



# DICEGAME

WHITE PAPER



The gambling is as old as human history. The heart of it is the dice games.

The dice is one of the most popular and exciting games survived to our days. The first dice marks the beginning of all gambling games. Nowadays technology is at heart of almost everything in our lives. DICEGAME project aims to connect the modern world of higher technologies with the world of chance and luck games and bring it to the next evolutionary step.

Have you ever thought how does online gambling industry work? Gambling is about winning or losing and sometimes not having control, at least at the wishful and reasonable extent. For us it's evident that transparency and simplicity are the main principles that many gaming systems lack even today. Today there is a new emerging technology called blockchain that makes an incredible contribution into online gambling industry. The blockchain benefits for the online gambling include secure financial operations between people around the world, ability to run those operations transparently without intermediaries, absence of inherent commissions, privacy limitations and middleman. We are able to bring all these benefits with the decentralized iGaming platform based on smart contracts. Thus, players have equal chance of winning (up to 50%), all games are face-to-face, no limits on deposits and withdrawals. Our project is the innovative way to develop and empower well-loved time-proved games.

Thanks to blockchain technology we connect distant past and upcoming future of the iGaming world.

Vadim Shlapokov

FOUNDER & CEO

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# INTRODUCTION

From the historical point of view, the origin of the dice dates back more than 5 thousand years<sup>1</sup>. In the ancient times people used dice to forecast the future, resolve military conflicts, conduct elections, and, for sure, to play. The pharaohs, imperators, common people were engaged in games with the dice. The dice ("gambling" from the arabic) is the foundation of the Game by itself and its philosophy.

When the dice appeared in gambling, people wanted to bend it to their will to win. Lots of cheating dice were found from digs in the ancient Rome (crooked, leaded, mercuric, sharpen, drilled out, dice with changed markers). However, even today we can notice how experienced players shake dice and roll them between fingers to determine the center-of-gravity shift.

The problem of trust persists to the modern days. It is even sharper when it comes to P2P games where person plays against another person and not the house. Due to regulations and legislation progress most of the companies are implementing fair play mechanisms that are checked by authorities on the regular basis. Another story is P2P play where an opponent (almost a random person) can't be duly checked.

Moreover the number of dice based games have grown substantially to more than 200<sup>2</sup>.

Person to person betting and play is a fast growing Internet-based service industry. Gambling takes place through an online medium like mobile device, personal computer, even interactive TV or smart watches.

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<sup>1</sup> ["The History of Gambling"](#)

<sup>2</sup> ["A to Z List of Dice Games"](#)

The player's need and requirement for trust and transparency has grown substantially. Players want to be able to check validity and integrity of results anytime and anywhere. In such a way one can gain maximum player audience and good credibility. We, as DICEGAME team, take this challenge and make step towards the world of higher technologies. Thus online gambling industry could keep prospering and attracting lots of new people. Issues like results verification and cheating might also come not from the user side, but from the side of centralized systems in online games.

In 2018, the online gambling industry is expected to surpass \$50 billion. A study by SuperData Research found that mobile gambling was up to 75% year-over-year, and that it's now accounted for over 25% of all gambling. And yet, there is a lack of transparency in knowing which sites are safe, honest and trustworthy.

Though the majority of online gambling sites are reputable, the industry lacks an effective means for a player to verify the reliability of a site. The mark of a "good" gambling site tends to be a byproduct of their reputation. Players are inclined to gravitate towards these sites, not because of the third party validation, but rather reviews they receive. Players are trusting recommendations of strangers on a forum or other informational channel.

The DICEGAME platform is using open source Smart Contracts on the blockchain providing access to all algorithms of the dice value and winner determination. In the White Paper we explore the gambling market and analyze existing problems, propose the solution of the DICEGAME platform and shed the light on essential aspects of technical implementation. Finally, we are going to present financial projections and terms of token sale.

WE REALIZE THE PRESENCE OF PROBLEMS IN THE CURRENT WORLD OF ONLINE GAMBLING AND WE ACCEPT THIS CHALLENGE BY DEVELOPING OUR OWN PERSPECTIVE. WE SEE THE DICEGAME PLATFORM AS A NEW, BETTER AND THE ONLY WAY TO FULFILL THAT URGE OF WINNING BIG. **WELCOME TO THE NEW ERA.**

# REVIEW OF THE WORLD GAMBLING INDUSTRY

The gambling industry is one of the oldest and most attractive industry which exists and oughts to exit as long as humanity. It attracts millions on many ideas. For someone it is great fun, for somebody it is hoppy or even for someone else it is a winning or earning easy money. Still there are many reasons but one is for sure very appealing to many people.

