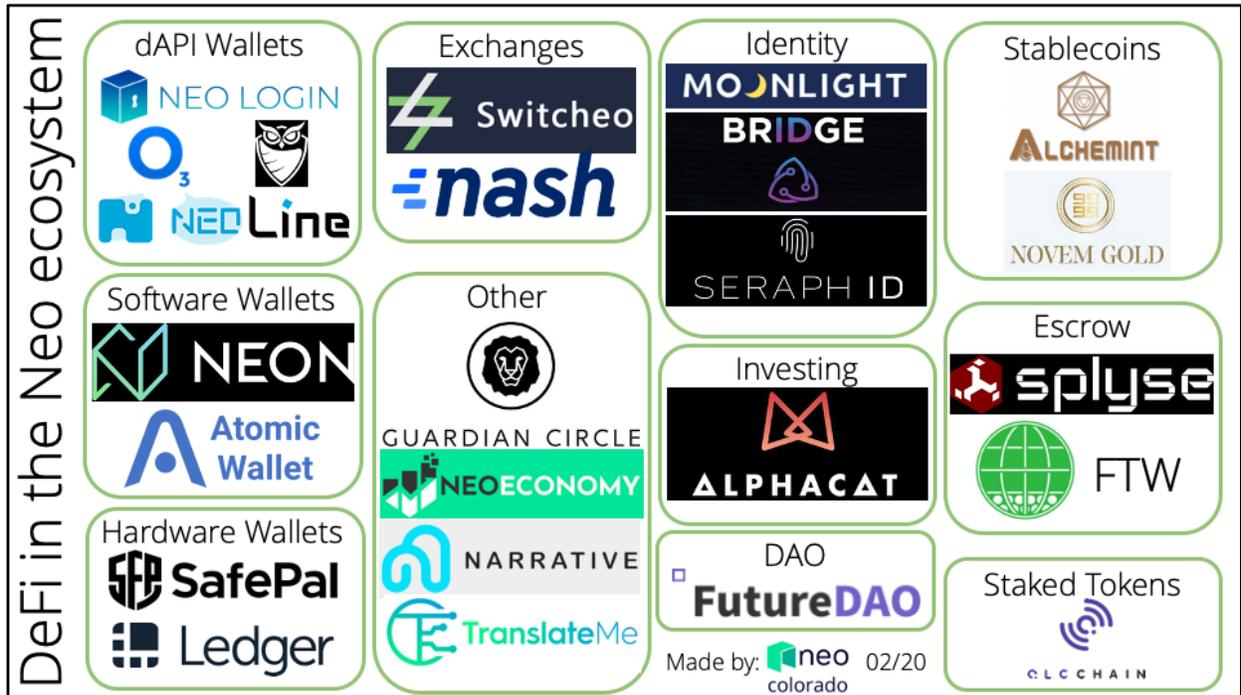
Open emergency response network with a built-in token-based economy.

### Requirements

- Free wallet creation
- Low transaction costs



Guardian circle uses its native token, GUARD, to reward individuals for responding to emergencies, as well as for third party hardware providers to stake into the network and integrate their devices (i.e., Life Alert automatically notifying friends and family when grandma needs assistance). As there is no cost to create a Neo address (like there is in EOS), Guardian Circle chose to launch on Neo.



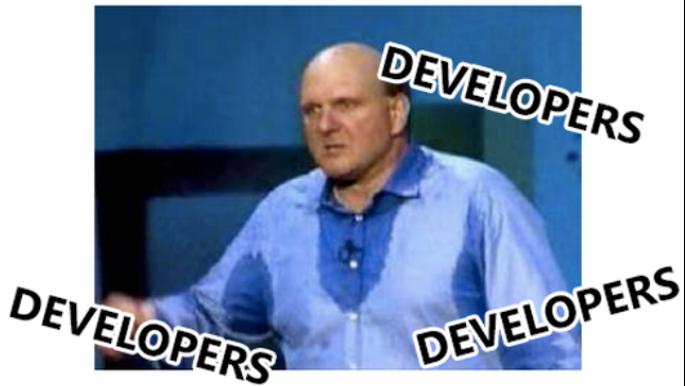
dAPI enabled wallets are similar to Meta Mask; they allow users to connect to dApps and other platforms. Staked tokens refer to projects that have spun their own blockchain, but use their NEP-5 tokens to stake for rewards in the new chain's native tokens; SWTH is next.

