

*TrueFlip® Whitepaper (ver 0.9)*

 This document aims to detailedly describe the concept of an international blockchain<sup>1</sup> lottery, its principles and the business rules which support its technical implementation, as well the prize fund constitution, marketing plan - specially the referral program - and the Initial Coin Offer (ICO). Here will be addressed all relevant aspects related to the development, promotion and operation of the system in the international market.

 Este documento tem o objetivo de descrever detalhadamente o conceito de uma loteria internacional em cadeia de blocos, seus princípios e as regras de negócio que apoiam sua implementação técnica, bem como a constituição do fundo de premiação, o plano de publicidade - especialmente o programa de referência - e a Oferta Inicial de Moeda (OIM). Aqui serão abordados todos os aspectos relevantes relacionados ao desenvolvimento, promoção e funcionamento do sistema no mercado internacional.

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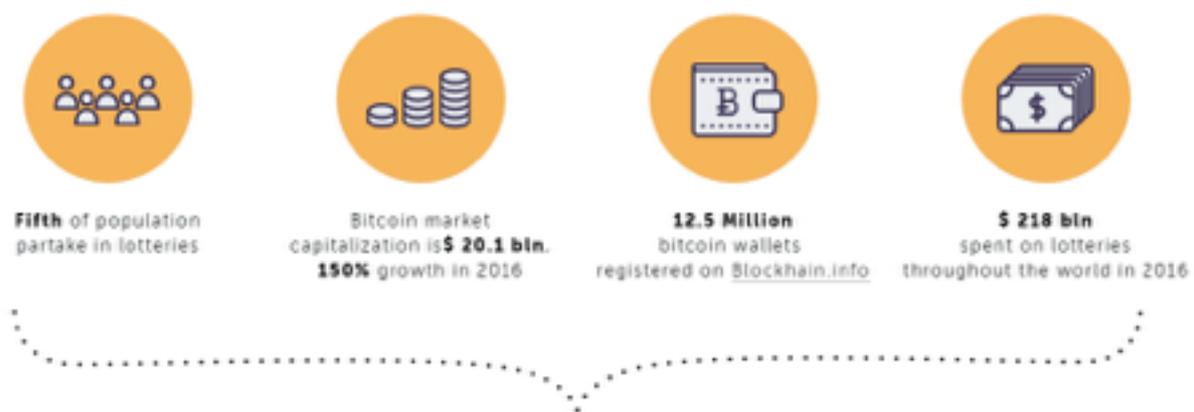
<sup>1</sup> A blockchain is a distributed database that maintains a continuously growing list of ordered records called blocks. By design, blockchains are inherently resistant to modification of the data — once recorded, the data in a block cannot be altered retroactively. <https://en.wikipedia.org/wiki/Blockchain>

## 1. Introduction

Today, lotteries are definitely one of the biggest games in the world, and possibly the largest in the entertainment area, it can be said that a fifth of the world population participates in some kind of lottery. On the other hand, it is important to note the market capitalization of Bitcoin<sup>2</sup> of \$ 20.1 billion, representing a growth of 150% in 2016. There are over 12.5 million Bitcoin wallets registered at Blockchain.info.

So when we talk about a lottery based on blockchain technology, we are talking about linking lottery participation in about 30% of the global gambling market with the constant and significant growth of Bitcoin's share in the global financial market. In 2016 alone, \$ 218 billion was spent on lotteries throughout the world.

Taken together, these trends bring brand new opportunities for online gambling, especially if we take into account the increasing number of networked devices and the number of users who prefer to play online and anonymously.



Despite the turnover and the penetration of lotteries as one of the most important games in the world, many are the problems often discussed about fair play due to the issues surrounding the raffles and the awards.

As already mentioned, at present a large number of issues involving prize distribution and fairness of raffles are often observed, which becomes even worse when associated with the difficulty of receiving the prize and the high fees and taxes charged.

However, with the massive use of blockchain technology, we finally have the opportunity to solve these old and well-known problems, bringing as main change and most important advantage the complete and total transparency of all the work processes involving the TrueFlip® platform.