Historically gambling was available only to a rich society. With globalization and new trade markets gambling spread across the Globe in a very fast manner. Another factors like technology revolution have also made contribution to the industry development. Smartphones emerged during the last decade bringing a lot of useful features into our lives including new ways for entertainment. Now gambling became iGaming (for Internet gaming/gambling) - a personal way to play without need to go to Casino.

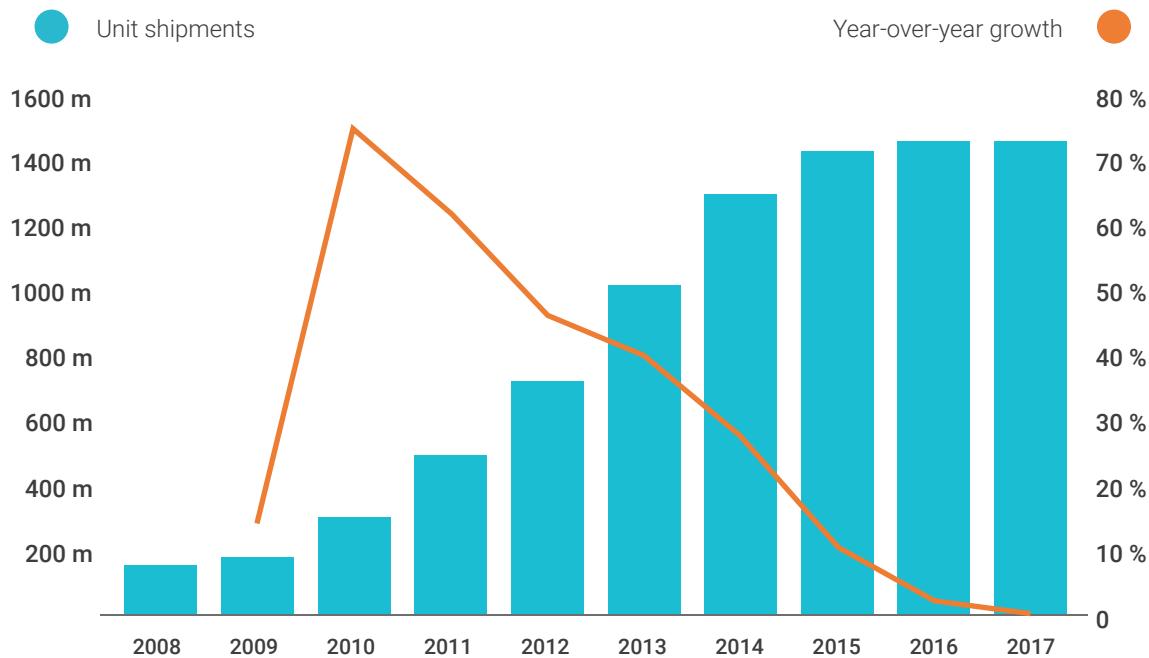
According to the Statistica.com<sup>3</sup> the number of smartphones sold yearly hits 1.5 bln devices. With the population of 7.6 bln people penetration of personal devices increases the marketplace by the factor of x10. By 2020 there will be 6 bln smart devices in circulation<sup>4</sup>.

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<sup>3</sup> [Global smartphone sales](#)

<sup>4</sup> [Smartphones in circulation in 2020](#)

## Worldwide smartphone shipments and year-over-year shipment growth



This opens a great market and puts high pressure on standards and quality of services.

### LET'S HAVE A LOOK

at the online gambling industry and point out some interesting facts<sup>5</sup>:

- The world's very first online casino was created in 1997. It was named as Internet Casino System Version IV. Today, over 2000 official and legal gambling establishments are registered on the World Wide Web.
- The biggest win in the history of online casinos had been paid out by the PAF gambling site in Finland. A newcomer in gambling, a resident of Helsinki, after just 30 minutes of playing at Mega Fortune, had won almost 18 million euros.
- Online casinos, along with classic gambling, also provide lotteries. Surprisingly, they are more demanded according to statistics. Total income of gambling establishments are accounted for about 55%. Moreover, the statistics states that every second inhabitant of the planet has played a lottery at least once in his life.

