

Deep Dive into Litecoin (LTC)

Cryptocurrency for instant, near-zero cost payments

October 16, 2018



What is Litecoin?

- Open source, P2P cryptocurrency that enables fast and near-zero payments between anyone, anywhere in the world.
- Created in October 2011 by an ex-Google and ex-Coinbase engineer, Charlie Lee, as an alternative to Bitcoin.
- The goal was to solve some of the issues faced by Bitcoin, such as transaction times, high transaction fees, and concentrated mining pools, and enable larger-scale adoption by individuals and businesses.



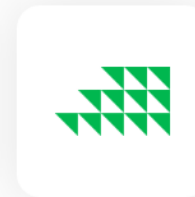
User and merchant adoption

- Litecoin can be used by individuals to make purchases in the real world more easily than most other cryptocurrencies because it is supported by a growing number of wallets and crypto debit cards.
- Litecoin has also made progress on the merchant side as they have been expanding their point-of-sale payment gateway and banking services to make it easier for merchants to accept Litecoin as a form of payment.

Select card wallets



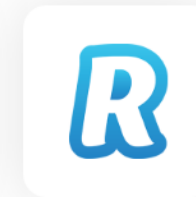
Wirex



Shift Card



MCO



Revolut



Cryptopay

Select gateway wallets



Coingate



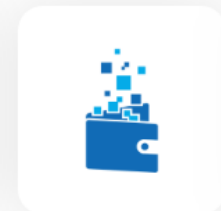
Paybear



Coinbase
Commerce



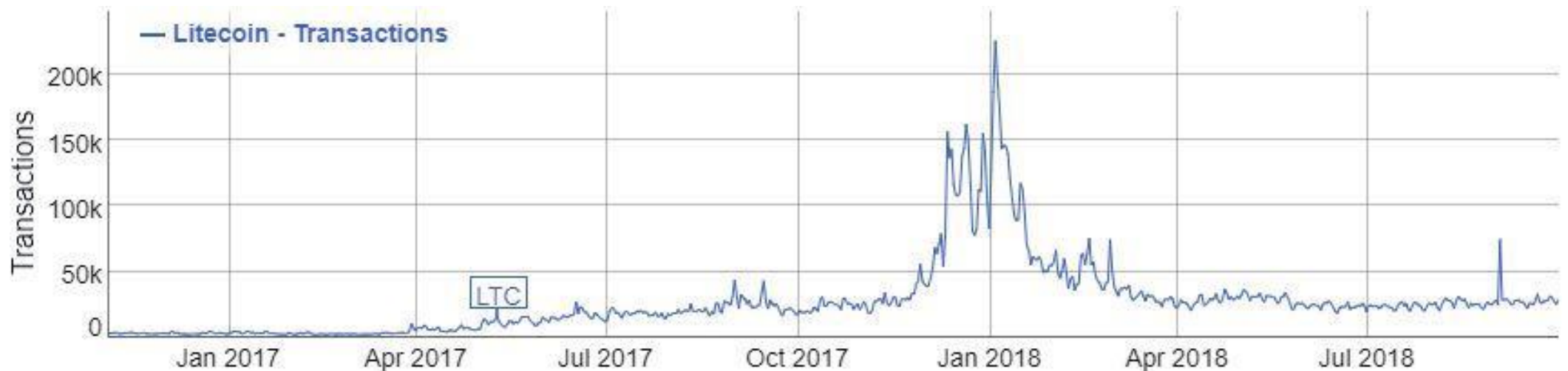
Coinify



Coinpayments

Network usage stats

- The Litecoin network has decent usage. On average, Litecoin processes around 20,000 to 30,000 on-chain transactions a day.
- The chart below shows the usage of the Litecoin network for the past two years:



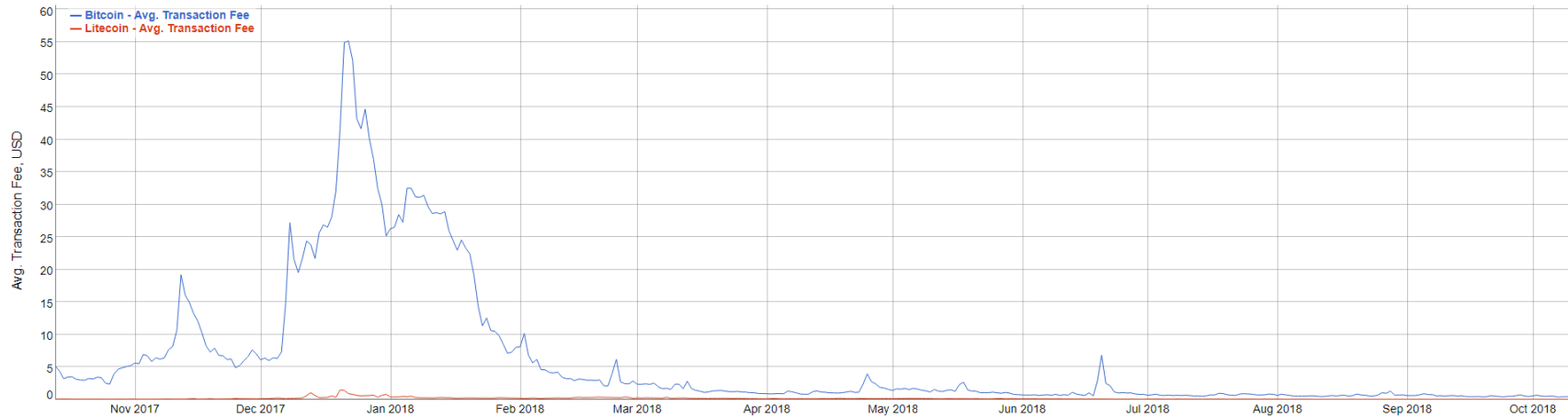
Litecoin versus Bitcoin

- **Hashing algorithm:** Both use proof-of-work as its consensus algorithm, however, Litecoin uses a different hashing algorithm – scrypt instead of Secure Hash Algorithm (SHA) 256.
 - Scrypt is more memory-intensive than an algorithm that is not memory-hard. Processes are run in parallel with scrypt as opposed to serially with SHA-256, and as a result, scrypt requires more memory.
 - One of the benefits of using scrypt is having a network that is more accessible and democratized. To compete, miners can acquire more memory instead of having to acquire specialized ASICs as is the case with Bitcoin. In theory, normal people can become miners with Litecoin, whereas concentrated mining pools / ASIC plants already dominate the Bitcoin mining.



Litecoin versus Bitcoin (continued)

- **Transaction fees:** Transactions on Litecoin are significantly cheaper than Bitcoin.
 - Litecoin and Bitcoin average transaction fees (past 12 months):



- **Speed:** Litecoin is designed to be 4x faster than Bitcoin as average block confirmation times are 2.5 minutes, instead of 10 minutes.
- **Supply:** Litecoin has a total supply of 84 million coins vs. 21 million coins for Bitcoin.

Litecoin versus Bitcoin (continued)

	Litecoin	Bitcoin
Creation date / founder	Oct 2011 by Charlie Lee	Jan 2009 by Satoshi Nakamoto
Total supply	84 million LTC	21 million BTC
Market cap (based on circulating supply as of Oct 1, 2018)	\$3.6 billion	\$114 billion
Block confirmation time	2.5 minutes	10 minutes
Block size limit	4 MB	4 MB
Hashing algorithm	Scrypt	SHA-256
Block reward scheme	Initially at 50 LTC, halved every 840,000 blocks	Initially at 50 BTC, halved every 210,000 blocks
Current block reward	12.5 BTC (next halving estimated to occur in May 2020)	25 LTC (next halving estimated to occur in Aug 2019)

Key features

- **Proof-of-work:** Litecoin uses proof-of-work, which is a consensus mechanism that relies on a difficult computational task to secure the network from malicious actors. Miners compete to solve the task the fastest and are rewarded accordingly.
- **Script:** Litecoin uses the script hashing algorithm.
- **Segregated Witness (SegWit):** SegWit increased the block size limit of Litecoin from 1 MB to 4 MB by removing signature data (i.e. the “segregated” part) a transaction while ensuring the transaction is still safe and secure (i.e. the “witness” part).
 - Allows for increased transaction output and enables other features and applications, such as the Lightning Network, MAST, Confidential Transactions, and Schnorr Signatures, to be implemented.

Key milestones

2011-2013

Oct 2011: Litecoin was officially released on GitHub and the network goes live shortly after.

Nov 2013: Litecoin reached a market cap of \$1 billion for the first time.

Dec 2013: Litecoin v0.8.6.1 was released. This was a significant release with improvements such as popular wallet features like Coin Control, faster validation, faster propagation, etc.



2014-2016

Jan 2014: Litecoin wallet for Android was officially released.

Apr 2014: The beta of Electrum, a Litecoin wallet, was released.

Jun 2015: Litecoin v0.10.2.2 was released and represented the official release version of Litecoin Core. This was a significant release, and was the technical equivalent of Bitcoin v0.10.2.



2017-2018

Jan 2017: Litecoin Core v0.13.2 was released, a major release with a protocol level improvements, code optimizations, etc. Segwit was activated on testnet.

May 2017: Activated SegWit and completed the first payment transaction on the Lightning Network with the transfer executed in under one second.

May 2018: Litecoin Core v0.16.0 was released, a major release that provided full support for segwit in its wallet and user interfaces.