On the TrueFlip® platform, all lottery issues such as ticket purchase, random number generation for betting and draws, prize fund constitution, prize tickets verification, prize division, among others are 100% implemented using blockchain technology and open

<sup>2</sup> Bitcoin is both a cryptocurrency and an electronic payment system invented by an unidentified programmer, or group of programmers, under the name of Satoshi Nakamoto. Bitcoin was introduced on 31 October 2008 to a cryptography mailing list, and released as open-source software in 2009. <https://en.wikipedia.org/wiki/Bitcoin>

source code available on gitHub<sup>3</sup>. All suggested changes to the platform are made by holders of TrueFlip® shares (TFL) tokens, the shareholders.

## 2. Operating scheme

TrueFlip® is the first international anonymous lottery based on the blockchain technology with one-second payouts and 100% open source code, guaranteeing transparent prize fund.

Although this lottery is based on the principle of PowerBall<sup>4</sup>, on TrueFlip® Platform it has a significant increase on winning possibility by means of reduction of the total quantity of numbers from 69 to 49, which gives about 1.3 times more chances to win than the state US lottery does. The system randomly draws 6 numbered balls and automatically checks the winning bets.

Because it is a lottery based on both Bitcoin and blockchain, it is possible to obtain several advantages, applying these advanced technologies to completely transform the way the game is processed, making it more convenient, open, fair and valuable.

Schematically:

- A player from any world place, regardless of the country, can sign up on our website (it will take just a few minutes) and partake in the game providing no documents;
- The game process is governed by the program with an open-access source code. This means participation in the game goes full-time, while our team members have no opportunity to interfere in the process and spoil chances of win;
- Prize payouts are executed instantly, no third parties involved. All payments are shown in the open blockchain registry and any player may make sure that we've given all prizes in full concordance with lottery rules.

All these advantages are possible due to Bitcoin - the digital currency having no central controlling body. All transactions are reflected in the open registry (blockchain) and any user can monitor payment processing all the time.

With that, one needs no documents, licenses, or registration to work with Bitcoin - it's enough just to open a wallet (on Blockchain.info, for example). In fact, the Bitcoin network is accessible to everybody connected to the Internet. This monetary system, as well as our lottery which is Bitcoin-based and works pursuant to the same rules, is one of the most friendly and open technologies today.

All those features can allow us to provide quality entertainment to any user that wants to test their luck on a daily basis by playing in the lottery, as well as put Trueflip® on the number one place among blockchain lottery sites in the Bitcoin community.

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<sup>3</sup> <https://github.com/TrueFlip/prizecounter/blob/master/algorithm.py>

<sup>4</sup> Powerball is an American lottery game coordinated by the Multi-State Lottery Association (MUSL), a nonprofit organization formed by an agreement with US lotteries. <https://en.wikipedia.org/wiki/Powerball>

### **3. Scheme of contracts (TrueFlip® implements blockchain smart contracts?)**

While current version of TrueFlip® Platform still doesn't implement standardized blockchain smart contracts, the correct use of blockchain technology gives the necessary transparency with the aim of allow everyone interested verify that TrueFlip® doesn't have any preset odds and can never be rigged because of the algorithm that is used to determine the numbers, delivering to users always an equal opportunity.

As TrueFlip® is rather centralized yet, we are considering an integration with an innovative platform for gambling projects called DAO.Casino®. This brand new platform can give to TrueFlip® total decentralization through use of smart contracts.

The adoption of DAO.Casino® protocol with its decentralised token implies that "everything in the system from random number generation to rewards distribution is transparent, auditable and administered by cryptographically verifiable code", inside an autonomous economic infrastructure.

On this decentralised business model, the protocol is hardcoded in a system of solidity contracts that disrupts the traditional gambling and gaming industry, making the market based on an open code and on smart contracts using blockchain technology to ensure safety, where is no place for fraud.