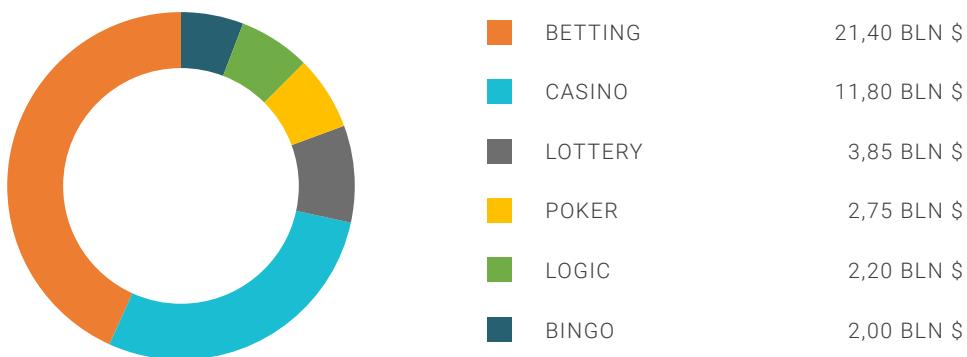
- Cypriots are considered as a nation that spend the most money on online casinos. Annually, about 2.5 million euros fall to the Internet gambling. If you consider that the population of Cyprus - only 800 thousand inhabitants, it turns out that each inhabitant leaves about 3125 euros at online casino.
- As the statistics shows, people over 30 years old are involved into gambling more often. Every day, these players spend from 3 to 5 hours on online gambling. However, young people prefer other Internet entertainments not involving monetary risks.
- Active gamblers of online casinos are 11% of the total number of Internet users from around the globe. According to statistics, most of them prefer poker to other classic gambling games.
- As the latest data shows, today the most of online casino audience consists of men. Their share is about 84%. Women are inherently less adventurous, but recently the proportion of active female players has been increasing annually.
- It is real to play online for free. Nowadays, the most online casinos today offer to experience a gaming without money. Therefore, it is a wonderful opportunity for those gamblers who are interested in game process more than in prize, so that they can enjoy it without spending a penny.
- The countries, which legalized online casinos, also applied age restrictions. Somewhere, even teenagers are allowed to gamble, while on other territories, people are accessed to gambling entertainment only after reaching the age of 21.
- All the stories about effective winning strategies are just myths, according to many scientists. Their conclusions are based on the most complicated calculations. In addition, as it was proved by Albert Einstein, it is impossible to calculate the regularity of the fallout of numbers in roulette. In other words, all the theories published on the Internet and secret techniques have no practical confirmation.

Clearly, gambling is the way to risk your money on the outcome that is based on the luck. It basically depends on the probability of an event that may happen (or may not). Let's look closer at the online gambling market size and analyze it to get a clear understanding how it works and where is the niche for DICEGAME innovative platform.

## ONLINE GAMBLING MARKET SIZE

Considering the fact that online gambling now makes up more than 25% of total gambling revenue, with the gambling industry forecasted to hit \$50bn in revenue this year. Below we see detailed market statistics for 2016<sup>6</sup>.

Global online gambling market revenue in 2016



Today the most popular versions of gambling on mobile platforms are betting (\$21.4 bln), casinos (\$11.8 bln), lotteries (\$3.85 bln). Dice games are included in casino that represents ~25% of the market. According to the recent statistics global income of online gambling is \$44 bln in 2016, the market volume for 2020 is measured as \$81.7 bln.

<sup>5</sup> [Interesting facts about online casino](#)

<sup>6</sup> [Global Online Gambling Market to 2020](#)

## World online gambling market, BLN USD



According to the data from the [H2 Gambling Capital](#) the global income of online gambling is \$44 billions in 2016, the market volume for 2020 is measured as [\\$81.7 billions](#) while the Compound Annual Growth Rate is 10.8%. Alongside market development, the share of mobile usage for gambling purposes is increasing as well. As is it showed on the picture above the online Gaming market has already doubled and tripled since the last decade and it will double in size again in the nearest years.

## TREND PREDICTIONS FOR ONLINE GAMBLING<sup>7</sup>

### ARTIFICIAL INTELLIGENCE

AI has a tremendous potential for use in a wide variety of tech, because it consists of learning capacities that enable personal adjusting depending on the user's needs. Over the years AI has become an essential part of gaming. Assembling everything together, it is by now more than clear that AI and gaming are rapidly becoming united, and the prediction is that in 2018 they will be inseparable.

