



Gamifying the Stock Market, so anyone can play

White Paper

Jennava Ltd.

2017-10-18

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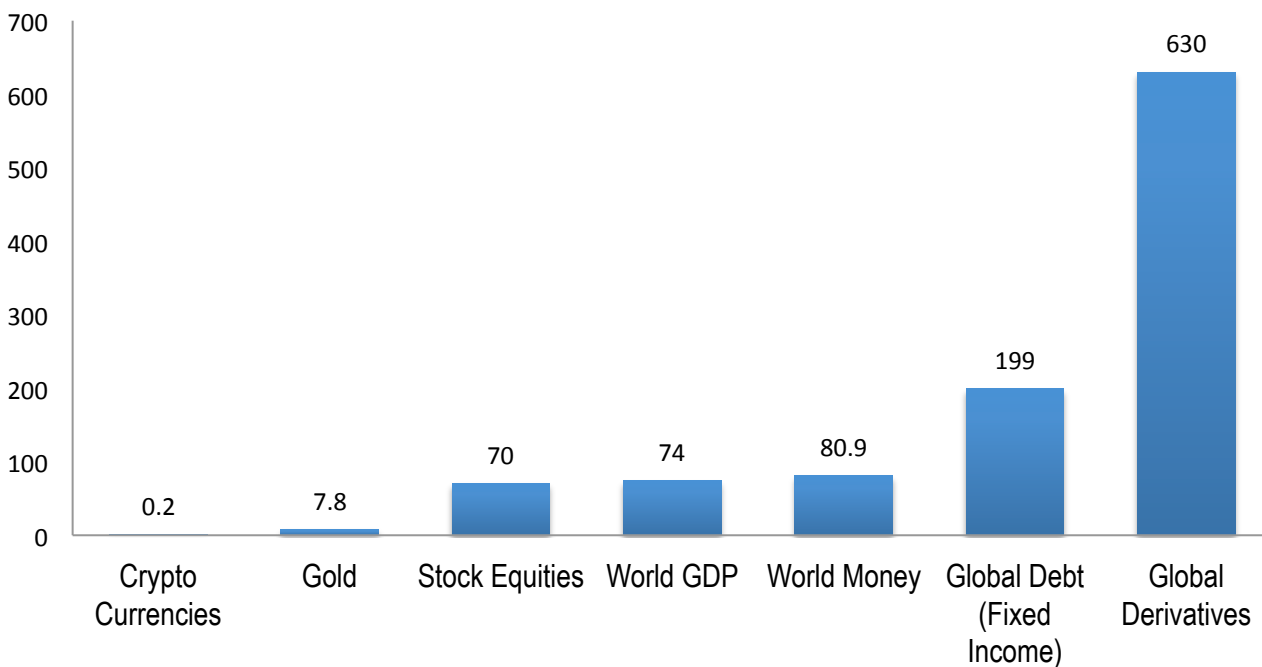
Abstract

Gaming/gambling on stocks is big business. It is limited only by regulations. IG Group, Binary.com and Nadex.com are only some of the companies that provide financial betting, but they suffer all of the disadvantages of online gambling sites. Despite being limited mainly to the UK or Europe, IG Group is one of the largest firms in the UK.

In the context of StockBet, the stock market refers to equities, fixed-income and derivatives. Some claim that it is the world's largest casino. Average holding time of stocks in the U.S. is four monthsⁱ. Traders hold it for only a few weeks or days. Is this investing or gambling? According to The Economist and CNBC, the Chinese play the stock market like a casinoⁱⁱ. According to CNBC, there "are more than 200 million trading accounts in China. That's the same size as America's adult population."ⁱⁱⁱ

When you buy a stock, you are betting that it will go up. When you sell a stock, you are betting that it will go down. Traders, CNBC, Reuters, Bloomberg, Wall Street Journal and most stock "investors" use the word "bet" frequently. Others argue that it is an activity that requires skill.

The size of the stock market gives us an idea of the amount of potential gaming activity. When combined, equities, fixed-income and derivatives make the stock market the biggest super asset class in the world, by far. Even a tiny percentage of this represents a huge number that is much bigger than all of the crypto currencies combined.



Source: Visual Capitalist (Trillions of USD)

According to Investopedia^{iv}: "the derivatives market is, in a word, gigantic, often estimated at more that \$1.2 quadrillion." "What's a derivative? A derivative is a *contract* between two or more parties that derives its value

from the performance of an underlying asset, index, or entity." ^v Essentially, it's a bet. If you buy one, you are betting that one thing will happen. The seller is betting that it doesn't.

With casinos and sports betting, the "house" is usually the winner. Consequently, Macao and Las Vegas make so much that entire cities were created. However, bets on online casino sites average \$1-10 each. These are micro transactions compared to stock related bets. Casinos pale in comparison to the really big houses found in New York, London, Hong Kong, Paris, Frankfurt, Toronto, Singapore, Shanghai, etc.

Consequently, casinos are small fry compared to the brokerages that include Goldman Sachs, Bank of America, Citigroup, J.P. Morgan Chase, TD, HSBC, Fidelity, Scottrade, Charles Schwab, E-Trade, Barclays, Interactive Brokers, Lloyds Bank, SHK (Hong Kong), Haitong, Saxo Bank, Ping An (China), Guosen, Huatai, China Merchant, Everbright, etc. Thanks to the government, they have been able to ward off competition in this lucrative business. According to Boston University Law Review, stock trading is identical to gambling and the government is minimizing competition to maximize their own tax revenue (additional info: <https://stockbet.com/#!/support/gambling>). Even more egregious than this, is that when these firms (gamblers) lose their bets, you the taxpayer pay for their losses.

Currently, for you to play with stocks through a broker, you will have to prove your identification, fill out forms, go through multiple levels of KYC/AML, deposit a minimum amount (which is usually thousands of dollars), wait a few days for deposit to clear and pay \$10 per trade. This is a significant admission price to play. You can also play derivatives, such as Financial Spread Betting (FSB) and Contract For Difference (CFD), and Binary Options (BO) on sites such as IG.com, Binary.com or Nadex.com, but you need to prove your identification, which can take 1-3 days, and you'll pay expensive fees to deposit your money. To withdraw, it can take 1-5 days. Millions or billions of people in the world cannot satisfy these requirements (or do not want to). Moreover, your identity and money can be stolen.

Unlike many token offerings, StockBet already has working software. StockBet.com currently enables players from anywhere in the world to play on its BullBear game with StockBet.com's "chips". BullBear enables players to bet on North American, European and some Asian stocks and indexes. StockBet.com creates and provides these chips for free to newly registered users. The chips are unexchangeable and unredeemable into any other entity. The issue with these chips is that whenever a user has lost chips, he can get more by registering a new account. This reduces the fun and meaning of winning for the winner.

Jennava Ltd. (hereafter referred to as "Company") built and owns the source code to StockBet.com. With funding from a token sale, Company plans to:

- build a blockchain-based platform and API for 3rd party developers and affiliates
- convert StockBet.com's BullBear into a DApp for the a blockchain
- replace the chips with a new token
- gamify FSB, CFD, BO and add other new games so that players will have more games to play with

The ecosystem of the blockchain, platform/API, games, DApps and token will be referred to as StockBet.

With decentralization, StockBet will enable the world, not just the elite, to play stock market related games.

Tokens are Functional and Integral to StockBet

According to a Coindesk article ^{vi}, most projects do not use their tokens in their applications, as their tokens do not really serve any function: "... many projects are putting on a song and dance, giving investors the impression that the token they are selling is an integral part of a working, or almost working, smart contract. But this is often far from the truth..." "And what buyers do not realize is, in most cases, what they are buying is nothing more than a number on a spreadsheet managed by that token's smart contract."

As this white paper will explain, Stockbet Tokens will be integral to StockBet. StockBet cannot work without a "chip" or token.

Legal Considerations

There have been many Initial Coin Offerings (ICOs) recently, with questions about their legality and regulatory compliance. They used words like "invest" and "investor" and explained how the value of their coins can increase. We believe that this makes the coin seem like a security. If an ICO is deemed to be selling securities, it could be subject to legal action and regulators can look back several years. If this happens, this will be negative to not only the founders, but also the buyers, as the coins can be shut down, in which case, everyone loses.

