

Applications of Blockchain in the Betting Industry

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Blockchain Fundamentals

Abstract:

Through the rise of virtualization, many in person businesses, such as Casinos, have found themselves digitizing their operations. The main source of income for Casinos comes from betting, a game that becomes a little complicated after going virtual. This paper examines and proposes a solution to the ongoing problems of online betting through an analysis of the subcategory Sports Betting, while also making a comment on the legal ramifications of such solution.

Introduction:

Sport betting is known as one of the most renowned forms of gambling, and has grown to the top of the gambling pyramid in recent years. It is now one of the favorite pastimes of millions of sports enthusiasts all around the world. This style of betting is as simple as it sounds: people place wagers on the outcomes of a certain sports event, ranging through all major sports leagues such as the NBA, MLB, Champions League, and the NFL.

Individuals usually place these bets through a bookmaker, who provides their betting services with specific odds agreed upon beforehand. With these odds set, individuals can bet on a variety of markets including winner, first scorer, halftime results, and predicting the final score. In the past 10 years, Sports Betting has grown into a multi-billion dollar industry and is predicted to increase even more in the future - Sports Betting is expected to hit a 92.9 billion market cap by the end of 2023, while capping out at 66.7 billion dollars in 2020 (Lock)

One of the biggest reasons for this huge increase is due to casinos and many established brick and mortar bookmakers providing their betting services virtually. Large casinos have created various user-friendly applications, making it quick and easy to place a bet on your phone.

Placing a bet through such an institution will be subject to heavy taxation, which many people try to circumvent by placing bets through unsound bookers. Placing a bet either way still creates a security risk, increased base fee, and increased wait to receive monetary returns.

Existing Platforms:

FanDuel

FanDuel is the second most popular sports betting site in the country having more than 6 million registered users as of May 2020. The combination of FanDuel's sleek interface, extensive and exhaustive lists of different bets per sports, as well as easy monetary access lures in bettors of all ages. As amazing as Fanduel may seem, it does come with quite a few drawbacks. On initial sign up, Fanduel requires all their users to enter in the last four digits of their social security number to verify their account. This poses an immediate risk to all users if FanDuel gets hacked. In addition, Every bet made is tracked and stored and all earnings are made public, which many bettors are apprehensive of.

If users try to withdraw their earnings, it will take them up to 48 hours to receive via PayPal, 2 – 4 business days for any online banking, and 7 – 10 business days via check. Besides this, FanDuel is also required to apply a 24% tax on all earnings above 600 dollars. For many high-stake bettors, this is quite a lot of money.(FanDuel)

DraftKings

DraftKings is the most popular sports betting site in the country with over 8 million registered users. Similar to FanDuel, DraftKings has a simple user interface making it very easy for users to place bets.(TheSportsGeek) This aspect coupled with its great betting deals draws in many new users who are unfamiliar with the sports gambling realm. In comparison to FanDuel, DraftKings has a wider range of sports and markets to choose from.

DraftKings also requires all bettors to give the last four digits for their social security number to verify their account, creating a serious risk if they were to be hacked. In their privacy notice they clearly state,

“we(DraftKings) may automatically track certain information about your visits to and usage of our Website, Applications, and Services, including your browser type, operating system, Internet Protocol (IP) address device identifier, domain name, clickstream data, referring/exist pages, geolocation, and a date/time stamp for your visit. We also use this information to analyze trends, administer the Website, gather demographic information about our user base, deliver advertising, perform research, protect our legal rights ...”(DraftKings)

This shows that DraftKings tracks all personal data that touches their site. Many bettors are unaware that their information is being taken by DraftKings and are most likely opposed to their data being collected and stored. The Privacy notice also states that DraftKings uses third party analytics tools to analyze how users use their services.

Similar to FanDuel, there is a tax of 25% placed on any earnings above \$600 with a delay of around 2 days if they want to access any of their earnings.

In October 2020, both FanDuel and DraftKings were both hacked. Consequently, they were forced to settle sports contests manually and issue refunds for all users impacted by the hack. After the hack, DraftKings issued a public statement saying “DraftKings has made investments in redundancies for a wide variety of processes... to ensure minimal interruption for customers when this sort of situation arises.”(Allen) This indicates that there are significant improvements needed in order to ensure the privacy of their users and that the company and users suffer no monetary losses.