While AI has always operated at the cutting edge of tech to make better games, the future brings a feature where game theory will also contribute for better AI practice. A glimpse of the future comes from Michigan State University, where researchers have deployed AI into a game specifically to learn from each player's behavior.

<sup>7</sup> [2018 Trends Predictions in Games Industry](#)

## EDGE OF COMPUTING

The other trend that will become a major name in 2018 is edge computing. This is a rather simple concept, referring to the inputting of internet of things capabilities into a product itself. It is believed that Edge computing will vastly improve the performance of digital games. By now games are usually available within an app store, where a user can download the game to a device, maybe make some in-app purchases, and play locally on the device itself. Edge servers will provide reduced latency, which will enable games to be streamed on demand to any device. This will eliminate the need to download or purchase an app, and the app itself will not be limited only to mobile device's storage or performance, but mainly its connection to the network.

## BLOCKCHAIN IMPLEMENTATION

Since the beginning of the 2000s, large online casinos have created non-profit audit organizations to prove their fairness. The introduction of a blockchain into the casino structure makes it absolutely trustless, provides absolute fairness to the operator. Any player can check the random generator algorithm and all the transactions. Thus, online casinos no longer require an audit at all.

## VR WILL REVOLUTIONIZE PC GAMING

This past year many game developers implemented Virtual Reality (VR) technology into their games. They have been pushing their gaming limits with new integrated advanced graphics and better quality monitor. In 2018 the PC gaming ecosystem will keep developing and it will become more innovative, accessible and adaptable as a result of the growth of technology like VR and the ability to share digital content freely. However, VR is limited by its hardware wherein the content mainly relies on the capabilities of the device that is being used and how promptly it can continue producing content. While VR is still on the rise, many gamers are considering AR over VR, because of its advantages.

## AR IS THE FUTURE

On the other hand, Augmented Reality (AR) has no bound of limitations and it enables a usage by anyone with a smart device. It has a low investment cost, which makes it more easily accessible than VR.

The gaming companies have already shown an increased focus towards AR, and these rapid changes expected to offer new opportunities for developers, publishers as well as technology partners. The prediction is that in 2018 AR is going to establish itself with the online gaming industry, and it is expected to evolve much more with the rise of the gaming market in the years to come.

## eSPORTS

eSports is an industry filled with commercial opportunity because there are a variety of revenue streams that companies can tap into. Virtual and augmented reality firms also stand to benefit from eSports. Game publishers approach their Esport ecosystems in different ways. As eSports becomes increasingly recognized it is likely to continue affecting how games are designed and played.

The audience is high-value and global, and its numbers are rising. For those to want to enter tournaments, playing MOBAs has become like training for any other sport, and for the people who enjoy watching and reading about eSports, it has an influence on the games they choose to buy and play.

**TO SUM UP**, increasing smartphone and tablet penetration, increased device capability and the confidence of users are driving the market growth. The evolution of gambling is bringing up the unimagined revenue potentials. The global gambling industry has been growing at the one of the most rapid paces among any other industries.

The DICEGAME appears to be just the right solution for the market appearing in the right time to enhance game experience and change attitude to gambling for many people.

The DICEGAME platform is based on blockchain technology that helps to overcome trust issues by enhancing transparency and traceability. Blockchain uses a decentralized system based on co-ordinated independent nodes network thereby not giving any particular centralized advantage to anyone in the process. Network of nodes verify the bet integrity, ruling out the intervention of any third party.

P2P blockchain based betting is the new trend in the world of online gaming. Investing now in blockchain-based projects is similar to investing in big Internet and technological companies in earlier 2000s. It will make any investor being a part of a big move making the future.

## BLOCKCHAIN TECHNOLOGY IN ONLINE GAMBLING

### TECHNICAL DEFINITION

Blockchain is a distributed database or ledger spread over a network of electronic devices where records of cryptocurrency transactions are kept, away from revision or from tampering.