### **4. Tokens**

The TrueFlip® platform implements various feedback types, according to the result of an operation performed by the system. No human iteration is required. The purchase of betting tickets is the most frequent operation in the system and any financial movement in the platform is performed in Bitcoin regardless of the form of payment initially used. However, you can not confuse the financial system with the token implemented on the platform.

The token allows its owner to become a shareholder of the world's largest blockchain technology-based lottery.

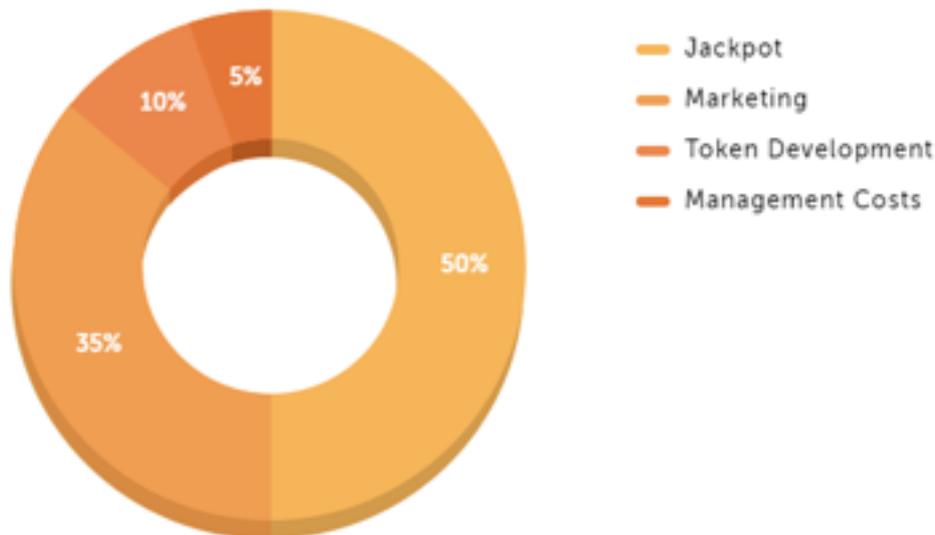
Currently, as part of the marketing strategy at the pre-ICO stage, 10,000 TrueFlip® shares (TFL) have been issued and are being sold for 0.007 BTC from Apr 1st, 2017, with a 30% discount.

The purpose of perform the Initial Coin Offer (ICO) is to crowdfunding the capital needed for the jackpot formation and the marketing of the TrueFlip® lottery. In addition TrueFlip® will reach the issue of 1,000,000 TrueFlip® shares (TFL) in 10 days after the end of the crowdfunding campaign.

Also, we need to implement a 100% transparent system, moving TrueFlip® to a full decentralised platform, make it independent to any third parties (including the executive team).

Another extremely important point is the total transparency in the distribution of capital by crowdfunding, according to the following distribution rules:

- 100% total;
- 55% come to the jackpot of the lottery;
- 35% allocated for marketing budget;
- 5% decentralized token development;
- 5% management fee.



At the initial stage tokens will can be distributed between managing team as compensation for their efforts to make TrueFlip® Platform a reality. In the future these tokens can be negotiated among other partners interested in the development and growth of the project/ platform.

In this sense, TFL token is the main investment asset of TrueFlip® Platform and guarantee to the shareholders a profit of 15% of the tickets sales revenue, which will be distributed between involved parties each month.

Tokens still not sold are company property and remain under its management. So revenue generated by these tokens must be addressed to the company.

## 5. Contract management

As already mentioned, purchase a token makes its owners a shareholders of TrueFlip® and its acquisition gives to them the right to vote.

As soon as TrueFlip® Platform becomes decentralized, all shareholders will be able to vote any management change, for example, to reducing or increasing of the marketing budget or dividends.

Further, with the adoption of smart contracts, all the voting process will be fully automatized, making all the process absolutely reliable.

## 6. Marketing strategy

In order to stimulate the steady growth of the platform, users can participate in one or more specific promotional actions, according to their user profile and engagement.



All players can spread the word about this innovative lottery platform and invite your friends and other players using their personal referral link. After your referred friends sign up on TrueFlip®, them both get a free ticket to start to play.

