FootballCoin

From fantasy currency to fantasy football:

FootballCoin, the blockchain based fantasy sports game

-White Paper-

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FootballCoin

Intro

Making crypto as popular as football

Our project is set up to innovate the way we use blockchain technology in entertainment, by creating a bridge between the cryptosphere and the world of Fantasy Sports.
To put is simply: we created FootballCoin, a football manager game platform using blockchain technology and issuing our own cryptocurrency (XFC).

Our mission is to bring the advantages of blockchain technology and cryptocurrencies to Football Manager and Fantasy Sports users. In doing that, we offer a degree of anonymity and complete ownership over the game assets, and from a broader point of view we bring our contribution to the mass adoption of DLT (Distributed Ledger Technologies) such as blockchain.

We believe in the future of our gaming platform and its global adoption, so **our vision** is to become a major player in fantasy sports with fans all over the world, while building a strong and healthy game cryptoeconomy.

Context

When you think about it, football and the crypto world seem universes apart. One is probably the most popular and loved sports in the world, the other is a topic growing in popularity, but with only a handful of people knowing what it means and how it works.
We wanted to replace the traditional data mining process with a more fun and productive experience available to people who are not yet a part of the cryptosphere.

Why gaming?

The gaming market has proven stable growth for some time now, with consumer behavior shifting from purchasing boxed or downloadable games to online and mobile games.
Here are some relevant facts:

- 2017 was the biggest year for digital games and interactive media and the market shows no signs of slowing[1].
- One in three people on the planet (2.5 bln) play free-to-play games across PC and mobile platforms. Free-to-play games maintain their grip on the worldwide games market, generating $82bln, or 89% across mobile and PC markets[2].

[1] https://www.statista.com/outlook/212/100/online-games/worldwide#

[2] https://www.superdataresearch.com/market-data/market-brief-year-in-review/

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- Players stay in the game even after they put the controller down. Whether it's to watch gaming tournaments, tutorials or trailers, 665mln people around the world tune in to sites like YouTube for content about their favorite games.
- Collectible card games are here to stay[3] and earned an estimated $5.73 billion in 2017 across digital and physical. While physical still dominates the market, digital CCGs have been earned a reportedly $1.4B in 2017. Digital players account for 61% of the CCG audience thanks to digital CCGs' greater accessibility than their physical counterparts.

Football: the beautiful game

Football has a reportedly 3.5 bln fans worldwide, with the European football market reaching 24,6 bln in 2016.
The "big five" European leagues (UK's Premiere League, Spain's La Liga, Germany's Bundesliga, France's Ligue 1 and Italy's Serie A) grew collective revenues by €1.4 billion (12%) in 2016[4].
It's a sport of great love, with loyal fans and a great market to sell almost anything from event tickets to memorabilia.

Fantasy football and not gambling

Fantasy sports leagues are not games of chance, they are games of skill.
They allow players to exercise direct control over their operations of their fantasy sports team. It also provides the individual with a chance to live vicariously as general managers, or coaches of their own team or teams. Managers must take into account statistics, facts and game theory in order to be competitive.
Additionally, playing fantasy sports creates a competitive environment and enables sharing of knowledge and expertise on social media platforms.
Fantasy sports players are motivated to enter the hobby for reasons that usually have nothing to do with money or prizes. The main enjoyment is winning and competing against other sports fans. In fact, frequent surveys of fantasy sports players show that the top reasons for playing include "competing with friends," "enhance my sports experience," and "to be in a league with friends."[5]

During 2015, the fantasy football[6] segment was the highest revenue contributing segment and is expected lead the market in the coming years. The wide reach and universal appeal of soccer has made it a highly popular game across the world and will contribute to this segment's growth in the coming years.

[3] https://www.superdataresearch.com/market-data/digital-card-games/

[4] https://www2.deloitte.com/uk/en/pages/sports-business-group/articles/annual-review-of-football-finance.html

[5] https://fsta.org/research/why-fantasy-sports-is-not-gambling/

[6] https://www.technavio.com/report/global-outdoor-gear-global-fantasy-sports-market-2016-2020

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The FootballCoin game

Our game allows users to exercise their football knowledge and managerial skills by creating teams and entering competitions.
Users are awarded scores calculated according to football player's real-life performance and can win prizes in XFC coins.
The XFC can be used in the game to buy game assets (player cards, stadium cards), or can be used in transactions in the crypto market.
All cards are collectibles and remain in possession of the buyer until he decides to sell them, lease them or swap them for other cards.