Therefore, we want to protect not only ourselves, but also the buyers and users of our new token. To do this, we want to be clear that this is not an ICO. This is a sale of StockBet's token to enable buyers to play StockBet's games.

StockBet Tokens are functional utility tokens within the StockBet platform. StockBet Tokens are not securities. They are non-refundable and are not for speculative investment. No promises of future performance or value are or will be made with respect to StockBet Tokens, including no promise of inherent value, no promise of continuing payments, and no guarantee that StockBet Tokens will hold any particular value. StockBet Tokens are not participation in the Company and they hold no rights in said company. StockBet Tokens are sold as a functional good and all proceeds received by Company may be spent freely by Company absent any conditions. StockBet Tokens are intended for players to play games for fun.

Company is selling tokens as the new "chip" for players to use in the games that simulate stock market activities or games that enable players to compete and have fun based on stock market data. Players will not be able to "cash-in" the StockBet Tokens with Company. Company will not redeem, refund nor exchange players' StockBet Tokens into another entity.

We plan to open the source code and open the governance to the owners of StockBet Tokens, to enable them to change StockBet in any way they wish.

StockBet, the Open Platform

The Company's strategy and vision is to build StockBet into a platform, much like how Ethereum is a platform for ICOs and how iOS, Android and Facebook are platforms for developers. Our goal is to build a platform and API so that, not only we, but any third party developer can easily and quickly build stock market related games.

Even though the Company will build the first DApps, we do not know all of the possible DApps and games that can be built and played. We believe that there are potentially dozens or hundreds of stock market related DApps that can be built, some of which we cannot even imagine today.

Like Ethereum, StockBet will provide APIs or virtual machines. This way, any developer in the world can propose and add a new game or DApp. StockBet Token owners will vote on all proposals. See governance for more details.

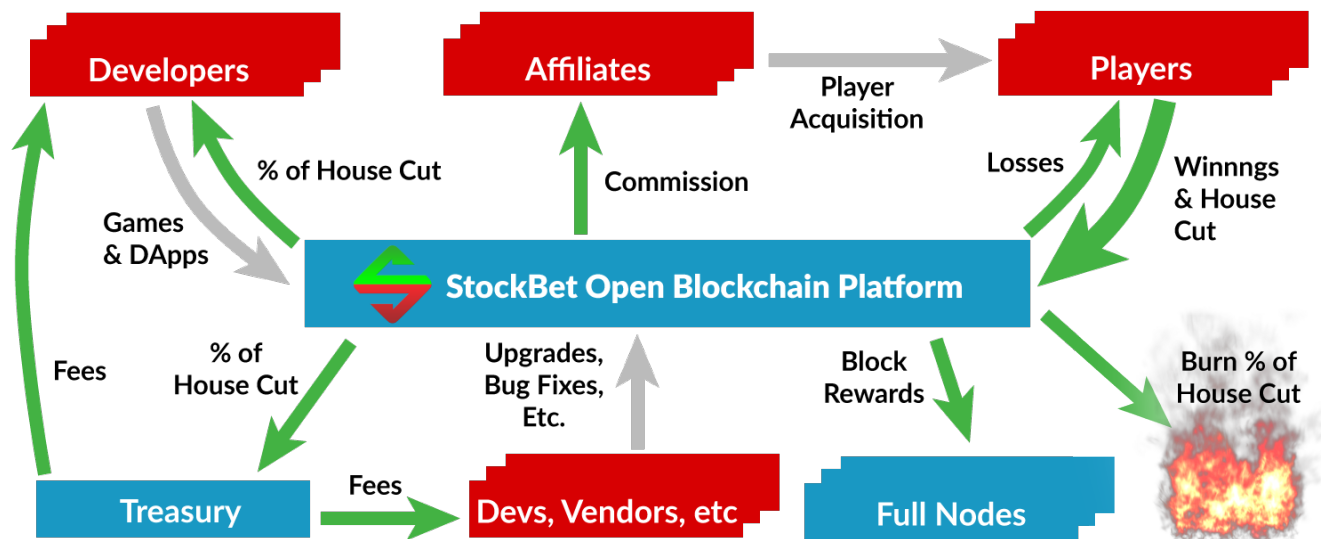
We plan to take it one step further than iOS, Android and Facebook. We plan to provide it as open source so that any developer, upon approval by the community, can change any aspect of the software.

Therefore, StockBet's token sale is not only targeted to users and players, it is targeted to developers as well.

The API should interface with affiliates as well, so that they will be rewarded for driving traffic to the platform.

Before launch, we plan to undertake an independent security audit.

In the following image, the green arrows represent transfer of StockBet Tokens. More about this image will be explained later in this white paper:



Referral System

DAO.Casino is going to have a referral system that rewards players for bringing in new players^{vii}. We will include a similar referral system.

Areas of Gamification Potential

Our goal is to simulate much of the following onto a blockchain for StockBet players:

Financial Spread Betting (FSB) / Trade Contracts For Difference (CFD) are two forms of betting on the financial markets. These are popular because there is leverage. This means that you can magnify your wins (or losses). If you bet \$10, you can make \$1,000 or \$10,000. Conversely, you can lose \$1,000 or \$10,000. Essentially, they are derivatives and similar to call or put options. Leverage is one of the main factors for the huge size of the derivatives market.

IG Group is the one of most popular sites for these forms of betting. They cater mainly to the UK, had trading revenue of £456.3 million and 152,600 clients as of May 2016 (<http://www.iggroup.com>). Other companies that provide financial spread betting include financialspreads.com, etxcapital.com, spreadex.com/financials and www.cityindex.co.uk. Most deny customers from North America and they deny most of Europe from playing FSB.

Binary Options is another popular way of betting on the financial markets. As explained by Nadex.com: "Binary options are limited-risk contracts based on a simple yes/no question about the market's price action, like this: "Will this market be above this price at 3pm today?" If you say yes, you buy the binary. If you think no, you sell. If at 3pm, you're right, you get the full \$100. If not, you get zero. Binary trading is a simple, but powerful way to trade the most active stock indexes, forex, commodities & other markets, with limited risk,

guaranteed." Nadex charges \$1 per contract and a maximum of \$50 per order. There is no risk to Nadex as the players play against each other.

Binary.com offers multiple variations: Up/Down, Touch/No Touch and In/Out. Other sites that provide variations to binary options include:

anyoption.com, optionrobot.com, binaryoptionautotrading.com, www.binarymate.com. Binary Options are also derivatives.

There have been fraud and scams with Binary Options websites. Binaryoptionsthatfuck.com lists dozens of Binary Options sites and tries to determine which ones are not scams. According to <https://investor.gov/investing-basics/avoiding-fraud/types-fraud/binary-options-fraud>, some of these sites have engaged in:

- Refusal to credit customer accounts or reimburse funds to customers
- Identity Theft
- Manipulation of software to generate losing trades
- Overstatement of returns

Of course, none of these vendors provide open source. Also, the house edge is too high for Binary Options sites.

Yahoo Finance is the world's most popular website related to the stock market. They cover thousands of American, Canadian, European and Asian stocks. One untapped group of social gamers is their group of message board users. They debate, banter and challenge each other to bets on a regular basis.



Here are some examples. Search site:finance.yahoo.com/quote and the following (include quotations):

"today is deadline for accepting my \$500,000 bet. Still no answer from the Chickenhawk"
"THAT IS LOOKING FOR ATTENTION..I will BET BOTH... Lets the board decide. Reply."

Search site:finance.media.yahoo.com/quote and the following (include quotations):

"Most were in-the-money and I will bet \$100 that 30-40% were naked sales."

Quite often, Yahoo users are challenging each other to make side bets. However, they cannot carry out these bets anywhere on the internet.

Market Bracket Challenge: Quite often, Wall Street hosts competitions, such as TheStreet's Market Bracket Challenge. Here is an explanation of how it works: <https://www.thestreet.com/story/14030891/1/welcome-to-thestreet-s-market-bracket-challenge.html>. It is based on a sports bracket. Here is a graphic of the results: <https://postimg.org/image/be8huzrld/>

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Stock Market Professionals: They can easily long or short stocks, however what is missing is social-competition. The person taking the other side of every trade, is always anonymous. They want to compete with friends. Hence, financial professionals have been playing manual, socially competitive games for decades. Focus group research confirms that two of our games enable finance professionals to automate, manage and replace their manual games. With the other games, Stock Brokers and professional Traders told us that they "love" our games and think our games are "cool".



