

BITSHARES

# GOKHShteIN

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bitshares™

SEVERELY UNDERRATED?

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Since the inception of BitShares in 2013, it has quietly been a major innovator in blockchain technology. But for the laymen and beginner in this sector, it is quite a lot to just jump in and understand all of the technical details of the what, when and how, aspects of this technology. In a nutshell, BitShares leverages “the power of globally decentralized consensus and decision making (to) more effectively coordinate the allocation of resources toward their most productive and valuable use”. Sounds like its complicated right? Well the details and technical aspects are but I’ll try to make it simple to understand in this concise overview of exactly what BitShares is, a little about their history, and what they stand for as a community as a whole.

## BACKGROUND

So, traditionally companies run with a lot of human management, after all, people need to be there to oversee exactly what’s happening right? Well with the creation of Blockchain technology and the inception of DACs (distributed autonomous companies), BitShares aims to rewrite the thought process of how things are managed, and how goals are met. Take banks for example, a lot of lengthy bureaucratic processes for some of the simplest of processes. Most major corporations like banks have a hierarchy that doesn’t allow very much outside consensus on who exactly is making those major business decisions. With a DAC, the rules that are in place are open-source, and completely auditable and transparent. But how can it be transparent if it’s hosted on a server in control by only a few people? It’s not, hence the word “distributed”. Since it is open source it can be spread across all of the token holder’s computers.

In the original whitepaper put together by Daniel Larimer, Stan Larimer, Charles Hoskinson and Fabian Schuh, they introduced something called “consensus technology”. Consensus is how business decisions are made within groups of people and organizations. Bitcoin was the first to introduce this in a decentralized manner with a peer-to-peer network to “efficiently facilitate the transaction of value”.

## SO ... THAT’S NICE. HOW DOES IT WORK THOUGH?

Not very difficult to understand if explained correctly. I will attempt to do this, and if something is over your head always feel free to consult the BitShares community directly as well as our own community if you need questions answered.

# BREAKING DOWN THE "VOTING SYSTEM"

So, to keep things a little organized the representatives are not randomly selected from the total pool of users because of lack of online users. Every holder of BTS -- the core token of the BitShares Blockchain -- gets a vote for someone to sign blocks in their stead. This person is called a representative (also called a block producer) and are paid independently of uptime, however if uptime is lacking, they are likely to be voted out. These representatives take turns signing blocks, when someone misses out, they are voted off, and eventually others will get their turn. Incentive is paid as a small amount to them directly for having 99% uptime.

BitShares employs DPOS or Delegated Proof-of-Stake. What this does, among other things, is gives each holder of the core token a way to delegate their vote to a person that does not control their coins. This in turn maximizes the performance of the network, and minimizes both the bandwidth and amount required to secure the network, reducing cost. DPOS technology allows for more transactions to occur and also compete with volume at faster speeds than centralized systems like the current ACH system that banks and credit card companies use. The best feature that DPOS technology produces in my personal opinion is that because of the transparency of everything, it allows for every client in a DPOS system "to decide who is trusted rather than trust concentrating in the hands of those with the most resources". So, the fundamental outcome is that the core token holders remain in control.

Confused yet? Yeah me too. However, I think the best way to tell you how this works is to simply state that in a DPOS system the "Block producers" are selected by those who own the tokens, and that with traditional Bitcoin, the "Block producers" are whoever has more money to purchase mining equipment. So, a traditional POW (Proof-of-work) system determines the next block producer by requiring the computer to do the work whereas with a DPOS (Delegated-Proof-of-Stake) system determines the "Block producers" by a stake-vote making it fairer and round-robin so everyone can have a fair chance, rather than just those with the fanciest mining equipment.

# THE AVERAGE STAKE-HOLDER

The BitShares Blockchain features a built-in decentralized exchange (DEX) for all tokens listed on it. Anyone that uses it is required to create a unique handle (account name) which acts as a mailing address. The account name IS the address to send and receive tokens. This simplifies integration and reduces the need to store thousands of addresses with their corresponding keys. Easy. The block producers as mentioned before, are the ones maintaining the network, the “committee members” are those that volunteer to keep the community organized and propose changes to the BitShares networks parameters, like transaction fees. There are other roles as well such as workers that are being paid for what they propose to do like innovating the BitShares network as well as marketers that are paid in referral fees.

