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## Abstract

A purely peer-to-peer version of electronic cash scalable and friendly to use would allow online payments to be sent directly from one party to another without going through a financial institution. We propose a solution to the scaling problem using the Stellar Consensus Protocol (SCP). The network itself requires too minimal structure and everyone without the needing of mining infrastructure can participate and contribute to the network.

## Introduction

Blockchain offers an innovative solution for safe and decentralized payment transfers. The cryptocurrencies developed with the aid of blockchain technology have fairly revolutionized the way we have been making transactions and has infused a level of security and transparency which otherwise is regulated and controlled. Ethereum, goes beyond being just a platform for peer to peer digital currency transfer and offers greater flexibility and wider application of the blockchain technology through smart contracts. This has made it one of the most popular blockchain and has led to exponentially increased traffic in recent years on its blockchain. With smart contract several other cryptocurrencies have been developed on top of Ethereum's blockchain and a lot of businesses rely on this technology for their business transactions and day to day transfers. The major issue with these developments is that it has adversely affected the transaction processing speed of the Ethereum blockchain which in turn poses a viable that to the scalability of this technology.

## Problems with Ethereum

Ethereum and bitcoin use a combination of technical tricks and incentives to ensure that they accurately record who owns what without a central authority. The problem is, it's tricky to preserve this balance while also growing the number of users (especially to the point where average people can use the system to purchase coffee or run applications).

That's because ethereum depends on a network of 'nodes', each of which stores the entire ethereum transaction history and the current 'state' of account balances, contracts and storage. This is obviously a cumbersome task, especially since the total number of transactions is increasing approximately every 10–12 seconds with each new block. The worry is that, if developers raise the size of each block

to fit more transactions, the data that a node will need to store will grow larger – effectively kicking people off the network. If each node grows large enough, only a few large companies will have the resources to run them.

Despite the inconvenience, running a full node is the best way for users to take advantage of privacy and security. Making full nodes more difficult to run would further limit the number of people that can verify transactions themselves. In other words, decentralization and scalability are currently at odds, but developers are looking for ways around this.

## Understanding Ethereum Issues

To understand the slow transaction speed of Ethereum blockchain it is important to understand the concepts of Blockchain, mining and smart contract.

Blockchain is a decentralized ledger which records all transactions and stores it in blocks. Once a block is full, it creates a new block. Any user can get this ledger, verify, and read it. Any computer or computing device with this ledger is referred to as the node.

Whenever a new transaction occurs in the blockchain of any node it sends updated blockchain to other nodes for verification according to the rules defined in smart contract. This process of cross-checking blockchains, verifying the transaction and finding a new block for the blockchain is referred as mining and machines that do this work are called miners. It is not possible to transfer any coin safely, efficiently, and cheaply without having large number of miners dedicated for that coin. It is important to incentivize mining of cryptocurrencies to ensure large number of people mine otherwise any corporation with large number of mining machines can corrupt the blockchain.

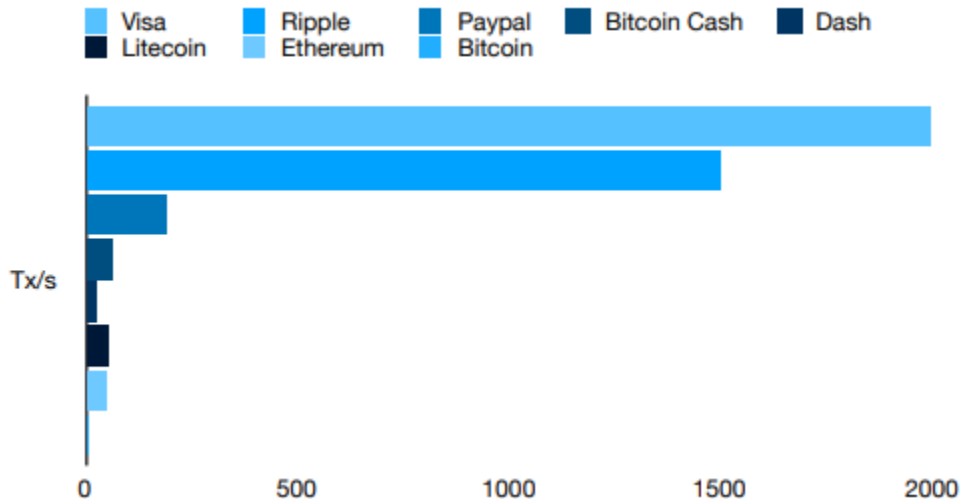
To achieve this goal miners are provided with a small fraction of coin for every transaction verifications done by them and for playing their rule to solve mathematical equation to find a new block of the blockchain. The value of incentive received by miners depends on several factors including value of the coin, number of unlock coins, total number of miners, total number of transactions per second and nature of smart contract.

## Transaction Processing speed comparison

Aided by the blockchain technology a number of cryptocurrencies are exchanging ownership in the market. Estimates say that there are over 1400 cryptocurrencies which are exchanging ownership on popular crypto exchanges and more are in use for a range of purposes.