Quite often, when stock market professionals bet, they make large bets. Here is one example: ^{viii}

Mr. Buffett,

I would like to make an offer to renew this bet. ...

I would like to bet you \$1,000,000.00 that Rangeley outperforms the S&P 500 over the next 10 years starting on January 1, 2016. ... Game?

Best Regards,

Chris DeMuth Jr.

In other words, the stock market is not where you will find "micro-transactions". If you are looking for that, you will need to look in Iota's space (Internet of Things). The stock market is not where you will find "small transactions", such as \$3 for coffee, which is what Dash wants to enable. The stock market is not where you find casino-size bets, which average \$1-10 each. Stock market transactions are in the thousands of dollars each or more.

Shorting: If you are bearish on Facebook, it is not easy to short the stock. To do so, you need to borrow the shares, which may not be available. You also need a margin account and you need to pay interest to borrow the stock, which may be cost prohibitive.



Bulls and Bears go Global: More and more companies are becoming global brands, such as Facebook, Google, Twitter, Apple, Samsung, Microsoft, Alibaba, etc., where people in all corners of the world are intimately familiar with them. But the majority of the world cannot play their stocks. They have bullish (positive) or bearish (negative) sentiments. However, they cannot exercise their sentiments. When Facebook had its IPO, millions of people knew about it. Thousands had strong bullish or bearish opinions on StockTwits and Twitter. They debated, bantered



and trash-talked. Some claimed that buyers will be "Zuckered". Others claimed that Facebook's stock (FB) was going to have a "faceplant" or "lose face". However, the Facebook users in Argentina, Papua New Guinea or Kenya could not trade or bet on FB. They cannot socially compete anywhere on the direction of FB.

Initial Public Offerings (IPO): To bet on a stock on its IPO day, you need connections with an investment banker to get shares. This means IPO is restricted to stock market professionals. (StockBet.com's BullBear can enable people to play on the direction of an IPO.)

CNBC: CNBC used to host Bull vs Bear debates. They asked viewers to vote on the debaters on cnbc.com/votes. The votes were tallied for the public to see. However, this had less meaning for viewers when they don't have a stake on the debate. Even though CNBC no longer hosts formal "Bull vs Bear" debates, their commentators are usually bearish or bullish and debating their opposing positions. StockBet.com's BullBear enables viewers to make bets on these debates and the winners will be ones who accurately predicted the direction of the stock.



Gamers told us that the stock market is complicated and tedious. They told us that they would play our games because we simplified things and made them fun. They also think our games are unique.

Commodities and Currencies: People in some countries have very strong sentiments and opinions toward gold prices. People in other countries have very strong sentiments and opinions toward commodity prices. People globally have opinions of currencies, including crypto currencies. It is more difficult for a North American to open an account to trade commodities and currencies than stocks. This means, it is even more difficult for people in Argentina, Papua New Guinea or India to express their opinions on commodities and currencies than on stocks.

Derivatives: It is essentially a bet. As an example, if you and I enter a derivative contract, you are making a bet that the underlying entity will do ABC and I am making a bet that it will not. You pay me \$X for the contract. If you are wrong, I keep the \$X. If you are right, I pay you \$Y. Usually, \$Y is many times more than \$X.

Free Advertising

The big difference between stock market games and other games is that the stock market gets billions of dollars of free advertising. Most news shows will broadcast stock market numbers. CNBC (and Bloomberg) does this all day long. They don't give you results of World of Warcraft, Farmville or Casino games. When your car radio tells you that Dow dropped 100 points, it will remind you of your game on StockBet and you will say "Yeah!" or "Sh_t!". CNBC tries to be like a sports channel. With tickers and numbers flashing, suspenseful music playing and people speaking fast, they create a sense of urgency and action-packed excitement. No other games, other than sports, enjoys this kind of free advertising...and it's 12 months a year.

Perception versus Reality

Billionaire Michael Lee-Chin said that when there is a difference in perception from reality, there is an opportunity. The perception is that every buyer of stocks is an investor. Hence, companies provide a plethora of *serious, complicated*, "investment" products and services to these "investors". The reality is that there are market segments, who would love to play the stock market but think it is too complicated or expensive. Hence, companies under-supply them with *fun, simple, affordable* "gaming" products and services. This is the opportunity.

Social Games

Our goal is twofold:

1. Gamify existing financial betting to be played on a blockchain
2. Be a social gaming entertainment platform. Enable a compelling suite of novel Stock Market Social Games that are designed to keep members connected to each other and engaged.

To achieve these goals, there should be easy ways for any player to invite others to rounds. With this, players can invite followings with one click. StockBet.com provides pre-generated e-mail invitations for players to send to friends. StockBet.com enables players to invite Facebook friends and Twitter followings. These features enhance the viral capacity of the game.

This means that a player can host a BullBear round like: "I bet 5 StockBet Tokens that the DOW will close up on Sep 15". The friend will take the other side of the bet. Throughout the interim period between the bets being made and being resolved, players will remain engaged through chat where they can debate, banter and socialize.

Each of our newly invented games are novel, fun and have significant growth potential. Focus group feedback indicates this.

Please note that the social aspect is optional. Players are not required to provide any identification. At their option, they will be able to enter a nickname, if they wish to socially compete, troll or invite friends.

Our games will have the same, simple, easy to understand format, and will simplify financial jargon to layman's terms. Our goal is to have all our games satisfy the following guiding principles:

- **Extremely engaging** socially interactive and fun games.
- **Elegant** interaction with the world's financial markets.
- **Broad appeal**, attracting the novice to the expert financial trader.

- **Support for multiple platforms** through the browser to facilitate our highly social gaming model. Mobile access will make it easy and fun for our members to engage socially with each other, whether they do so to banter, collaborate or compete on the performance of the world's financial markets.
- **Integration with existing social networks** such as Facebook® and LinkedIn® giving us access to a large online community.
- **Access to an extensible platform** - beyond our own games, StockBet will allow third-party game development on this platform, creating a greater menu of games for our community. Different countries will have different cultures and nuances. Therefore, developers from these countries will invent new games that we have never thought of. The community can give StockBet Tokens to the developers (one-time or ongoing based on game usage) in return for new games.

With sufficient players, commodities, precious metals and bonds can be added to the games.

Some important features to our games are:

- Bar and line charts and numbers will move and change in real time with the stock market. These show the rankings of the players and will look like a horse race. These will entice the players to check their status multiple times per day.
- Overall player rankings will encourage competition, rivalry, banter and fun.
- Social Networking: Members can comment on the games. This will foster the social and fun aspect by enabling members to banter, compliment, tease or collaborate with each other.
- By exploiting the technologies listed above, we will make the DApp work much more intuitively, interactive and fast. Please review the BullBear game on <http://StockBet.com> for examples of this. All of the following happen ***without the need to refresh your page***. There is no need for Adobe Flash, which is CPU-intensive, bulky and rejected by Apple for use on Apple devices.
 - Currently, our stock quotes are updated every minute from the stock market. We can reduce this one minute frequency if we wish to make it more realtime.
 - When you enter a number, it automatically populates another part of the page without refreshing the page.
 - When you change from a Bull to a Bear, it automatically moves you to the Bear column without refreshing the page.
 - When you search for a stock or other players, the search results automatically appear in the field below, without needing to click on any submit button.
 - When you choose Followers or Mutual Followings on the Round Details page, the users below change automatically.
 - When you click on a column heading on the Score Board, new data is fetched from the database.

- On our Discuss page, when another user posts a comment, you will see it appear without needing to refresh the page. When you scroll to the bottom, additional comments are automatically fetched from the database and shown to you.
- There are sounds, such as applause when you win and "uh oh" when you lose. When you wait too long on the Round Details page, you will hear "make a bet already".