Steps to use the game[7]

Login
The FootballCoin game is designed to be easy to play regardless of experience with the game of football. Sign up is free and there are no other subscription fees. To sign up the user must provide a valid email address.

Select a contest
The FootballCoin game hosts Matchday, Daily, and Weekly contests across a variety of professional football leagues and tournaments (the European big 5 and more). Each contest will specify the exact parameters (e.g. "Saturday only", "Whole Matchday") and a date after which game entries may not be added, edited or canceled.
The user can select the entry fee and prize or choose a free practice contest and can enter as many contests as he likes.
If he is playing in a FootballCoin contest with an entry fee, he is required to have the funds available to his account prior to submitting his entry.
The FootballCoin system aims to offer many options in which the game can be played. In this way players can learn to develop their own strategies and become more efficient.
The user has the option of challenging a friend or joining an existing, official or private contest
He can choose amongst different football leagues (e.g. Serie A, English Premier League, La Liga etc)

Build the dream team
To build the fantasy team the user chooses professional players, from the different leagues listed in the game. He can choose any of the football players, according to the team's tactic he previously set up (e.g. the 1-4-4-2 formation).
The user will choose 11 players for each field position. And then the reserve bench – 1 Assistant Manager; 1GK (Goalkeeper); 1DF (Defender); 1MF (Midfielder); 1FW (Forward).

[7] https://www.footballcoin.io/

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The points earned by the players will be based on their performances in their real games. Our innovative scoring system[8] considers more than 30 elements, including the players' positions. This system determines a wide range of positive and negative sources for points. Positive events (such as scoring goals, contributing assists, keeping a clean sheet) will add points team. Negative events (such as receiving yellow/red cards, conceding goals, missing penalties) will turn into lost points for the players.

Marketplace
The users can buy player cards or stadium cards in the marketplace.
All cards are issued in a limited amount and are priced according to supply-demand in the market and real-life value to the represented asset.

The game's currency: XFC

XFC (FootballCoin) is a digital asset (token) acting as in-game currency.
XFC were issued in a limited supply of 1 billion on Counterparty platform (a Bitcoin-blockchain based platform). A limited number issue of coin offers to XFC an important potential to increase in value, based on the evolution of the number of participants in the game.

In January 2018 we launched our very own blockchain (Multichain based), the details of which will be described in the next chapters.

We also launched our exchange[9] that supports XFC and new wallet[10] that supports both XFC and game assets - player cards and stadium cards.

We provided a 3:1 conversion of XFCCOIN from Counterparty to the new blockchain. In other words, anybody who owned 1 XFC received 3 XFC when the swap was implemented.
The conversion kept the same ratio for the player cards regardless of rank.
Stadium cards owners got to keep their cards and received a bonus amount of XFC,

The total amount of XFC remained unchanged after the swap.
The 200 million XFCCOIN that were initially distributed will now become 600 million XFC on the new blockchain, according to the 3 to 1 swap.
So the CIRCULATING SUPPLY is 600 million XFC.
The remaining 400 million units were distributed according to the initial plan:
· 200 million will be assigned to further development of the project, partners, team members, advertising, promotions etc.
· The other 200 million XFC will go to the founders of FootballCoin.
The swap benefit gave existing XFC owners a higher stake in the FootballCoin economy.

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8 https://www.footballcoin.io/scoring-system/

9 https://digitaltokens.io/

10 https://www.xfccoin.io/download-wallet/

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XFC is freely transferable between players in and outside of the game.
XFC can be:

- traded on FootballCoin's own exchange service "Digital Tokens", developed using Multichain technology and powered by ANX International;
- used in the game to pay the entry fee in the contests
- used to purchase blockchain-based cards: football player cards and stadium cards;

The FootballCoin blockchain

The FootballCoin blockchain is a reference Multichain implementation. However, the parameters and various settings have been customized to suit the needs of the FootballCoin platform and connected services. Hereby is an excerpt of the Multichain whitepaper[11], that applies directly or indirectly to the FootballCoin implementation, as well as different annotations regarding how it works. For a more in-depth description of how Multichain works please refer to the Multichain whitepaper.