Bovada.ai

Bovada is another very popular sports betting site, but for a different reason. Bovada allows money to be inserted and drawn out in the form of the cryptocurrency Bitcoin, with added

bonuses. Since Bovada operates offshore, it does not follow the same regulations as an American online gambling regulator. The downsides of this platform, however, are that they only allow American players and there is an immediate 5.9% fee on credit card deposits.(TheSportsGeek)

BookKeeper

Many individuals who want to circumnavigate all the extra fees they might pay through big casinos, or do not want to give the casinos their information, end up relying on Brick and Mortar BookKeepers. The BookKeepers place bets on behalf of the bettor against the BookKeeper themselves. This means that if the bettor wins then the BookKeeper loses money and vice versa. Bettors usually bet on a line of credit, so dependent on how their bets go, they will either have to pay the BookKeeper at the end of the week or the BookKeeper will pay them their earnings. In order to complete this transaction, the BookKeeper gets paid a small fee dependent on who the odds are favoring for each bet.(Christopher)

The main downsides of using a BookKeeper is that bettors still have to pay a fee for every bet and many BookKeepers operate outside of the law. This means that if a bettor is not able to pay off their line of credit, some BookKeepers may go so far as to inflict physical harm.(Christopher) Since they operate all by themselves, they have the freedom to change the predefined betting rules whenever they like. In addition, the bettor will only be able to access their earnings at the very end of the betting week.

Challenges Faced by Bettors on Betting Platforms

1. Security

Sports Betting sites handle quite a large sum of individuals money, which means that the betting system has to be able to ensure the safety of the money through all stages of the betting process. They also store quite a bit of users' information, including bettors' social security numbers. Safety for this data is of utmost importance.

2. Access to Earnings

When a bettor ends up earning money from a placed bet, they would like immediate access to their money. Whether the bet was placed from a Casino or a BookKeeper, the money takes on average 3 to 4 days to get back to the bettor.

3. Anonymity

A bettor places a bet on the assumption that their personal data is kept hidden and their betting history is not being tracked. However, for a majority of the large betting sites this is not the case.

4. Availability

As of now, Sports betting sites within the country do not allow outside bettors to use their site. This substantially decreases the amount of bettors who end up betting on sports events.

5. Taxes and Fees

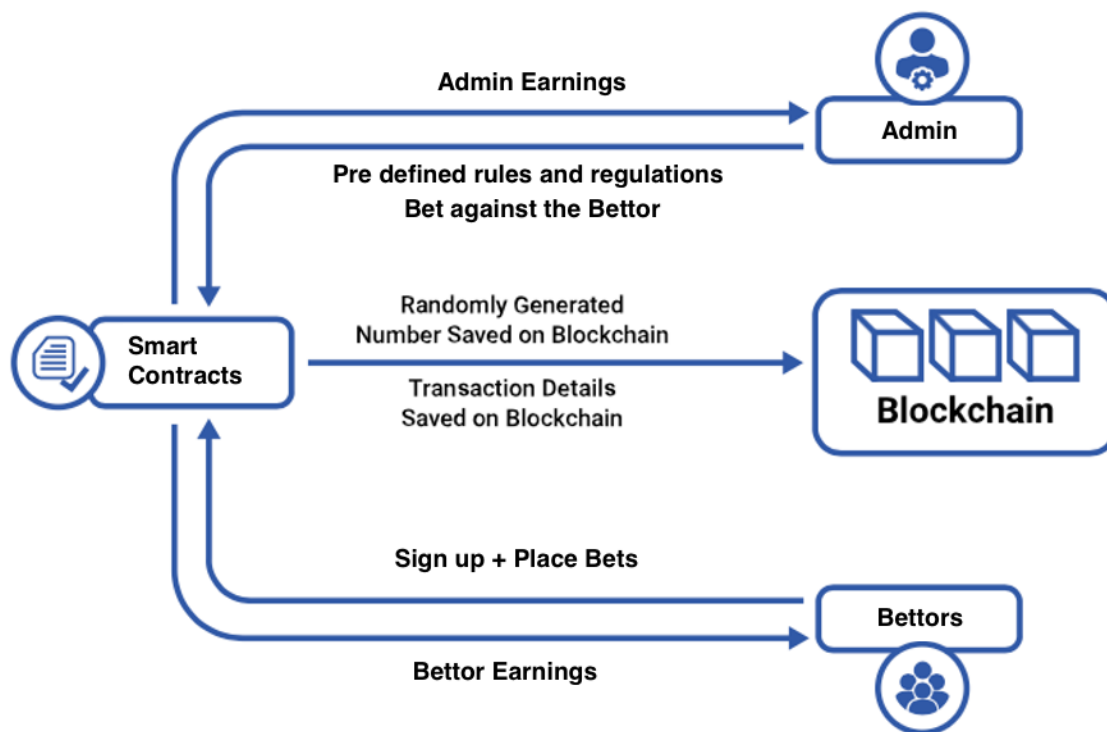
Each platform has various taxes and fees which draw away heavily from the bettor's earnings. This ends up causing the bettor to switch to an underground BookKeeper, who they have to pay less for.

6. Assurance

The agreement between a bettor and a BookKeeper is all in the hands of the BookKeeper. If the BookKeeper changes the rules, the bettor has no choice but to simply abide by them.

Solution

As a solution to these problems, I propose SportsBlock, the first sports betting system over blockchain. SportsBlock will be able to achieve greater user security, faster access to earnings, anonymity while placing bets, access outside the United States, low transaction costs, no tax on earnings, and immutable agreements. SportsBlock has four main moving parts: thebettors, smart contracts, the public blockchain, and the admin.