Initial Games / DApps (Decentralized Applications)

The games will initially be available to play on the following entities, unless specified otherwise:

- publicly traded securities (stocks and ETFs) and indexes on these stock exchanges: New York, Nasdaq, TMX (Toronto), London, Euronext (Paris), Deutsche Börse (Frankfurt), Australia, Bombay, Milan, Amsterdam, Brussels, Lisbon, Moscow, Copenhagen, Helsinki, Iceland, Stockholm, India, Singapore, Shanghai, Shenzhen, Taiwan and Tokyo. (Many stocks of non-North American and non-European companies, such as Alibaba, Baidu, Sony, Toyota, etc., trade on Western stock exchanges as well.)
- crypto currencies accessible on CoinMarketCap.com's JSON API (<https://coinmarketcap.com/api/>)

With sufficient funding, Company will build the following games. In the game descriptions below, "stock" or "security" can be interchanged with "crypto currency".



BullBear™

- Description:** A player in London, chatting on Facebook or Skype with his friend in Paris, wants to bet his friend that the stock market will go up. How will he be able to do it? He cannot easily. StockBet.com's BullBear currently enables players to bet against each other with chips and is fully functional. Feel free to check it out. The Company will build the DApp version of this game for the StockBet blockchain.
- Features:** The DApp will detect the country that the player is in and show the appropriate stock market index.
- Rules:**
- Each player bets an amount on whether the entity (crypto currency, stock or index) will go up (bull) or down (bear).

- **House Cut:** The payout is 95% of the losing player(s) wager for the winning player and 5% for StockBet. As an example, let us say that Alice and Bob bet 100 StockBet Tokens each and Alice wins. Alice gets 195 StockBet Tokens (Alice's 100 plus 95 from Bob) and 5 goes to StockBet. The house cut is 2.5% on average (5 divided by 200). For a detailed explanation, visit: https://stockbet.com/#/BullBear/potential_winnings
- When a player initiates a new game, the player can specify the entity, amount of the bet, date and duration. This means that a player can initiate a game like: "I bet 5 tokens that the DOW will close up on May 15". The friend will take other side of the bet.
- Multiple players can join in on the same BullBear game on either side of the bet.
- With multiple players, this is how the ranking is determined. Let us say that Joe makes a Bull bet of 10 tokens, Peter makes a Bull bet of 20, Susan makes a Bull bet of 30, Jane makes a Bear bet of 10, Tom makes a Bear bet of 20 and Harry makes a Bear bet of 20. If the market goes up and the Bulls win, then this would be the results and ranking from that game-day:
 1. Susan wins 30
 2. Peter wins 20
 3. Joe wins 10
 4. Jane and John lost 10 each
 5. Tom and Harry lost 20 each
- If there are no bets on one side, then the tokens will be returned to the bettor(s).
- In the unlikely case where a security closes flat, then tokens will be returned to the bettor(s).
- For additional details of this game, feel free to play a round on StockBet.com.



Financial Spread Betting / Contract for Difference

For explanation of FSB and CFD, see:

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<https://www.ig.com/en/cfd>
<https://www.ig.com/uk/learn-to-trade/what-is-spread-betting>
<https://www.ig.com/uk/learn-to-trade/what-are-CFDs>
<https://www.ig.com/uk/spread-betting/cfd-vs-spread-betting>
<https://www.ig.com/uk/cfd-trading/#lb-cfdexample>.

The main difference between these two derivatives is that, in FSB, you can bet a certain amount per point of movement of the underlying entity, whereas you trade CFD contracts and the size of the contracts determines how much is at stake per point of movement.

In FSB on IG.com, you can bet (long or short) £X per point on the Dow Jones index. If you bet £1 and Dow Jones is at 20,000, then your exposure will be £20,000. If the house's margin rate for Dow Jones is 0.5%, then the margin deposit required will be £100. If the Dow Jones rises from 20,000 to 20,001, then you win £1. If the Dow Jones drops from 20,000 to 19,999, then you lose £1.

As an example, let's say the Dow Jones index is at 20,000. Let's say that you bet £10. This exposes you to £10 per point of movement on the Dow Jones. This means that the notional amount is £200,000 (20,000 x 1 contract x £10 risked per contract). This is multiplied by the margin percentage of 0.5%, which equals a minimum of £1,000 that you'll need to deposit before you can buy this contract. If your equity (cash balance - running loss) falls below your margin requirement, you will be asked to add more to your balance or close the contract position. If your equity drops further and hits 50% of your margin, then your positions would be automatically closed. In fast moving markets, positions may be closed without notifying players. Let's say you had £2,000 in your balance. If Dow Jones dropped from 20,000 to 19,900, you would lose £1,000, your equity becomes £1,000 (£2,000 balance - running loss of £1,000) and there is no margin call because your equity has not fallen below your margin requirement of £1,000. Let's say Dow Jones dropped from 20,000 to 19,870, you would lose £1,300, your equity becomes £700 (£2,000 balance - running loss of £1,300) and there would be a margin call. Let's say Dow Jones dropped from 20,000 to 19,850, you would lose £1,500, your equity becomes £500 (£2,000 balance - running loss of £1,500) and your contract position would be automatically closed because your equity hit 50% of your margin requirement of £1,000.

In actuality, the buy price (for going long) is higher than the market price of the underlying entity (Dow Jones). For the player to make money, the market price must go higher than the buy price. The sell price (for going short) is lower than the market price. For the player to make money, the market price must go lower than the sell price. The difference between the two prices is the spread. This is one of the ways the house makes money. The difference between the buy/sell prices and the market price will be adjusted based on whether there is a bull or bear market.

In addition to the spread, IG.com charges a 0.1% commission with a minimum charge of £10, €10 or \$15 for stocks.

CFD is very similar to FSB with a few minor differences. With CFDs, you can buy (go long) or sell (go short) one contract, which exposes you to a standard exposure of \$10 per point movement on the Dow Jones. The

stake is fixed by the contract. You can also buy or sell a mini-contract, which exposes you to \$2 per point.

As an example, let's say the Dow Jones index is at 20,000. Let's say that you buy one contract. This exposes you to \$10 per point of movement on the Dow Jones. This means that the notional amount is \$200,000 (20,000 x 1 contract x \$10 risked per contract). This is multiplied by the margin percentage of 0.5%, which equals a minimum of \$1,000 that you'll need to deposit before you can buy this contract. If your equity (cash balance - running loss) falls below your margin requirement, you will be asked to add more to your balance or close the contract position. If your equity drops further and hits 50% of your margin, then your positions would be automatically closed. In fast moving markets, positions may be closed without notifying players. Let's say you had \$2,000 in your balance. If Dow Jones dropped from 20,000 to 19,900, you would lose \$1,000, your equity becomes \$1,000 (\$2,000 balance - running loss of \$1,000) and there is no margin call because your equity has not fallen below your margin requirement of \$1,000. Let's say Dow Jones dropped from 20,000 to 19,870, you would lose \$1,300, your equity becomes \$700 (\$2,000 balance - running loss of \$1,300) and there would be a margin call. Let's say Dow Jones dropped from 20,000 to 19,850, you would lose \$1,500, your equity becomes \$500 (\$2,000 balance - running loss of \$1,500) and your contract position would be automatically closed because your equity hit 50% of your margin requirement of \$1,000.

For more details and sample of a CFD, visit: <https://www.ig.com/uk/cfd-trading#lb-cfdexample>.

FSB and CFD can be simulated and gamified so that players can play these games on StockBet with tokens. Therefore, replace £ and \$ above with tokens. StockBet will charge 0.1% commission with no minimum charge and set durations that are one or more trading sessions (days). This is the only planned game where players play against the house. The maximum bet can be set low initially until there is a pattern of break-even or winnings for the house.



Binary Options

There are many variants of Binary Options. One of the simplest is offered and described by Nadex.com. Instead of repeating the explanation, you can see it at <https://www.nadex.com/binary-options/what-are-binary-options>

StockBet will simulate and gamify this variant of Binary Options onto a blockchain and:

- charge 50 tokens per contract and a maximum of 500 tokens per order
- provide social features such as chat or troll box

Potential Variants: Binary.com offers several: Up/Down, Touch/No Touch, Inside/Outside



StockBracket™ / CryptoBracket

Explanation of how to play this is at <https://www.thestreet.com/story/14030891/1/welcome-to-thestreet-s-market-bracket-challenge.html> . Here is a graphic image of their results: <https://posting.org/image/be8huzrld/>



The rules of the game are similar to those for sports tournament bracket pool, as described here: <https://www.sportsbettingacumen.com/fantasy/ncaa-basketball/office-ncaa-basketball-marchmadness-brackets-pool>.