Polyglot protocol.

Manageable chain size.

Fast tx confirmations.

Resources.



No need to learn a new language. (Plus, I'd imagine decoupling NeoVM might make it easier?)

Size of full chain much more manageable for local development (15 GB versus 100 or 200 GB).

Comprehensive platform (oracle, storage, blockchain, ID).

Grants/bounties available (COZ and NGD).

Media and outreach support to highlight your project and progress (NNT coverage mostly, Neo Live)

100% finality and quick blocktimes confirm tx made it to chain (faster than ETH)

## Polyglot ecosystem

NeoVM compatible with multiple languages.

C#	Python
VB.Net	C
F#	C++
Java	Golang
Kotlin	Javascript

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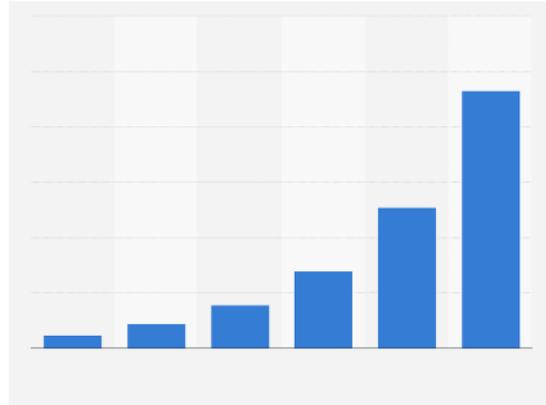
Note: While this is true, be aware that you still need to understand the supported features of those languages for contract development (you can't use the entirety of the python language because it isn't fully supported by the compiler).

## Blockchain size

Neo: 15 GB

Ethereum: 121.8 GB

Bitcoin: 261.2 GB



Size of the full chain is much more manageable if you need to build your own infrastructure. There's a limited need for Infrastructure-as-a-Service (IaaS) entities in the Neo ecosystem; much more manageable to synchronize local copy of the blockchain with the one that is stored distributed on the network.



Community repo's:

- Neo: <https://github.com/neo-project>
- COZ: <https://github.com/CityOfZion>
- NewEconoLabs: <https://github.com/NewEconoLab>
- Red4Sec: <https://github.com/Red4Sec/>
- Neow3j: <https://github.com/neow3j/neow3j>
- NeoResearch: <https://github.com/NeoResearch>
- NeoSPCC: <https://github.com/nspcc-dev>
- NEO-ONE: <https://github.com/neo-one-suite/neo-one>
- NEXT: <https://github.com/NeoNextClub>

## Coverage, media support, and events



**Neo Live**



**NEONEWSTODAY**

Neo announced the EcoBoost program in 2019, which has thus far leveraged partnerships to increase exposure for projects. Beyond technical and financial support, the Neo ecosystem offers opportunities to be heard and be seen.

## Build a token, dApp, or game

COZ workshop: <https://github.com/neo-project/docs/tree/master/docs/en-us/workshop>

TypeScript: <https://neo-one.io/tutorial>

Neo documentation: [https://docs.neo.org/tutorial/en-us/9-smartContract/What\\_is\\_nep5.html](https://docs.neo.org/tutorial/en-us/9-smartContract/What_is_nep5.html)

Neo Game Developer Guide: <https://neo-one.io/tutorial>



## Tutorials and Documentation

Neo Tutorial: <https://docs.neo.org/tutorial/en-us/index.html>

Video course: <https://neocourse.mywish.io/>

Neo documentation: <https://docs.neo.org/docs/en-us/index.html>

Neo Discord for live answers:



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contracts: {
  // NEO-ONE will look for smart contracts in this directory.
  path: 'neo-one/contracts',
},
artifacts: {
  // NEO-ONE will store build and deployment artifacts that should be checked in to vcs in this directory.
  path: 'neo-one/artifacts',
},
migration: {
  // NEO-ONE will load the deployment migration from this path.
  path: 'neo-one/migration.js',
},
codegen: {
  // NEO-ONE will write source artifacts to this directory. This directory should be committed.
  path: 'src/neo-one',
  language: 'typescript',
  // NEO-ONE will generate code in the language specified here. Can be one of 'javascript' or 'typescript'.
  framework: 'react',
  // NEO-ONE will generate client helpers for the framework specified here. Can be one of 'react', 'angular', 'vue' or 'none'.
  // Set this to true if you're using an environment like Expo that doesn't handle browserify dependencies automatically.
  browserify: false,
  // Set this to true if you're running in codesandbox to workaround certain limitations of codesandbox.
  codesandbox: false,
},
network: {
  // NEO-ONE will store network data here. This path should be ignored by your vcs, e.g. by specifying it in a .gitignore file.
  path: 'neo-one/network',
  // NEO-ONE will start the network on this port.
  port: 9840,
},
// NEO-ONE will configure various parts of the CLI that require network accounts using the value provided here, for example, when deploying contracts.
// Refer to the documentation at https://neo-one.io/docs/configuration for more information.
networks: defaultNetworks,
neotracker: {
  // NEO-ONE will start an instance of NEO tracker using this path for local data. This directory should not be committed.
  path: 'neo-one/neotracker',
  // NEO-ONE will start an instance of NEO tracker using this port.
  port: 9841,
  // Set to true if you'd like NEO-ONE to skip starting a NEO tracker instance when running 'neo-one build'.
  skip: false,
}
}

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: bash
└─ zep-observable-ts@0.8.20
  Done in 17.25s.
(base) [alexfrangop ~/Documents/Development/NEO/neo-one-demo/my-neo-dapp (master +)]$ yarn neo-one init
yarn run v1.19.1
$ rimraf src/contracts src/development/NEO/neo-one-demo/my-neo-dapp/node_modules/.bin/neo-one test
Created src/_tests_/HelloWorld.test.ts.
Created neo-one.config.ts.
Created neo-one/contracts/helloWorld.ts.
Updated tsconfig.json.
NEO-ONE initialized, run 'neo-one build' to deploy the HelloWorld smart contract to a local development network.
Done in 3.49s.
(base) [alexfrangop ~/Documents/Development/NEO/neo-one-demo/my-neo-dapp (master +)]$
```

Write applications for the Neo blockchain, using NEO-ONE framework, which is an equivalent to Truffle in the Neo ecosystem.

Recommend Create React App to get started. Tutorials for entry-level blockchain devs, and documentation for the seasoned vets. This presentation covers the early portion of the tutorial.

Link: [https://youtu.be/8x\\_6UuL2w2A](https://youtu.be/8x_6UuL2w2A)

Thank you, NEO-ONE!



Why did Neo Colorado start? To leverage global relationships....



NEO·ONE



 CITY OF ZION

at a local level.

Find COZ and NEO-ONE documentation in the community resource groups slide above.



neo-burner was inspired by Austin Griffith's work in the Ethereum ecosystem. The neo-burner project is in the beginning stages of building an equivalent for the Neo ecosystem.

At this point in time, there is ability to generate paper wallets with very basic understanding of JavaScript and HTML.

The wallets for the Neo Colorado BUIDLWeek event were created using the Electron-based application.

Users can create number of wallets of their choice, customize the background, and choose unique URLs to send users to.

Currently working on making the process more efficient and user friendly, and incorporating the burner functionality.

neo-burner



neo-burner GitHub



If you're interested in contributing to the neo-burner project, visit the link below:  
<https://github.com/CityOfZion/neo-burner>

[www.meetup.com/Neo-Colorado](http://www.meetup.com/Neo-Colorado)

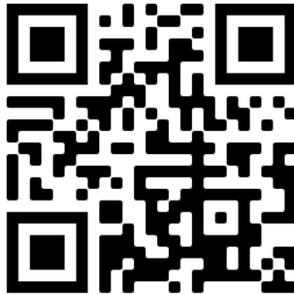
dylan@neonewstoday.com

[www.NeoColorado.com](http://www.NeoColorado.com)

- Questions?
- Feel free to contact me with any inquiries about what we've discussed, opportunities, or if you'd like to be put in contact with any particular individual.

## Neo Giveaway

Neon Wallet: <https://neonwallet.com/>



Neon Wallet



If you're interested in contributing to the neo-burner project, visit the link below:  
<https://github.com/CityOfZion/neo-burner>