Even with all of these roles, those that are simply just wanting to use the DEX are still considered BTS Holders and can cast a vote and influence the DACs business and future integration. BitShares, upon inception and still currently, never makes claims to be a “currency”. They consider the BTS token an utility that gives you a say in the governance of the whole decentralized blockchain. BitShares never did an ICO, yet when you look at it this way it boggles to mind as to why MORE ICOs are NOT using this model? If you invest in a company you should have a say in what direction the company decides to head in, and the same applies to a blockchain. This is the entire philosophy and concept behind BitShares being not only a DEX, but a DAC business that utilizes DPOS technology. Makes a little more sense, now right? I think so. In order to get to this “ah-ha” moment you have to effectively explain all of these aspects of what they are and do individually.

## IN CLOSING...

If you are looking for more information on how to become a role-playing “witness” in the BitShares community they have very extensive documentation and I would like to direct you to their website at [bitshares.org](http://bitshares.org) to learn more about payouts, workers, and how to submit proposals to them as well. We here @gokhshtein magazine have done just this to sponsor this very article, the interview that follows it, and have not only enjoyed working with their community very much, but have learned a great deal about how it all works in the process. It was all very fascinating in a space dominated by traditional ICOs and I personally found myself very surprised I had not heard of this sooner. BitShares is on the cusp of integrating this kind of technology through spreading awareness into many facets of how we transact and do traditional business every day. I believe with some proper research and development by major players both in and outside of this space this form of business will eventually be at the foundation of everything we do in many different industries in years to come. Hats off to the BitShares community and those developing it, truly the most underrated tech in the blockchain field.

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# INTERVIEW WITH STEFAN & FABIAN

SO JUST TO START THINGS OFF, IS IT POSSIBLE TO TELL US EXACTLY WHAT ROLE YOU PLAY AT BITSHARES CONSIDERING THERE ARE DIFFERENT CONTRIBUTION LEVELS IN THE HIERARCHY OR THE "ROLE" YOU PLAY?

## STEFAN:

I am a senior developer at Blockchain Projects B.V. in the Netherlands and an active member of the BitShares community. My public involvement focuses around several workers, mainly the BitShares UI worker (code review) and just recently a marketing worker (organizer). The worker proposal system is what the BitShares Blockchain uses to generate funding in a trustless way for people to engage in the community and evolve it. A worker proposal is put on-chain and voted on by all BTS holders. If it is approved, the Blockchain automatically pays out a defined amount of BTS daily. Funds for workers are provided by the reserve pool, which is in turn refilled by collecting transaction fees for anyone that uses the Blockchain. After all, conducting and publishing this interview is also funded by such a worker proposal.

## FABIAN (a.k.a. @xeroc):

Being part of the BitShares community since its inception, I play multiple roles. Most prominently, I am the developer of the python-bitshares library among countless tools for the BitShares blockchain and other Graphene-based blockchains. Additionally, I am one of the top 3 proxies, which means many BTS holders have put their trust in me so that I can vote on their behalf. Last but not least, I am member of the committee which is a group of entities and businesses on the blockchain that have additional privileges of jointly modifying blockchain parameters (block size, block confirmation times) and transaction fees. Since late 2015, I am full-time in the blockchain space and have founded multiple companies and am now the CTO of the joint venture Blockchain Projects B.V.

WHEN DID YOU ORIGINALLY GET INVOLVED WITH BITSHARES? HOW ABOUT WITH BLOCKCHAIN TECH IN GENERAL? I FIND A LOT OF PEOPLE HAD NO PRIOR BACKGROUND IN A TECHNOLOGY FIELD AND EITHER ADAPTED OR INNOVATED THE SPACE IN THEIR OWN LIKING, IS THIS HOW YOU SEE YOUR STORY AS WELL?

## STEFAN:

I got into blockchain tech in September 2017 when I started working at Blockchain Projects BV, and I also had no prior background there. I came from the university having studied applied mathematics and slipped into the BitShares community during my work. Fabian Schuh (@xeroc, and my mentor) on the other hand is measured in the age of the Blockchain, a grandpa in the field. See his introduction below.