StockBet's DApp will initiate challenges. Each challenge will pertain to a major stock exchange. The DApp will populate the bracket with the biggest market cap stocks. During the following week, players can enter.

Each player pays an ante to enter and then picks winners for all of the rounds. The jackpot in this and other games can potentially grow significantly if there are thousands of players from around the world. As we know from lotteries, the bigger the jackpot, the more people are enticed into joining. If there are millions of players, these games can potentially have huge jackpots.

In the event that multiple players picked the finalist, the DApp will add the percentage price gains of all the stocks that each player picked. The player, who picked the finalist, with the most accumulated percentage price gains for all the stocks that he/she picked, will win the jackpot, less 2.5% house cut. In the event that there is still a tie among two or more winners, the jackpot will be divided evenly, less 2.5% house cut.

Potential Variants: Player initiated. Enable players to initiate challenges and to populate them with stocks.
Sector related. StockBet will populate challenge with stocks from a particular sector, such as technology, finance, energy, solar, retail, etc.
Crypto related. StockBet will populate challenge with crypto currencies.



StockPool / CryptoPool

Description: Stock market professionals play stock portfolio competition games against each other. There are several web apps that currently enable users to compete with stock portfolios. However, none of them enable these professionals to play their games, which includes portfolios with only one stock or the ability to "long" or "short" the stock. Hence these professionals play their games manually, with an administrator manually keeping track of the portfolios and communicating them via e-mail. The **StockPool** game will automate

this.



picks



1

Performance: 1.26%

Long	Short	Symbol	Begin	End	Change
▲		AIG	35.31	35.35	0.11%
▲		BAC	11.29	11.54	2.21%
▲		TROX	18.51	18.78	1.46%



2

Performance: -0.09%

Long	Short	Symbol	Begin	End	Change
▲		ALJ	15.49	15.44	-0.32%
▲		CLF	35.70	36.05	0.98%
▲		HFC	46.53	46.10	-0.92%



3

Performance: -0.29%

Long	Short	Symbol	Begin	End	Change
▲		PVD	98.30	98.86	0.57%
▲		AGC	6.45	6.46	0.16%
▲		ARX	6.60	6.50	-1.44%
▲		MGR	25.90	25.85	-0.19%
▲		AFL	53.80	53.50	-0.56%

The above bars (using HTML5 Canvas) and numbers (populated by Google's AngularJS technology) animate/move and change in realtime, depending on how frequently we set our API to fetch stock quotes.

Features:

- Players will have fun watching their stocks and portfolios go up and down and seeing how they rank against the other players.

The bar graphs in the player ranking board will move in real-time, as the value of the portfolio changes. This will be like watching a horse race and will add excitement to the game, enticing players to check their status multiple times a day.

Rules:

- Every player pays an ante and picks a portfolio of 3-10 stocks or crypto currencies. The value of the portfolio will be evenly divided amongst the stocks/crypto currencies.

- The game will be easy to play, with no need to calculate the number of shares/units. (Curious players can drill down to see detail numbers.) Duplicate portfolios are disallowed.
- The winners will be determined after 10 days.
- The winner takes 70% of the pot, 2nd place takes 20%, 3rd places takes 7.5% and StockBet takes 2.5%.

Notes:

Please note that players do not need to pick 10 stocks/crypto currencies. 10 is the maximum. They can pick less, but a minimum of 3. Whatever they pick, we should automatically allocate the appropriate % value of the portfolio to each stock. As an example, if a player picks 3 stocks/crypto currencies, then we allocate 33.3% of the value of the portfolio to each stock/crypto currencies.

We want to make it as easy as possible for the players. Therefore, we are not going to make the player calculate the number of shares that they need to buy. In fact, we are not even going to show the share price or \$ amount value of their portfolios. We are going to represent the value of their portfolios by showing bars or lines on charts vis-a-vis other players. If the player hovers over his/her line on the chart, then a tooltip can show the share count and dollar value.

We will do all of the calculations behind the scenes. So, we will use an arbitrary value for all portfolios at the start, such as \$1,000,000. If the player picks 4 stocks, we determine the number of shares that can be bought with \$250,000 for each of the stocks, based on share prices when the market is closed and immediately after the game is closed and ready to start. As an example, If the game closes at 23:00 PM tonight (meaning that the game is not accepting any more users or changes to stocks) and the game starts when the market opens tomorrow at 8:30 AM, then we will use the share prices as of 23:00 PM tonight instead of share prices as of stock market close at 16:30 PM. This is because some share prices can trade and change after stock market closes. Some of these changes are shown by Google Finance. For crypto currencies, we can use midnight UTC as the previous close.

We will keep track of the following for each portfolio behind the scenes:

- Number of shares of each stock (or units of currency)
- Share/crypto currency price that we paid (at the close of game)
- Latest share/crypto currency price
- Total, latest value of each stock/crypto currency
- Total, latest value of portfolio (Maintain per minute or per daily values so that we can draw charts.)

If the player is curious about the details, he/she can drill down to get it, or we will show it on a hover-over tooltip.

For version 2, we will let players trade stocks/crypto currency in the middle of the competition and we will need to keep track of the following:

- Share/crypto currency price that we received, when player sold the stock/crypto currency
- Virtual Cash balance

Yahoo Finance and Google Finance do good jobs of providing detail stock and company data. We do not want to clutter the DApp interface with more data than needed. We can provide links from each stock on our DApp to Yahoo Finance, so if the user does want to look up the P/E ratio, Market Cap, Volume, etc., they can do so.

Player initiated:

- Players can initiate their own private StockPool. Players can enter the following options:
 - names, e-mail addresses, phone numbers or StockBet addresses of friends to invite
 - # of acceptances before game can start
 - start date
 - # of business days that game will last
 - ante (fee)
 - disbursement of winnings in percentages
 - number of picks that each player must make (can be 1 to 10)
 - stocks only or crypto currencies only (crypto currency must be listed on CoinMarketCap.com).
 - exchanges from where stocks can be picked from (London, New York, Frankfurt, Paris, Toronto, etc.)

Potential Variants: Bigger and Longer Lasting: With enough players, StockBet can start a new pool every day, have more players per pool, have pools that last longer than 10 days or have pools with bigger ante.

Multi-Teams: In this variant, multiple players pick stocks for each portfolio. As an example, there are two teams of 10 people each. Each person from each team picks one stock for the team's portfolio. The two portfolios compete.

Shorting: Allow players to short securities

Slot StockPool: Gamers told us that they would play stock market games, but they find the stock market to be complicated and tedious. They would play our games, especially Slot StockPool, because we simplify it and make it fun. In this variant, there is an animated slot machine with sound that players use to randomly pick stocks. Therefore, there is no work, research nor analysis required to pick the stocks. In fact, players do not need to know much about stocks at all.

The advantages of this game over casino slot machines are:

- Being exposed to stocks might be educational, even if only on a superficial level.
- Millions of people follow stocks. Being exposed to stocks, instead of pictures in a slot machine, enables the players to have conversation topics with others.



SurvivorStock™

Description: Millions of people play sports pools around the world, which are informally organized among friends. One popular pool is Survivor Pool, also known as Suicide, Eliminator, Last Man Standing or King of the Hill pools. It is similar to a sports tournament bracket pool. There are sites that help people run these pools, such as RunYourPool.com. SurvivorStock will be similar to Survivor Pool.

Benefit: People who are familiar with Survivor Pool will know how to play SurvivorStock and will receive similar enjoyment.