Future development

- Following the activation of SegWit, Charlie Lee had spoken about adding features such as Lightning Network, MAST, Confidential Transactions, and Schnorr Signatures, however, no roadmap has been provided yet. In fact, all the proposed upgrades are features from other blockchain and not unique to Litecoin. Most of the upgrades are also being developed on Bitcoin as well.
- In the 2018 Litecoin Summit, Charlie Lee presented his metrics of success for Litecoin:
 - Network security
 - Market capitalization
 - Exchange liquidity
 - Merchant support
 - Currency usage

Token economics

- Litecoin currently has a block reward of 25 LTC per block. Halving occurs every 840,000 blocks (approximately every four years) based on a block time of 2.5 minutes so the block reward is expected to drop to 12.5 LTC in around August 2019.
- The circulating supply is currently 58,724,902 (as of October 14, 2018); this figure will gradually increase to the total supply of 84 million LTC sometime in the mid-2100s after which no new coins will be minted.

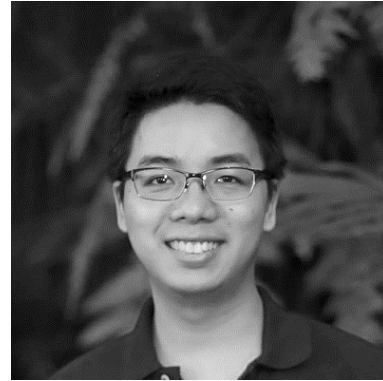
Team



Charlie Lee

Founder of Litecoin, and Managing Director of the Litecoin Foundation

Previously Director of Engineering at Coinbase where he worked for 4 years. Before that, he worked at Google for 6 years as a Software Engineer on numerous projects including YouTube Mobile, Chrome OS and Google Play Games.



Xinxi Wang

Litecoin Foundation Director

One of the Founding Member of the Litecoin Foundation and is one of the developers behind Litecoin Core. He is also the Founder and CEO of Coinut Exchange, a Singapore-based cryptocurrency trading platform that was established in December 2013.



Franklyn Richards

Litecoin Foundation Director

One of the Founding Members of the Litecoin Foundation and currently operates Litecoin.com. He is the COO of Zulu Republic, a blockchain startup that aims to create an ecosystem of digital platforms built on the Ethereum blockchain.



Zing Yang

Litecoin Foundation Director

A Director of the Litecoin Foundation since May 2018 and was previously at BlockAsset Ventures, a blockchain-focused VC firm, from January to May 2018. Prior positions include Associate Director of Investments at Temasek and Director and Co-Founder of Greenergy Global at Biomax Technologies.

Strengths

- Community – Having started out in 2011, Litecoin is among the oldest and most mature blockchain projects and has built a large community. Looking at the number of subscribers on the respective subreddits, Litecoin's community is only behind Bitcoin and Ethereum.
- Litecoin has made good progress in terms of merchant adoption with point of sale, merchant payment gateways and banking services via Coingate, Coinpayments, Coinify, Coinbase Commerce, Gocoin, Paybear, etc.
- Due to its similarity with Bitcoin with the core code being essentially the same, Litecoin could potentially piggyback from research and development breakthroughs achieved by the Bitcoin community.

Weaknesses

- Because it is a fork of Bitcoin, Litecoin does not have unique and/or superior features compared to other blockchains. Some consider Litecoin as a test network of Bitcoin and therefore, a lot of upgrades applying to Litecoin will also be implemented in Bitcoin as well (SegWit is an example). While this would add features to Litecoin that it otherwise would not enjoy, it also makes it less probable to have superior features unique only to Litecoin, making it difficult to stand out.
- As a store of value, Litecoin falls behind Bitcoin significantly in terms of transaction volume and brand recognition, without any major differentiating features.

Weaknesses (continued)

- As a medium of exchange, Litecoin had an advantage against Bitcoin in the early years because it has faster confirmation time, but the newer generation blockchains are even faster. The advantage Litecoin has versus the newer blockchains is in merchant adoption.
 - Layer 2 solutions are being developed which arguably is better for small transactions because of privacy and speed. Lightning Network, which was launched earlier in 2018, already has over 3,600 nodes. Should it become successful, paying with Litecoin is even less compelling.
- Litecoin is backed by the Litecoin Foundation which does not have a lot of resources.
 - See their latest financial statements for more information: <https://litecoin-foundation.org/2018/07/unaudited-financial-statements-2018-05>.

Conclusion

Overall rating: B

- We have a neutral view on Litecoin because while Litecoin enjoys a large community supporting the coin, there is no technical features unique to it. With stable coins and layer 2 solutions becoming more and more popular, Litecoin's value proposition as a sound medium of exchange diminishes.
- If Litecoin is successful in upgrading certain features, those features will be copied to Bitcoin soon, just like how SegWit was done. If the upgrade fails, then it would negatively impact the cryptocurrency.
- Therefore, going forward, we believe Litecoin would not have any major unique advantage that could differentiate itself from other cryptocurrencies.

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