## FABIAN:

I am an entrepreneur and fervent Blockchain advocate who came in contact with crypto currencies in early 2011 and was fascinated by their autonomous nature and social and political implications. As an alumni of FAU Erlangen (Germany), where I earned my doctorate in engineering, I decided to focus on Blockchain technologies, and especially Distributed Autonomous Companies (a concept first introduced by Daniel Larimer). I founded ChainSquad GmbH and have been technical consultant and developer for numerous projects throughout the Blockchain space. Recently, I joined forces with European entrepreneurs in Blockchain Projects B.V. (Netherlands) to focus on development and advocating the advancement of Blockchain technologies in Europe on a larger scale.

SO, AFTER DOING RESEARCH ON HOW MANY PEOPLE (WITNESSES) ARE IN CHARGE OF SECURING THE NETWORK, THE MINIMUM NUMBER IS 11? IS THIS STILL TRUE AND IS THERE A TECHNICAL OR LOGICAL EXPLANATION BY THAT SPECIFIC NUMBER?

The BitShares Blockchain is secured by block producers (witnesses) that do exactly that (produce blocks). The number of block producers is up for vote by the BTS holders. It can be anything between 11 and 1001. For security reasons, the number of block producers should be odd. Currently, there are 25 witnesses producing blocks on the BitShares Blockchain. Given the importance of the number of block producers and for the decentralization of a Blockchain, we would like to emphasize that each active block producer has equal rights and powers to produce a block. Each round, every producer can only produce exactly one block, no more, no less and the time instant at which they have to produce their block is known in advance. Each round, the ordering of block producers is shuffled. Additionally, block producers can be voted out by BTS voters (and proxies) within less than 1 hour.

WITH BITSHARES 2.0, DOCUMENTATION STATES THAT "AS AN EXCHANGE YOU DON'T NEED TO EVER DEAL WITH ADDRESSES AGAIN", I UNDERSTAND THE TECH BEHIND THIS, BUT IS THIS SOMETHING OTHER EXCHANGES BOTH DEX AND CENTRALIZED WILL BE ABLE TO UTILIZE? IS THIS BTS SPECIFIC AND HAVE ANY ENTITIES EXPRESSED INTEREST IN THIS?

This is a feature of blockchains based on the Graphene technology. Opinions here may vary since Graphene is not a defined terminology, yet I would consider BitShares, Steem and EOS based on Graphene (including any forks of those three). There is a whitepaper by the Graphene Foundation that makes an attempt to give a definition. What the statement in the question means is that users are able to choose an account name for themselves on the BitShares Blockchain instead of having to deal with addresses like Bitcoin (hieroglyphic to the common eye). This greatly improves the user experience and facilitates handling the account. Any other exchange is already utilizing that for deposit and withdrawal of any token that is based on the BitShares Blockchain. Imagine withdrawing BTS from a CEX into your own wallet. You simply enter the account name in the CEX as the target.

THE BITSHARES COMMUNITY DEVELOPS AND DESIGNS YOUR TRADING PLATFORM, ARE YOU PERSONALLY HAPPY WITH IT, AND ARE THERE PLANS FOR ANY MAJOR CHANGES OR ADDITIONS IN THE NEAR FUTURE WE CAN LOOK FORWARD TO?

I am personally not an active trader, and as such it is hard for me answer that properly. Considering the frontend and from what I have heard in the community, the current frontend (BitShares UI) is not giving the best user experience. Luckily, this is being tackled with a complete remake of the UI focused on user experience supported by a prominent design studio. Additionally, there is a feature-reduced UI being built whose goal is to provide a beginner friendly and trader targeted experience for interaction with the DEX. On a side note: The current BitShares UI seeks to showcase the vast set of features provided by the BitShares Blockchain and was created back in 2014. It certainly lacks up-to-date and modern design choices and was throughout driven by the community. It is meant as a reference to show the possibilities to invite businesses to build on the BitShares Blockchain as a decentralized platform.