In addition, users will receive 2% of the winning amount by invited players (referred) on an ongoing basis (including **Jackpot!**). This feature is also implemented without human iteration and is part of the marketing strategy called "Friends' Winnings".

Also, if invited users buy TFL tokens during ICO on May-June, users will gain 5% of the amount purchased by them directly to their balances.

Thus, the TrueFlip® users remains always interested in inviting other players to the platform, because each guest ends up increasing the chances of winning in each new draw.

Another deep marketing strategy consists in take part on a partnership network, a technological platform connecting advertisers and partners, providing financial and informational interaction among them. Any kind of business organizations get opportunity to hold advertising campaigns online. On the other hand, media partners get instruments for selection and deployment of advertising offers.

Given the importance of a well-defined marketing plan, it's impossible ignore the increase in Internet users around the world and the influence that blogs and specialised sites have on those users. Despite the huge number of pages on the most varied platforms, the list of most influential pages practically doesn't change, varying only the local classification between them. This characteristic allow us easily identify the most effective media to run publicity campaigns.

Last but not least, if users realize them got required experience and skills, the TrueFlip® Platform will give the opportunity to become its exclusive representative with by far more interesting cooperation terms. It'll be very easy and simple to work with TrueFlip® : just contact its specialists and ask about it.

Concerning marketing budget, it's expensive but effective to achieve 100,000+ users per day. But this detailed plan is carefully supported by financial resources previously set out in the platform's fund-sharing strategy. All reports will be fully transparent for shareholders.

## 7. Formation and distribution of the prize fund

The system will automatically convert every payment to bitcoin and transfer funds to the prize fund of the lottery. The platform prize fund is transparent and always open for viewing due to blockchain technology, and comes to 65% of the ticket cost. Remaining 35% go to promotion (15%), shareholders' dividends (15%) and management fee (5%).

A bet win when numbers of the ticket match numbers of the winning set according to the table below.

Match	Prize	Probability
●○○○○○	Jackpot	1: 49 504 950
○○○○○	30% *	1: 1 984 127
○○○○●	20% *	1: 225 225
○○○○	1 BTC (\$1198.00)	1: 9 014
○○○●	0.5 BTC (\$599.00)	1: 5 241
○○●	0.05 BTC (\$59.90)	1: 374
○○○	0.025 BTC (\$29.95)	1: 210
○●	0.005 BTC (\$5.99)	1: 73
●	0.003 BTC (\$3.59)	1: 46
○	0.001 BTC (\$1.20)	2: 49

\* Winnings in these categories are determined after calculation of winnings with fixed prizes. The payout fund is the difference between the amount of the prize fund of the run and amount payable for fixed-prize winnings.

### Increase Jackpot

If Jackpot is not raffled in the current draw, then the funds from the current Jackpot are going to increase the next. Thus, the Jackpot is going growing constantly until the moment when it be played. Once the jackpot is played, a huge share of ticket sales is continually used to increase the jackpot again, as already shown above.

If some category in the table loses in the current draw, then the accumulated amount goes to the next run as a Jackpot too.

The platform keeps an archive of draws with the whole history and jackpot amount for each raffle.

## 8. Calculation

The process of determination of the winning set has 3 stages:

- Selling of tickets for the current run ends 30 minutes before **9:00 PM (GMT)**;
- At **9:00 PM**, the first hash of transactions accessible for everybody on blockchain.info is taken and this hash cannot be previously predicted;
- This hash is incorporated into the algorithm that forms 6 numbers based on the arithmetic action. The source code of the algorithm is open<sup>5</sup>, and anybody can check and repeat calculations.