How it works:

- In Survivor Pool, each player picks one team that he thinks will win, each week. If his team wins, he advances to the next week. If his team loses, he is dropped from the game. Once he has chosen a team, he cannot choose the same team again for the rest of the season. As a result, each week the players have fewer teams available, making the picks more difficult. As the choices narrow, more players are dropped and fewer players remain in the game. The player(s) lasting the longest wins the Survivor Pool.
- SurvivorStock will work similarly to Survivor Pool. Players will pay an ante. The number of stocks that players can pick from will be limited to those with a market capitalization that is greater than \$1 billion, or equivalent in Euros. Each player picks one stock that he thinks will increase in value, each day. If his stock increases in value, he survives to the next round. If his stock does not increase in value, he is dropped from the game. Once he has chosen a stock, he cannot choose the same stock again for the rest of the game. As a result, each day the players have fewer stocks available, making the picks more difficult. As the choices narrow, more players are dropped and fewer survivors remain in the game. The game ends when there is only one survivor or after 17 days (there are 17 weeks in a football season), whichever happens first. If there is more than one winner, the game will add the percentage price gains of all the stocks that each player picked. The player with the most accumulated percentage price gains for all the stocks that he/she picked, will be the winner. In the event that there is still a tie among two or more winners, the jackpot will be divided evenly. 1st place wins 70% of the pot, 2nd place wins 20% and 3rd places wins 7.5%. 2.5% goes to StockBet.

Anyone can initiate a game, by setting the following options:

1. **Ante Amount**
2. **Maximum Number of Players**
3. **Maximum Duration:** Maximum Number of days that game should last.
4. **Type of Security:** London stocks, New York stocks, Asian stocks, crypto currencies or ETFs. (Default is stocks from the player's region.)
5. **Division of Pot:** Default is: 1st place wins 70%, 2nd place wins 20%, 3rd place wins 7.5%, Stockbet takes 2.5%. Player can change these, with the exception of 2.5% to StockBet.



StockDerby™

Description:

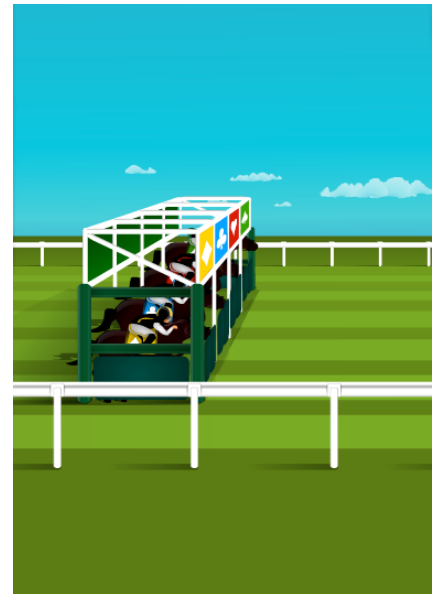
This will be like watching a horse race. Horses will represent stocks and will move on a race track. The players who bet on the winning horse/stock will win tokens from the players who bet on the losing horses/stocks. There can be two versions. One is with stocks and the other is with crypto currencies.

Benefit:

People who are familiar with horse races will be drawn to play StockDerby. This is an easy and fun game as players do not need to do any work to research or read financial statements. However, playing this game will slowly familiarize players to the stock market.

How it works:

- Every business day in each sector, StockBet will pit four random stocks or crypto currencies against each other and let players bet on which stock or crypto currency they think will outperform.



- StockBet will include links from these stocks to Google Finance or Yahoo Finance. This way, players can get more information about these stocks, if they wish.



- These stocks or crypto currencies will be represented by horses on a race track. The horses will move along the track to reflect their changing prices. If one or more stocks start declining in price from the open of the market, then for the other stock(s) that is increasing or declining less, we will move its horse ahead while the other horse(s) stays still. As an example, let us say that RBS, Google, BP and Apple are the horses. When the stock market opens and Apple's and BP's prices increase but RBS' and Google's prices decrease, we will move Apple's and BP's horses ahead but keep RBS's and Google's horses at the starting line.
- Players will be able to make bets up until the time the stock market opens. The race will end when the stock market closes that day.
- The winning players will win tokens from the losing players on a pari-mutuel basis (see explanation for pari-mutuel at <https://www.gamblingsites.com/sports-betting/types/pari-mutuel>). StockBet's commission will be 2.5%.

Potential Variants: Intra-day: Instead of starting and ending the race simultaneous to the stock market day, the race can last 2 minutes or 10 minutes.

Multi-day: Instead of starting and ending the race simultaneous to the stock market day, the race can last 10 business days.

Security: StockDerby can be for bonds, precious metals or commodities.

Player Created: The player initiates the game, by setting the following options:

1. **Stocks:** Players can pick the stocks or let StockBet pick the stocks.
2. **Duration:** Number of days that game should last.
3. **Type of Security:** London stocks, New York stocks, Asian stocks, crypto currencies, commodities, precious metals, bonds or ETFs? (Default is stocks from the player's region.)

With every game, the DApp will enable players to chat and invite friends, by entering e-mail address, phone numbers or StockBet addresses.

When players pick stock symbols or currency symbols, the DApp will verify them. After the round closes, the DApp will verify the symbols again and fetch their prices. In the unlikely and rare event that the symbol is no longer valid, such as getting de-listed by the stock exchange or currency exchange, then the round is cancelled and all bets are returned to the players.

To prevent spamming, a minimum bet or ante of 10 tokens will be enforced. The community will have the option to change this.

We will explore the idea of holding a poll to ask token owners which games or DApps that they will like to see built first.

We reserve the right to change the design or functionality of the games after the token sale. The above "potential variants" describe possibilities. They do not mean that we will definitely build these.

We have invented other games but will keep them undisclosed from competitors, in order to reserve first-mover advantage. This does not mean that we are committed to building these.

If at any time the community enables StockBet Tokens to be listed on an exchange, we reserve the right to discontinue building games and hand over the project to the community of developers.

House Cut

In most of the games, players compete against each other. In these games, 2.5% of the pot will be the house cut. Details of this is described in BullBear. (The community will have the option to change the house cut.)

In a few of the games, such as Financial Spread Betting, Contract For Difference and some types of Binary Options, players bet against the house. The house is the network of token owners. The spread will be set similarly to what IG.com has set, which gives the house an edge. The house will lose some and win some. Overall, the house should win.

When the house loses a bet, the blockchain will mint new tokens to pay the player. When house wins a bet, the blockchain will destroy those tokens. At the end of a game/transaction that has past the end of a period (which can be a day, week or month), the DApp will tally all of the wins and losses for that period. If the house has lost for that period, then the difference is recorded as a running loss/inflation. If the house has won for that period, then the house cut is calculated. Here is an example (Rounds 2 and 4 are past the end of each respective period, triggering the tallies):

Round 1: House loses 200 tokens, mints this amount and sends to winning player

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Round 2: House wins 100 tokens, takes this amount from losing player(s) and destroys it
End of period: House loses 100 tokens for this period. Running loss/inflation is increased to 100 tokens.

Round 3: House loses 100 tokens, mints this amount and sends to winning player

Round 4: House wins 250 tokens, takes this amount from losing player(s) and destroys it

End of period: House wins 150 tokens for this period. Deducts running loss/inflation of 100 tokens. If amount is positive after deduction, the DApp records this as house cut, mints 50 tokens (in this example) and sends it to the community treasury. Running loss/inflation is set to zero. (Note that the DApp never mints tokens to send to the community treasury unless the house win is greater than the running loss/inflation.)

In reality, StockBet will be charging a commission for each round, so the above numbers will be slightly different.

With games developed by third-parties (which excludes the games identified in this white paper), part of the house cut will be allocated to those third-party developers. This will provide incentive for developers to create new games. It is in the best interest of the community to set the spread so that the house wins on average, which will ensure that developers get a cut of the tokens. The developers should not be the ones setting the house edge as they effectively have a monopoly over their games on the network. The StockBet community should set the edge, as they are not only the players but they are also the house.

Note that in stock market games, it is very difficult for a player to rig the results to take advantage of the house. It takes millions or billions of dollars to move the price of a stock or index. This is not the case in sports betting. It has happened many times where criminals pay off referees or athletes to throw the game so that the bettors can win large bets against the house.