Considering the general advancement of the BitShares Blockchain there has been vast progress lately. The community has funded worker proposals for software development in total over 1 million USD for 2018 alone, and approved already over 2,2 million USD for 2019 for software development, marketing and public appearance. That budget is paid out using bitUSD or bitCNY, both stable coins that are built-in the BitShares Blockchain and peg the value to their FIAT counterpart. Many professional developers and entrepreneurs make their living through those worker proposals, all joining hands to enhance the BitShares Blockchain as a competitive platform. This represents 2% of the current market cap of the BitShares Blockchain, which is astounding for a fully autonomous and decentralized community.



Here is an overview of current projects:

## **BITSHARES COMMUNITY WALLET**

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The community wallet is an open-source and fully responsive web frontend whose goal is to provide a user friendly and trader targeted experience for interaction with the DEX of the BitShares Blockchain.

## **ROSSUL/GRAPHENE LABS TEAM - BITSHARES EXCHANGE UX/UI REDESIGN PROJECT**

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The BitShares UI has been designed in 2014 and was driven by functionality. This worker will provide a redesign that is focused on user experience.

## **THE BITSHARES UI MAINTENANCE TEAM & BEET - YOUR BLOCKCHAIN COMPANION**

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The BitShares UI (aka Reference UI) is constantly being developed, bugs removed and new features and use cases added. Additionally, this worker funds the development of Beet. Interacting with the BitShares Blockchain can be cumbersome if you are not familiar with the importance of key security. In general, every action on the BitShares Blockchain (and any other blockchain) requires the private keys of the involved accounts. When you are then using third party tools (especially closed source ones), the question about trust quickly arises. Being closed source can be a business model, but should not hinder adoption. Beet aims to solve that by providing an open source, audited and fully transparent key management and signing tool that can be locally installed (inspired by Scatter for EOS) and supports multiple blockchains (BitShares, EOS, Steem, and forks of each). In combination with the Hashed Time-Locked Contracts (HTLC), Beet will allow easy-to-use atomic cross chain swaps of tokens.

## **BITSHARES MOBILE APP**

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Mobile phones have become an indispensable part of people's lives, and people are used to handling various things through mobile phones. BitShares is a 24/7 decentralized exchange where people can log in to their accounts at any time to view markets, or trade, or transfer money. Therefore, a mobile wallet with good experience and complete functions is urgently needed in the market. This work implements an open source mobile wallet with native support for Android and iOS (pending).

## **DEXBOT**

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Liquidity – the ability to easily buy and sell an asset at a fair price – is an important marker for any exchange. By the adding of liquidity on various trading pairs, customers can more easily trade, get a better price, and find more stable markets. While primarily a software development project, DEX liquidity greatly benefits from cultivating relationships and encouraging DEXBot use from prominent individuals in the wider market making community. The DEXBot software builds liquidity on markets, is open for all to use, increases the number of transactions on the blockchain, and helps pay for itself through increased trading fees. Better spreads, increased liquidity, and communication with potential power-users of DEXBot will help the BitShares DEX attract more tokens and users.

## **BITSHARES CORE DEVELOPMENT TEAM**

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The BitShares Core (backend) contains all operations that represent the possible interactions with the BitShares Blockchain. The consensus mechanism used is delegated proof of stake. The backend is continuously developed, including bug fixing and consensus unrelated plugins (e.g. Elastic Search database plugin to facilitate access to blockchain operation data while reducing requirements on the server). Once every half year a consensus changing release is done, a so-called protocol upgrade (in contrast to a hard fork). Due to the consensus mechanism there can only be one chain after the protocol upgrade. All consensus changes require the approval of the BTS holders by means of voting. Current consensus changes are listed below (BSIPs).



## BITSHARES IMPROVEMENT PROPOSALS (BSIP)

### Market Fee Sharing

The BitShares Blockchain employs a fixed network fee for its users for every interaction with the blockchain. Those fees are shared with the referrer that onboarded the interacting account. In order to create more incentive for webmasters to refer to the BitShares Blockchain, market fees are collected through trading on the DEX of the BitShares Blockchain. This is an important step to enhance adoption.

### Hashed Time-Locked Contracts (HTLC)

The ability to securely hold tokenized assets within a hashed time-locked contract on the BitShares blockchain is a desirable feature that could be used by many persons, services, and businesses to mitigate risks between participants during asset transfer. HTLC implement conditional transfers, whereby a designated party (the “recipient”) will reveal the preimage of a hash in order to execute the asset transfers from a second party (the “depositor”), else after time lock expiry “depositor” may retrieve their assets. No third-party escrow agent is required, rather the HTLC operation enforces conditions, evaluations and transfers through the BitShares consensus protocol. This is the first step towards cross-chain atomic swaps, which are essential for a decentralized exchange to allow trading of assets in a true trustless setting.