TrueFlip® Platform algorithm is clear and very comprehensible, and it is possible to understand how a winning combination is generated following the simple steps below:

- Step 1: After the draw closes, the system waits for the next hash in the blockchain
- Step 2: Suppose this is the hash received by the system:

```
00000000000000000000000005867634c363284caf01ce5dd2d6e2a6c2ab26030f33493
```

- Step 3: This hash is then broken into sequences of 4 (four) characters, starting from the tail, and transformed into a number using NHEX base 16:

```
0000 0000 0000 0000 0058 6763 4c36 3284 caf0 1ce5 dd2d 6e2a 6c2a b260 30f3 3493
```

$$(3493)_{16} = (13459)_{10}$$

- Step 4: The found number (13459) is then divided module 49 (or 26 in the last iteration) and the remained is taken as one of the balls:

$$13459 \bmod 49 = 274 * 49 + 33$$

(hence the first ball is 33)

- Step 5: The system will repeat this iteration 5 times and discard a number which is already in the set (for the golden ball we simply use mod 26 instead of mod 49)

In case of doubt or just for curiosity, the algorithm can be tested on TrueFlip® website at <http://trueflip.io/check-honesty?lang=en>.

## 9. Deposit methods

Trueflip® Platform also incorporates multiple payment methods so every user has a chance to play the game.

From the moment that Trueflip® wants to be an international company and its idealizers realize that not every person has Bitcoins, so they decided to add multiple payment processors to the payment method in hope to increase the number of people playing. Some of these payments include bitcoins itself, credit cards, and big players of payment processing around the world as Advcash, BTC-e, Payeer, Paypal, OKPay, etc.

<sup>5</sup> <https://github.com/TrueFlip/prizecounter/blob/master/algorithm.py>

Since Trueflip® just opted into its beta-testing phase, the different type of currency is limited. However, Trueflip® dedicated development team is working on an in-house exchange to work with a wide range of cryptocurrencies (altcoins) that is already on the market, like Ethereum and Litecoins.

## **10. Payment of winnings**

Benefiting from the Bitcoin network features, when a ticket wins, the amount is instantly transferred to the users wallets under their accounts. Further, users may:

- send Bitcoins to their personal wallets in any other system and convert Bitcoins to any currency;
- send Bitcoins directly to the exchange services and then convert to any currency;
- use TrueFlip® account for any Bitcoin expenses (address of your TrueFlip® wallet is the same as in any other system).

## 11. Privacy

Privacy is of utmost importance at the Blockchain and Bitcoin community, and it couldn't be different on TrueFlip® Platform. We recognize the significance of protecting information which is stored or is intended to be stored on our system.

We don't store any kind of information which relates to an individual, that is any information relating to an identified or identifiable natural person, sometimes called a data subject, and have made protecting privacy and the confidentiality a fundamental component of our business model.

Our "Privacy Policy" informs of the ways we ensure privacy and the confidentiality of personal data and, even more, the anonymity of our users. We are always in compliance with applicable privacy laws in the countries in which we operate.

Privacy policies also describes the information we gather, how we may use those data and the circumstances under which we may disclose such information to third parties.

## 12. Roadmap

The TrueFlip® Platform will be launched in the following stages:

1. Development concept
2. Formalization of official documents
3. Pre-ICO
4. ICO
5. \$1M+ Jackpot
6. Development and launch of the TFL token
7. Integration with DAO.Casino® Platform and full decentralization of TrueFlip® Platform



- We need a new roadmap scheme (image) including the decentralization expectative"  
= till monday will make

## 13. Conclusion

This document presents in great part the technological and marketing strategies planned and adopted with the objective of idealizing and maintaining the constant development of the TrueFlip® Platform. The extensive use of both Blockchain and Bitcoin technologies combined gives unique features to the system presented here, elevating the TrueFlip® lottery to a new level of reliability and process management. Due to the level of automation and reliability achieved this platform undoubtedly presents itself as an unparalleled investment opportunity for those who believe in the advances brought by the embedded technology in this project and have decided to join TrueFlip® in its early stages (pre-ICO and ICO) with the expectation ever closer to sharing the success already guaranteed.

## References

1. <https://bitcoin.org>
2. <https://github.com/TrueFlip/prizecounter>
3. <http://trueflip.io/?lang=en>
4. <http://trueflip.io/ico>
5. <http://dao.casino>