Introducing MultiChain

MultiChain is an off-the-shelf platform for the creation and deployment of private blockchains, either within or between organizations. It aims to overcome a key obstacle to the deployment of blockchain technology in the institutional financial sector, by providing the privacy and control required in an easy-to-use package.
Like the Bitcoin Core software from which it is derived, MultiChain supports Windows, Linux and Mac servers and provides a simple API and command-line interface.

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Private blockchains

MultiChain solves the related problems of mining, privacy and openness via integrated management of user permissions.
The core aim is threefold:
(a) to ensure that the blockchain's activity is only visible to chosen participants,
(b) to introduce controls over which transactions are permitted, and
(c) to enable mining to take place securely without proof of work and its associated costs.

[11] https://www.multichain.com/download/MultiChain-White-Paper.pdf

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Once a blockchain is private, problems relating to scale are easily resolved, since the chain's participants can control the maximum block size. In addition, as a closed system, the blockchain will only contain transactions which are of interest to those participants.
To understand permissions in MultiChain, we begin by noting that all cryptocurrencies manage identity and security using public key cryptography: users randomly generate their own private keys and never reveal them to other participants.
Each private key has a mathematically related public address which represents an identity for receiving funds. Once sent to a public address, those funds can only be spent using the corresponding private key to sign a new transaction.
In this sense, **access to a private key is equivalent to ownership of any funds which it protects.**

Beyond controlling access to funds, this type of cryptography enables any message to be signed by a user to prove that they own the private key corresponding to a particular address.

MultiChain uses this property to restrict blockchain access to a list of permitted users, by expanding the handshaking process that occurs when two blockchain nodes connect, as follows:
1. Each node presents its identity as a public address on the permitted list.
2. Each node verifies that the others address is on its own version of the permitted list.
3. Each node sends a challenge message to the other party.
4. Each node sends back a signature of the challenge message, proving their ownership of the private key corresponding to the public address they presented.

If either node is not satisfied with the results, it aborts the peer-to-peer connection.

The principle of connecting permissions to public addresses can be extended to many other operations on the network. For example, the right to send and/or receive transactions can be restricted to a given list of addresses, since transactions reveal the addresses of both senders and recipients. Since transactions can have multiple senders and recipients, a transaction is only allowed if all of its senders and recipients are permitted.
Of course, in some cases we may prefer the blockchain to be fully publicly viewable and only apply restrictions on the ability to transact.

Finally, by adding a signature field to the coinbase transaction included by miners in blocks, mining in MultiChain can similarly be restricted.
As we will detail in the next section, this is crucial to preventing minority rule in a private blockchain.

In MultiChain, all privileges are granted and revoked using network transactions containing special metadata. The miner of the first genesis block automatically receives all privileges, including administrator rights to manage the privileges of other users. This administrator grants privileges to other users in transactions whose outputs contain those users addresses together with metadata denoting the privileges conferred.

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When changing the administration and mining privileges of other users, an additional constraint is introduced, in which a minimum proportion of the existing administrators must vote to make a change. These votes are registered by each administrator in a separate transaction, with the change applied once sufficient consensus is reached.
The first few blocks of a chain define a setup phase, in which a single administrator is able to bypass this voting process.

Future versions of MultiChain could also introduce super administrators who can assign and revoke privileges on their own. Since modifications to privileges are embedded in the metadata of transactions, they propagate quickly to all nodes in the network, creating consensus regarding the current state of play.

However, because the network is decentralized, different nodes may receive permissions transactions at different times, either before or after other transactions. If the validity of a payment transaction depends on a privilege change that was broadcast shortly before, the difference could be critical, with some nodes accepting the payment and others rejecting it. Any such differences will be resolved once the transactions are confirmed on the blockchain, fixing their final ordering.

Every node follows the rule that transactions are replayed in blockchain order, so each transaction in a block must be valid according to the state of user permissions immediately preceding it.
If a transaction in a block is disallowed according to this rule, the entire block is rendered invalid.
The miner of a valid block must also be on the permitted list after applying all privilege changes defined within that block's transactions.

One privilege that falls outside this system is permission to connect, since it is not related to the blockchain's content. Instead, if this permission is revoked for a particular address, nodes immediately disconnect other nodes who used that address during handshaking.