Bettor:

The bettor will start the betting process by downloading the SportsBlock application on their mobile device or through the SportsBlock website. Here, they will sign up using only their name, crypto wallet address, email address, and phone number. Through this simple sign up, the bettor can rest easy knowing neither SportsBlock nor any hackers have access to their personal information. After successfully signing up, the bettor can now freely place a bet on the numerous markets offered on the application.(Takyar) Upon each bet, a nominal fee is required to discourage vandals from spamming the network. When a bet is placed, money will be draw out

from their crypto wallet and entered into a smart contract. Placing a bet using cryptocurrency ensures every bettors' identity remains anonymous.

Admin:

For any bet, there is always two sides. An entity always has to play against the bettor placing the bet. In the case of a casino such as DraftKings, the other side of the bet is the organization as a whole. For SportsBlock, there is a bogie entity called Admin who always bets against the bettor. If the bettor wins, the Admin loses money, and if the bettor loses, the Admin wins money. This bogie entity is also "in-charge" of setting all the pre-defined rules and regulations for any bet on the application. When a bettor places a bet on these predefinitions, the Admin will then deploy a smart contract containing those predefinitions.

Smart Contract:

After being provided with the rules and regulations from the Admin, and bets from both the Admin and the bettor, a smart contract is then deployed. The details of the contract will contain the game being bet on, the market, the monetary value being put down by both the Admin and the bettor, and the bet itself. On deployment, the transaction is then added to the blockchain. Through the use of smart contracts, SportsBlock certifies the integrity of two main elements: anonymity and assurance. The smart contract ensures the terms set on the bet cannot be changed during the duration of the bet, allowing bettors to be more willing to trust the betting system. In addition, since bettors are identified through unique addresses generated on each transaction, there exists a layer of anonymity between the bettor and the rest of the SportsBlock network.(Linoy)

Blockchain + EVM:

What is an EVM?

An Ethereum Virtual Machine(EVM) is a sandboxed virtual stack contained within full Ethereum nodes tasked with processing and executing contract bytecode. EVMs are usually used to improve the portability of software.(Hollander)

SportsBlock plans to operate on the brand new Telos EVM running on the EOS.IO blockchain. Many popular platforms are usually developed solely on the Ethereum network, however, two of the main goals of SportsBlock is to process smart contracts as fast as possible, and with little to no fees per transaction. Telos provides exactly what SportsBlock requires. The Telos platform is said to be more than 700 times faster than Ethereum and contains no network fees. The Telos' network also supports 10,000 transactions per second while the Ethereum network supports only 14 transactions per second.(Riley)

Since blockchains aren't contained to a single country, SportsBlock is not operating under the jurisdiction of the United States government. This means that all profits are not necessarily subject to the same taxes and fees as other sport betting services. This would save many bettors from the heavy 25% fee on their earnings.

Legal Limitations

Online sports betting has been illegal for the past decade under the Professional and Amateur Sports Protection Act(PASPA). In 2018, the supreme court decided to remove PASPA, causing a surge in the sports betting market. Since then, 7 states have legalized sports betting. This means that individuals in those 7 states can legally place bets physically and virtually anywhere within those states. The main drawback of legalization is extreme taxation.(Smiley) Total taxes on wagers range from 8.5% all the way to a whopping 51%. In certain states, state-licensed operators are hit with face licensure fees.(Cormack) For example, in Pennsylvania, operators have to pay 10 million dollars just for a sports-wagering license.

On the other hand, many popular offshore betting services are legal in their respective countries.

“In the last few years, the Justice Department has made it very clear: You cannot open-up an offshore casino online and start accepting bets using actual money from the United States.”(Cormack)

However, as stated above, United States laws aim to prohibit any international services to be created to operate within United States. This is heavily based on the high taxes placed on bets by the United States government. This means that all bettors trying to evade the heavy taxations have to rely on other underground services.

In addition, US Bitcoin casinos like Bovada have been cracked down on so hard that even offshore casinos geoblock IP addresses that could be linked to the US to avoid trouble with the US government.(onlineSportsBetting)

As distressing as this may seem, SportsBlock may still have a way around these legal limitations. Since SportsBlock runs on the blockchain network, there isn't any one country who is in control of the application. Hence, the term “offshore” would not be very viable in this case. Additionally, since the chain only tracks crypto wallets addresses, it is hard to track down who is placing the bets. However it is not fully impossible. Even if individuals were to be caught placing bets, there would be no punishment for these bettors under current law. The only person who could be punished is the owner of SportsBlock, which is technically no one person.

Conclusion

SportsBlock is a great sports betting application in comparison to the top go-to sport betting sites. It has better privacy through the use of crypto wallets and Telos, faster access to earnings and availability outside the United States, and significantly smaller fees. The only problem with SportsBlock is that it trends on a fine legal line, due to United States laws. Hopefully in the near future the Supreme Court will remove certain online betting regulations, allowing more freedom for SportsBlock to become a reality.

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