### Custom Active Authorities

Every account interacts with the BitShares Blockchain by means of signed transactions indicating the desired action of the user. This has the benefit that there is no central authority that needs to be trusted, and brings the downside that the user needs to secure the private key to create the signatures. A compromised private key likely result in permanent loss of the contained funds.

Custom active authorities allow to create additional keys with specific purpose (everything else is prohibited), for example for users of the DEX a so-called Trading Key, which only allows trading on predefined markets. The implementation is flexible and allows full customization of the restrictions what the key can do. This also enhances security for businesses that are running automated software for interaction with the blockchain by creating keys that only allow the intended use case.

Other

### PUBLICLY APPROVED BITSHARES REPRESENTATIVE

The distributed governance may result in certain aspects not being continuously tended to, which is a dealbreaker when it comes to legal matters. The BitShares Blockchain Foundation has obtained a mandate through this worker proposal to represent the BitShares Community in legal matters, including e.g. dealings with regulators and exchange listings.

### HACK THE DEX - A BITSHARES BUG BOUNTY PROGRAM

The bug bounty program gives incentive to security researchers and penetration testers to disclose vulnerabilities, and enhance the security of the Blockchain. Payouts are up to 25,000 bitUSD.

### BITSHARES.ORG

The initiative is a clear path to an updated, optimized and professionally managed BitShares.org domain/website that will provide a professional and corporate experience to our visitors, clients and on-boarding businesses, completed with a monthly newsletter and fresh branding.

Getting back to the questions:


IN YOUR OWN OPINION WHAT ARE THE ADVANTAGES OF THE BITUSD VERSUS OTHER SO CALLED "STABLECOINS" AND TETHER? THIS SEEMS TO BE A HOT TOPIC LATELY SINCE THE INCEPTION OF SO MANY DIFFERENT KINDS, WHAT MAKES YOUR OWN "SMARTCOIN" UNIQUE AND MORE USEFUL THAN ALL THE OTHERS TO CHOOSE FROM?

BitUSD and its siblings (BitCNY, BitEUR, etc.) are collateralized debt obligations and not minted like other "stablecoins" by a centralized business that claim full reserves and backing. This concept is also what e.g. MakerDAO's DAI evolved from. The basic difference is that the backing is based on another crypto token on the same Blockchain, such that full reserves is not only publicly auditable but also a technical requirement that is enforced by smart contracts (the loan agreement). That makes bitassets inherently more trustworthy than centralized "stablecoins".

RECENTLY THERE IS A LOT OF TALK ABOUT BINANCE AND THEIR SO-CALLED "DEX" EXCHANGE. DO YOU THINK THIS WILL BE MAJOR COMPETITION SO TO SPEAK FOR BITSHARES?

We very much welcome the initiative of Binance to take a step towards decentralization -- in fact the BitShares community has applied for the Binance Dexathon -- and appreciate the additional spotlight on decentralized exchanges (DEX). If the market decides that a "DEX" offered and operated by a centralized entity sufficiently fulfills the need for trustworthiness and transparency as compared to a community-driven, fully transparent and permissionless Blockchain that anyone can participate in, then there are bright prospects for Binances' chain. Will it become a competitor to the BitShares Blockchain? The Binance chain has potential to host a decentralized exchange in the case that they take further steps to decentralize block production and other aspects, and become truly permission-less. What we can interpret from the available documentation, the Binance chain will allow non-custodial use of the core token BNB, with custodial colored coins (IOUs) for external tokens like BTC and BTS.

The downside of a fully decentralized platform like the BitShares Blockchain is (oh the irony) the lack of a central authority that can enforce how things are done, including the marketing budget. I suspect that a CEX will always have a bigger marketing budget than the BitShares Blockchain, and that is the key to onboarding the curious and new-in-crypto users.