For increased administrative convenience, temporary privileges can be granted by restricting them to a fixed range of block numbers. Transactions which depend on such privileges are only valid in blocks whose numbers are in the assigned range. For permissions changes that require consensus by voting, we only consider agreement to be reached if sufficient administrators have chosen the exact same block range for a particular user and privilege. This increases transparency for the network and relieves the administrative burden of remembering to revoke temporary privileges after their time has expired.

For a blockchain to be genuinely private, for every address granted a permission on that chain, at least one administrator must know the real-world identity of the entity using that address. However, most participants on the chain need not know each other's identities. A key feature of blockchains is allowing peer-to-peer exchange transactions, for example to swap tokens representing two different types of assets. If addresses are kept anonymous, these exchanges

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can be performed without either party knowing the identity of its counterparty. One could imagine financial institutions transacting under many different addresses, with only regulators knowing which address belongs to which.

Mining in MultiChain

By restricting mining to a set of identifiable entities, MultiChain resolves the dilemma posed by private blockchains, in which one participant can monopolize the mining process.
The solution lies in a constraint on the number of blocks which may be created by the same miner within a given window.
MultiChain implements this scheme using a parameter called mining diversity, which is constrained by 0 ≤ mining diversity ≤ 1. The validity of a block is verified as follows:

1. Apply all the permissions changes defined by transactions in the block in order.
2. Count the number of permitted miners who are defined after applying those changes.
3. Multiply miners by mining diversity, rounding up to get spacing.
4. If the miner of this block mined one of the previous spacing-1 blocks, the block is invalid. This enforces a round-robin schedule, in which the permitted miners must create blocks in rotation in order to generate a valid blockchain.

The mining diversity parameter defines the strictness of the scheme, i.e. the proportion of permitted miners who would need to collude in order to undermine the network.
A value of 1 ensures that every permitted miner is included in the rotation, whereas 0 represents no restriction at all.
In general, higher values are safer, but a value too close to 1 can cause the blockchain to freeze up if some miners become inactive.
We suggest a value of 0.75 as a reasonable compromise. To conserve resources, nodes will not attempt to mine on a chain in which they already mined one of the previous spacing-blocks.

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The FootballCoin configured Multichain blockchain

The FootballCoin blockchain is configured so that anyone can connect to the blockchain and send or receive the native currency, XFC Coin, and assets.

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Here are the key parameters of the FootballCoin blockchain:

* Chain name: FBCCHAIN.
* Protocol version: 10008.
* Total coin supply in XFC: 1 000 000 000.
* Target block time: 30s.
* Maximum block size: 8388608b.
* Permission type: Anyone can connect, send or receive.
* Consensus for creating/removing administrator nodes: 0.6.
* IP ports for peer-to-peer communication and the JSON-RPC API: 7269 and 7268.
* The transaction verification is done through FootballCoin appointed mining nodes.
* Maximum metadata per transaction (OP_RETURN): 2097152b.
* Maximum standard transaction size: 4194304b.
* Number of decimals: 8.

The complete list of parameters is freely available by connecting to the FootballCoin blockchain.

Connecting to the FootballCoin blockchain

Being a reference Multichain implementation, you can connect to the blockchain by using the standard Multichain client and using any of the available commands.

To connect to the FootballCoin blockchain you need to run this command:
multichaind FBCCHAIN@wallet.xfccoin.io:7269

Why we believe in FootballCoin

We believe we have all the necessary ingredients for a long run successful project:

- a smart technology that helps us with data encryption and safety, anonymity and enough versatility to keep developing
- we are not just another cryptocoin, we have a strong project that supports our currency
- a growing industry – gaming - and a beloved sport that has supporters all over the world
- a dynamic sports market to relate to (new players appears every year, new competitions)
- endless possibilities to keep improving the game platform and user experience
- a pool of initial enthusiastic supporters that played the game from the start
- a great young and talented team of programmers, developers, designers, social media specialists etc
- a network of professionals to advise us.

Now go checkout www.footballcoin.io and live the thrill of the game.

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Contact

https://www.footballcoin.io/
https://www.xfccoin.io/
FootballCoin is a project developed by CROWNGEM LTD. BVI Incorporation No. 468405
Registered Office: Palm Grove House, Box 438,Road Town, Tortola, VG1110 British Virgin Island
Technical assistance: support@footballcoin.io
General inquiries: office@footballcoin.io

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