Given the nature of cryptocurrencies and the fact that anonymity is the key attribute it is not possible to have an exact figure. Apart from making a decentralized currency and ensuring secure transactions one of the most important feature which is often talked about in relation to cryptocurrencies is fast

transactions. However, the fact is that in general if we compare the transaction speeds that is offered by existing transaction mechanisms (visa, PayPal ) that facilitate transactions for fiat currencies we see that in practicality none of the cryptocurrencies are even close to their transaction processing speeds.



While Visa can process 24000 transactions per second and PayPal can process about 200 transactions per second, the most popular cryptocurrency Bitcoin processes only 7 transactions per second on an average.

Though bitcoin cash has shown to process up to 60 transactions per second it is still very slow when compared to Visa or PayPal. To address the issue of slow transaction speeds and make crypto transactions quicker Ripple is the only blockchain based currency with a decent transaction speed which they claim to be up to 1500 transactions per second. "This makes ripple second only to VISA (popular peer to peer transfer) in terms of transaction speed as Ripple proves to be faster than PayPal by over 300%. PayPal with 218 million active users is still the most popular peer to peer fund transfer service provider." But then amidst all the cryptocurrencies Ethereum is relatively very slow with a transaction speed of only up to 20 transactions per second.

Though Ethereum outperforms bitcoin in transaction speeds and was developed with a claim to offer better transaction speeds than that of Bitcoins, with growing congestion on the Ethereum's blockchain it has failed to keep up to the higher transaction speeds. Often, the transactions are not processed and takes hours to get verified.

## Conclusion

Blockchain technology can play a significant role in disrupting the fin-tech industry, the way we make transactions and Ethereum in particular provides a host of opportunities with its applications. However, the slow transaction speed which is largely due to the processes involved in functioning of

Ethereum's blockchain while ensuring the decentralized nature of the platform is a major issue that has to be identified to the core.

With cryptocurrencies gaining popularity amongst individual and group investors the traffic and congestion on Ethereum's blockchain will further increase. Also, with smart contracts startups and businesses are creating their own tokens to raise funds through their ICOs.

This calls for faster transaction verification and processing to make the blockchain and businesses relying on the technology scalable and sustainable. While some research and innovative solution to this crisis is convincing it is yet to be thoroughly tested. Further research is required to explore the possibilities and performance of the proposed solutions.

## **Ethereum X Solution**

Implementing Stellar Lumens technology we make it easy to move digital assets around the world, quickly, reliably and also empowering the true vision of Satoshi's.

We propose a peer-to-peer network using SCP to record a public history of transactions with a limited supply of 100 million coins in existence ever.

Our aim is to provide a global solution of the Bitcoin scalability issues. As eBTC was trying before but launching their token over Ethereum they will find also several scalability troubles.

We offer the community who once believes the Satoshi's vision the following advantages:

### **Worldwide transactions**

Moving money across borders quickly, reliably, and for fractions of a penny never has been too easy. With Ethereum X now we can connect banks, making payments and trusting people all over the world without worrying about double spending issues.

### **Powered by Stellar Lumens**

While Bitcoin and Ethereum are facing large scalability issues Stellar came across with a solution triggering one of the most impressive growing in the Blockchain industry. With the Stellar Consensus Protocol (SCP) Ethereum X can accomplish the Satoshi's vision in a scalable and futuristic view.

### **Fast transactions**

Over the Stellar Network happens the fastest transactions ever build on the Blockchain. 2 ~ 5 seconds and your payment will be on your wallet. A transaction on the network consists of one or more operations. Payments, offers, and fees are all examples of operations that could make up a single transaction.

## Small cost fee

If too many transactions are submitted, nodes propose the transactions with the highest fees for the ledger's transaction set. The consequence is just 0.00001 xlm fee on the overall network. Less than both Ethereum and Bitcoin and with also a much better transaction speed.

## Secure payments

Stellar uses industry-standard public-key cryptography tools and techniques, which means the code is well tested and well understood. All transactions on the network are public, which means the movement of funds can always be audited. Each transaction is signed by whomever sent it using the Ed25519 algorithm.

## Solving Scalability Issues

A conservative estimate of Ethereum X processing rate is 1000 operations per second. The distributed Stellar network is made up of servers running the Stellar Core software. Stellar Core maintains a local copy of the network ledger, communicating and staying in sync with other instances of Stellar Core on the network.

## Coin distribution

In total there will be 100, 000, 000 coins created. 90,000,000 coins for community token sale and 5,000,000 coins will be locked for development purposes. Also 5,000,000 coins will be assigned for bounties. The token sale price will be 1 XLM = 150 ETX.

## Public wallets

We believe in the need of transparency and trust on the global network so we provide the wallets. The one with ninety million coins for the community token sale, the one with the five million coins for the bounty and the final wallet with the five million coins for the development purposes are displayed here:

*Community token sale:*

GD5QWDRW6C3KGVZKCP5CYPDP5H5Y3ZCTGQGO6UHQOE3WKYVIZK6OU

*Bounty campaigns:*

GAJ5Z6VTKZBDN5FU2YYH5WGZNAYGDB7DFCIE6FNDPGIRE4PZEHNWGCYY

*Dev funds:*

GDHW5S65S4WQWOCLPB4YGMNGTSZDFAFWJICCOAFUESDATPXOEXFC66DY

## Token Sale

Token sale will be available through [StellarPort.io](#) a Stellar Decentralized Exchange.