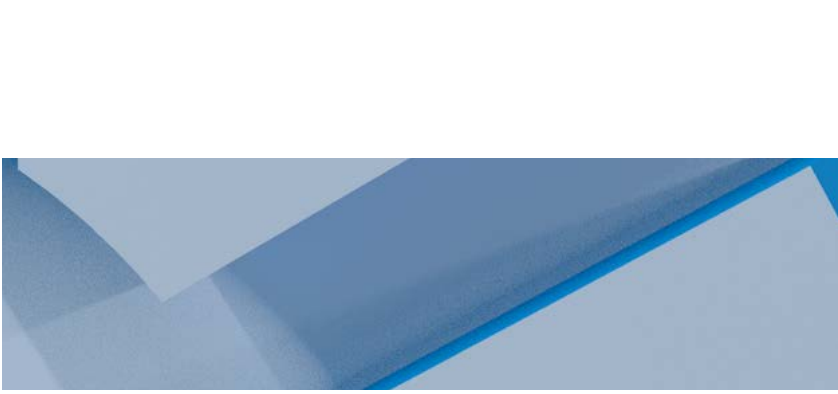


IN YOUR OWN OPINION AFTER READING INTO THEIR EXCHANGE, DO YOU FEEL IT IS A TRUE “DEX” LIKE BITSHARES? IF NOT DO YOU THINK IT WILL HAVE ITS OWN STRENGTHS AND WEAKNESSES TO LESS “TECH-SAVVY” INDIVIDUALS NEWER TO BLOCKCHAIN TECHNOLOGY?

These days, the term “DEX” became very much a buzzword for marketing with only few people understanding its meaning. So far, Binance’s DEX hasn’t launched and thus, we could only speculate on its success.

AS MAJOR MEDIA AND GENERAL AWARENESS ABOUT BLOCKCHAIN TECHNOLOGY INCREASES, IT BECOMES EASIER TO USE FOR THE AVERAGE PERSON. DO YOU FEEL THAT MOST PEOPLE COMING INTO THE MARKET OR ADAPTING TO IT WILL SEE THE BENEFITS OF A DEX OVER AN EXCHANGE LIKE BAKKT?

Similar to the answers above, this really depends on market needs. There will always be markets that cannot legally operate on a public Blockchain, while other markets will only stay competitive if they moved onto a public Blockchain. In the latter case, the BitShares Blockchain represents the entity that offers a trading environment for custom tokens the -- easiest, the cheapest and safest, provably and reliably since 2015.



AS A FINAL QUESTION, DO YOU FEEL THERE IS A NEED FOR MORE AWARENESS ABOUT THE BENEFITS OF DEX’S AND HOW TRANSPARENCY AND COMMUNITIES LIKE BITSHARES CAN BENEFIT THE INDUSTRY?

We certainly agree with the sentiment of the questions. Additionally, to the need for more awareness (also on the technical details), we believe that the experienced BitShares community could be beneficial to many projects. For instance, the MakerDAO concept of DAI and SAI evolved from the origins of bitsharestalk.org, a platform where the pros and cons of crypto collateralized loans (like bitUSD) are constantly discussed.

ONE LAST COMMENT, YOU WANTED TO HIGHLIGHT THE “SCAM” THING AND PUT THAT TO A REST, DO YOU HAVE ANY FURTHER COMMENTS ON THIS SUBJECT BEFORE WE’RE FINISHED?

*There are articles and publications on the BitShares Blockchain now and then, and unfortunately there are sometimes comments like “this is not dead yet?”, “this is a scam” or other unwarranted FUD. The BitShares Blockchain is a fully decentralized platform, which is a beauty and a curse. In the case of a decentralized community with a permissionless Blockchain it is a curse because it allows anyone to build on top of it, including scammers and fraudsters. For example, there is no central authority who can remove or hinder people to create assets whose only target is to relieve the users of their other valuable tokens. This does not make the platform a scam and the users need to be educated in the matter. It merely shows that a truly permissionless platform requires well educated users that understand the need to do their own due diligence, a fundamental requirement in the crypto currency space that the entire community has yet to learn. In the case of the BitShares Blockchain, there are many serious and profitable businesses making use of the BitShares Blockchain as their fundamental core technology. These businesses will soon leverage the true spirit of synergy as they are based on a common ledger.*

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