Allocation of House Cut

The house cut will be allocated:

- 35% for Developer of the game (with the exception of the Company in regards to the games in this white paper, in which case, this is allocated to the community treasury)
- 35% for community treasury
- 30% will be destroyed to create disinflation/deflation and to compensate for the network's token creation for block rewards to the nodes

The supply of tokens will be kept in relative balance automatically. If the supply is high, it means that players will bet more tokens, more tokens will go to the house cut and more tokens will be destroyed. Conversely, if the supply is low, players will bet fewer tokens, fewer tokens will go to the house cut and fewer tokens will be destroyed.

The community can choose to destroy extra tokens to create more disinflation/deflation. As a failsafe, the community can do this if some of the spread betting games created inflation. Even if the spread betting games did not, the community can choose to create extra disinflation/deflation.

These percentages will be initially set by the Company, but the community will be able to change them.

Blockchain

StockBet can be built on a new blockchain or on an existing platform, such as Ethereum. There are advantages and disadvantages to both. The advantage is speed. The disadvantage is scaling. Since Ethereum already has many DApps and smart contracts, StockBet would be competing for resources. This would not be a serious problem if the Ethereum DApps and StockBet do not grow significantly. If there is explosive growth, then using Ethereum will be an issue. Ethereum's blockchain is already bigger than Bitcoin's and growing faster. Popular ICOs are bringing Ethereum to its knees. With so many so DApps, smart contracts and tokens, and growing, it's sustainability is questionable.

We are aware of Ethereum's plans to add sharding. However, this is unproven and even Vitalik Buterin wrote in 2014^{ix}:

"First of all, going between substates, such a virtual machine would be incredibly inefficient; if a transaction execution needs to access a total of ten contracts, and each contract is in some random substate, then the process of running through that entire execution will take an average of six blocks per transmission, times two transmissions per sub-call, times ten sub-calls—a total of 120 blocks. Additionally, we lose synchronicity....

As a result of the inefficiency and instability of cross-chain messages no matter how they are done, most DApps will want to live entirely inside of a single sub-state, and DApps or contracts that frequently talk to each other will want to live in the same sub-state as well."

Furthermore, there are several issues with Ethereum as outlined by Tuur Demeester (<https://medium.com/@tuurdemeester/im-not-worried-about-bitcoin-unlimited-but-i-am-losing-sleep-over-ethereum-b5251c54e66d>). Even Ethereum core developer Vlad Zamfir stated: "Ethereum isn't safe or scalable. It is immature experimental tech. Don't rely on it for mission critical apps unless absolutely necessary!"

Then there are the multiple legal risks with Ethereum as explained by Jason Seibert, a securities lawyer: <https://youtu.be/xf0cnM4yVOc>

Therefore, in the long run, it is better to build a new blockchain if we expect the Ethereum DApps or StockBet to explode in growth.

Building a new blockchain does not mean that we need to code from scratch. Ethereum's source code is available under GPL. We are legally allowed to copy and modify this code for our purposes. On top of this, we can look at using Proof of Stake and Zero-Knowledge Proofs, Transaction Locking or Raiden to provide private and near-instant transactions. Another option, which is possibly better, is DAG (Directed Acyclic Graph). One of the biggest impediments to scale is the blockchain. DAG does not use a blockchain and can possibly lay the foundation for the next generation of crypto currency. Iota and ByteBall use DAG and Iota is also open source. However, DAG has shortcomings as well. Lisk and Ark provide blockchains for developers. We can look at adding Lightning Network and Rootstock to these. Out of all the blockchain technologies, EOS seems to promise the most and it will be open source. It promises to scale to millions of transactions per second and thousands of DApps. Dan Larimer said that if you can build a website, you can build a DApp on EOS. Unfortunately, EOS is unproven, but Larimer said that they will have software on the testnet by summer of 2017.

Blockchain technologies are ever evolving. We will attempt to use the best. The path that StockBet chooses will depend on the token sale. If we sell sufficient tokens, then we will explore many options, otherwise we will use something readily available. We cannot commit nor guarantee which one we will choose and we reserve the right to choose between using Ethereum, Lisk, Ark, EOS, building/customizing a new blockchain or building a DAG.

Architecture

StockBet will use a client-server model. The client can be light wallets or third-party apps that can run on a browser and do not need a full copy of the blockchain. It is web-based and uses HTML5, WebGL, Javascript and Angular2.

If we use a blockchain other than Ethereum, we will likely use Delegated Proof of Stake (DPoS). The full nodes will provide the security, forge blocks, confirm transactions, maintain the full blockchain and earn block rewards (not from house cut). (For explanation of the difference between PoS and PoSV, see: <https://agroff.github.io/posv/>) These nodes enable client software and light weight wallets to get to the network without having to sync to a blockchain locally.

The amount of stake and block rewards will be determined after we know how many tokens have been sold at the token sale. We are also open to input from the community on what these stake and block reward numbers should be.

DApps will:

- create the smart contracts for the games to act as escrow
- act as software oracles to access/retrieve stock market and crypto currency prices, from which the smart contracts will determine the winner(s) and send the winnings
- earn a portion of the house cut

- use HTML5 and WebGL to build high quality and fun 3D games, such as StockDerby or CryptoDerby

Company will build smart contract templates and APIs for third party developers. There are several ways for DApps to retrieve stock prices:

- AlphaVantage (<http://www.alphavantage.co/#about>) states:
 - "We have one shared aspiration: democratizing access to institution-grade financial analytics. Alpha Vantage is one of our deliverables towards this purpose. It provides free JSON APIs for stock market data, augmented by a comprehensive set of technical indicators."
 - They provide free stock quotes from global exchanges: Australia, Bombay, Milan, Toronto, Frankfurt, Amsterdam, Brussels, Lison, Paris, London, Moscow, NASDAQ, India, New York, Singapore, Shanghai, Shenzhen, Taiwan and Tokyo.
- Google Finance
 - JSON. Example: <https://www.google.com/finance/info?q=aapl>
If you go to this URL in your browser, it will show the various data points about Apple's stock. This is only one of several ways to get prices from Google into a program.
- Yahoo Finance
 - Example: <https://download.finance.yahoo.com/d/quotes.csv?s=aapl&f=ns!1opc1p2&e=.csv>
- Bloomberg, Reuters, Nasdaq (<http://www.nasdaqdod.com>), edodate.com or many other paid API services
- Screen scraping from Google, Yahoo, Bloomberg, Reuters, Nasdaq, etc., though this is a cumbersome method and is probably not necessary

DApps can retrieve crypto currency prices by using JSON callback:

- CoinMarketCap.com (<https://coinmarketcap.com/api/>) Example:
<https://api.coinmarketcap.com/v1/ticker/bitcoin/?convert=USD>
If you go to this URL in your browser, it will show the price of BTC in USD and several other data points about BTC.
- CryptoCompare.com (<https://www.cryptocompare.com/api/#private-api-invocation>) Example:
<https://min-api.cryptocompare.com/data/price?fsym=BTC&tsyms=USD,EUR>
If you go to this URL in your browser, it will show the price of BTC in USD and EUR.
- Screen scraping from various exchanges, though this is probably not necessary

We contemplated the idea of using "consensus based oracles". However, this extra complexity and network traffic seemed unnecessary and probably would impact scalability. Consensus based oracles are mainly needed for events where the data are not widely and reliably provided on the internet. Prediction markets need them to answer questions such as "did celebrity ABC get married?" or "will artwork sell for \$1 million?" Sports betting needs them to answer questions such as "who won mixed martial arts match on June 17th?" Data from the stock market is widely and reliably provided from multiple sources on the internet. Moreover, the above API code can be in the DApp or inputted by the DApp into the smart contracts. Players can verify this by reviewing the source code, to see that the stock prices are coming from reputable sources. Besides, DApps will want to use reputable sources otherwise they will lose their user base.

It is in the best interest of the DApp, house and community to provide and ensure honest games. Cheating or inaccurate games will only scare players away. Fortunately, it is very difficult for the house to cheat, because the stock or crypto currency prices can be easily verified from Google Finance, Yahoo Finance, GuruFocus, Finviz, SeekingAlpha, Bloomberg, Reuters, CoinMarketCap, etc. On top of this, the final say will be decentralized to the community as a failsafe. After each game round ends, players will be given a one hour window to appeal. In the event that there is a discrepancy, players can submit an appeal, which will require the player to pay an appeal fee. The appeal fee will equal 10% of the pot or 1,000 tokens, whichever is less. This will pause the processing of the results. The community will vote on the appeal, using the same thresholds as described in the Governance section. If the community votes in favor of the player, then the new data will be used to process the results and the appeal fee will be returned to the player. If the community votes against the player, the original data will be used to process the results and the appeal fee will be sent to the community treasury. If the DApp provides wrong data repeatedly, the community can vote to deactivate the DApp.

Without the need for consensus based oracles, StockBet is much more efficient and scalable than prediction markets or sports betting.

The Company reserves the right to change anything outlined in this white paper before launch, with the exception that the project will be open source and changeable by the community upon launch. Therefore, if the Company changes anything before launch, the community will have the option of changing it back.

Governance

After the Company releases the wallet, network and first game, it will pass governance to the community.

Governance will be decentralized. StockBet will likely use Delegated Proof of Stake. This means token owners will vote for delegates, who in turn vote on proposals.

After the Company builds and releases its game(s), it will put the equivalent of 2,500,000 tokens, into the community's treasury.

Anyone, even a non-StockBet user, can submit a proposal. Anyone can propose changes, even how it is governed. Anyone can propose a new game or DApp. The proposal may suggest that the community pays a one-time price, percentage of house cut per round or any other payment structure to the developer. This is how the ecosystem will continue to get updated with new features, functions and DApps.

A nominal proposal fee can be imposed to deter spam or poorly thought-out proposals and to reward good proposals. If the proposal is rejected, the proposal fee goes to the community's treasury. If the proposal is approved, the proposal fee is returned to the proposer.

Token Sale

Company will sell StockBet Tokens at the Token Sale. These are Ethereum-based ERC-20 compatible tokens. In the event that the StockBet Platform is launched using the StockBet Platform software on a non-Ethereum blockchain, the token on the StockBet Platform (StockBet Platform Token) will effectively replace the Ethereum-based StockBet Token.

To avoid repetition, details of the Token Sale is available on the website, which mentions StockBet Tokens and StockBet Platform Tokens.

TOKEN SALE MILESTONES

For reaching each milestone, one of the following will be funded:

1. Administration (legal, accounting, etc.), blockchain, wallet, API
2. BullBear
3. Financial Spread Betting and Binary Options
4. StockBracket and StockPool / StockCrypto
5. SurvivorStock and StockDerby

Additional sales of tokens will fund the development of our other undisclosed, newly-invented games.

Allocation to Company

Tokens allocated to the Company will be for:

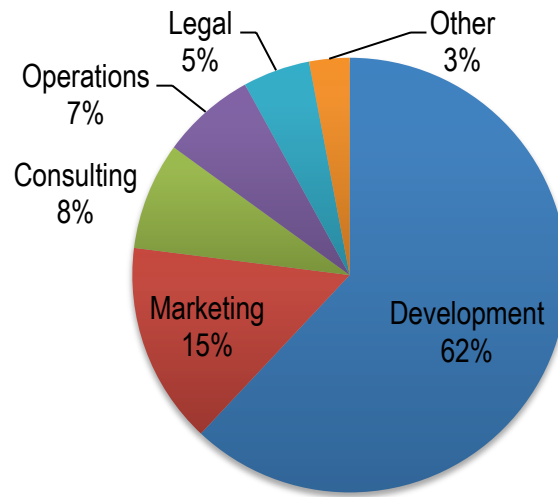
- people who helped the token sale campaigns (translation, signature, twitter, meme etc.)
- existing stakeholders*, including founders, developers, investors and creditors
- advisors
- future stakeholders, including developers, helpers, etc.
- bug bounty
- long-term budget

*Existing stakeholders will be subject to a three year vesting schedule.

Use of Funds

Provided that we met our goals in the Token Sale, the following will happen.

The Company will allocate the funds in the following way, though the percentages cannot be guaranteed to be exact or precise:



Depending on how much funding is raised, we will determine how many games can realistically be developed and we will likely hire additional developers.

It is to all users' benefit if usage of StockBet increases. Hence, we assigned the second largest allocation to marketing. Marketing entails advertising, blogs, bounties and public relations. Most of the marketing will be done online and to financially related sites.

As Andreas Antonopoulos stated, there is "tsunami of innovation" in the crypto space. We will seek the help and advice of consultants to incorporate the latest technologies.

Expenses and liabilities have been incurred in building StockBet.com, such as development, overhead, legal and accounting. We expect expenses to continue in operations, such as administration, overhead, accounting, etc.

As components get built and released, it is likely that the Company will seek legal advice for the benefit of not only the Company but also for StockBet.

"Other" is for any expenses that we cannot foresee at this point.

Development Roadmap

The following are the number of months after each preceding event:

7-10 months after token sale: Blockchain, wallet, API and nodes on testnet are released. Bug bounty program begins.

4-6 months: BullBear is released on testnet.

1 month: BullBear is released on mainnet.

6-9 months: Financial Spread Betting and Binary Options are released on testnet.

1 month: Financial Spread Betting and Binary Options are released on mainnet.

4-6 months: StockBracket and StockPool / StockCrypto are released on testnet.

1 month: StockBracket and StockPool / StockCrypto are released on mainnet.

4-6 months: SurvivorStock and StockDerby are released on testnet.

1 month: SurvivorStock and StockDerby are released on mainnet.

As with any project, there is no guarantee that the project will execute exactly as planned. The number of games and the speed to develop them will be dependent on the amount raised from the token sale.

Competition

Feature / Function	StockBet	Binary Options (Eg. Binary.com Nadex.com)	Financial Spread Betting (Eg. IG.com)	Gnosis	Augur	Wagerr
Related to Stocks	✓	✓	✓	Some	Some	✗
Can have single player rounds?	✓	✓	✓	✗ Need many	✗ Need many	✓
Decentralized / Blockchain	✓	✗	✗	✓	✓	✓
Games	✓	✗	✗	✗	✗	✓
Social	✓	✗	✗	?	?	?
Competition between players	✓	✗	✗	?	?	✓
Historical Scoreboard to instill rivalry to motivate multiple plays	✓	✗	✗	✗	✗	✗
Fun	✓	?	?	?	?	✓

User Initiated Challenges / Rounds	✓	✓	✓	✓	✓	✗ Oracle Masternodes initiate
Viral Potential	✓	✗	✗	?	?	?
Automate existing offline games	✓	✗	✗	✗	✗	?
Identity cannot be stolen	✓	✗	✗	✓	✓	✓
Platform for 3rd party developers	✓	✗	✗	✓	?	✗

Success

The Company is uniquely qualified to succeed because:

- we possess deep industry knowledge of financial markets and technical knowledge;
- our open platform, third party approach provides a long term source of new games – this is particularly important in international markets; and
- we're exploiting the right idea at the right time with the right team.

Our team is comprised of highly motivated individuals with the skill, experience and background to ensure success.

Summary

The stock market is a multi-trillion dollar game, played by the elite, sometimes at your expense.

We will decentralize this by building a blockchain-based platform and API, so that we and any 3rd party developer can add games and for affiliates to drive traffic and be rewarded. We will gamify Financial Spread Betting, Contract for Difference and Binary Options onto the platform and add unique games such as BullBear, SurvivorStock, StockDerby, etc. Then we make them more fun by adding a social element to them.

StockBet will liberate the huge stock market and let people from anywhere in the world to play.

For many tokens in the crypto space, you have no idea what it is for, based on the name. Many times, you have to do mental gymnastics to figure out the use case or if there is a market. With StockBet, the name, use case and market are clear.

The platform will enable developers to add games that are easy, intuitive, social, competitive and fun to play. StockBet.com is the best domain name for this space and it is easy to remember and intuitive. When people see "StockBet", they will instantly know what it is about.

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- iv <http://www.investopedia.com/ask/answers/052715/how-big-derivatives-market.asp>
- v <http://money.visualcapitalist.com/all-of-the-worlds-money-and-markets-in-one-visualization/>
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- vii <https://cointelegraph.com/news/prototype-for-blockchain-based-gambling-protocol-released>
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