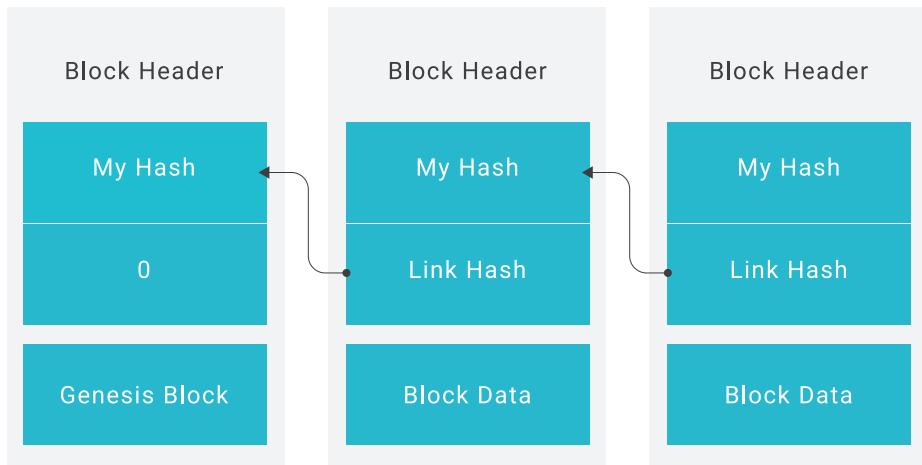
Blockchain refers to a type of data structure that enables identifying and tracking transactions digitally and sharing this information across a distributed network of computers, creating in a sense a distributed trust network.

### INDUSTRIAL DEFINITION (INTERPRETATION)

The introduction of blockchain tech to the gambling industry would deliver much needed permanent, verified records on a distributed ledger that cannot be manipulated, such an attribute providing much-needed transparency across the online industry.

One of the key benefits in using blockchain's decentralized ledger is that gamblers will be able to place bets armed with the knowledge that there is a transparency in where the bets placed are going and also that the odds for each bet were generated fairly and that the results were also produced fairly.

Technically the linkage of these blocks of records is done using cryptographic algorithms, which merge together information about the transactions recorded in the current block, as well as information about the block that precedes it.



The blockchain technology leads to the creation of the decentralized gambling market. As all payments and transactions are recorded in the blockchain. Users are secured from transaction recall, duplicate payments and cheating. The users are confident in where their money is, they are assured that results are calculated in a fair way. The blockchain technology leads to the introduction of the decentralized principles for data storage and processing in online gambling market.

## SMART CONTRACTS

Particular (advanced) blockchains are focused on the concept of a smart contract. This is a digital agreement between parties, whose terms could be enforced by computers and would add the element of transparency to any transaction. With an impartial network insuring the contract is adhered to, any potential obstacles to transparency have been eradicated with blockchain technology.

With an online gambling blockchain in place, there is no obfuscation of the rules, which are clearly legible to all parties, and an instant payout is guaranteed. There are no concerns about a site withholding winnings, because there is no site governing the game. The player's funds go directly into the contract (and, if they win, back out again), without a middleman interfering.

**THE DICEGAME PLATFORM WILL ENABLE FOR ANY PARTICIPANT TO CHECK GAMING HISTORY, RESULTS GENERATION AND BET SETTLEMENTS ANYTIME AND ANYWHERE (USING EXPLORER TOOL).**

The blockchain technology has massive implications for changing the way people look at the industry. The gambling industry, in particular, is a black box of numbers and algorithms - most people cannot seem to get their heads around the esoteric formulae used let alone trust that this opaque operator is honest! As people begin to understand the benefit of transparency that blockchain technology offers, the interest in making the gambling industry faster, more accessible and transparent to everyone continues to grow.

# MARKET PROBLEMS

In the most cases gamblers don't have a deep dive into the inner working details of the traditional gambling industry. Few players are interested in technical implementation, principles, probabilities and mechanics of the game play. They are mostly driven only by the idea of getting involved into playing process and having fun.

Unfortunately, the reality is not perfect yet. The most of existing gambling solutions are still not completely prone to cheating and unfairness in one way or another. Companies all over the world are launching different kinds of the gambling institutions with aim to help in controlling over fair gambling principles.

While competition drives the progress (and it is usually a good thing), there are several legacy problems with the current gambling industry that it is good to be aware of:

1

## LACK OF TRUST (TO THE SYSTEM)

Lack of game process understanding, lack of proves of fair-dealing and transparency, not transparent formulas of combinations drawn and winner determination algorithms leading to the lack of user's trust.

2

## LIMITATIONS ON DEPOSITS AND WITHDRAWALS

Traditional online casinos are regulated by the law of money laundering and legalization (AML & KYC). The most of the online casinos and poker rooms use regular currencies that obey the law of the processing centers that withdraw pricy fees and taxes for payment processing, currency conversion and other operations. The market average commission for cash in is 8% of the deposit sum, and cash out – starting from 2%.

3

## COMMERCIAL EXPLOIT OF FROZEN FUNDS

As a rule, all players' deposits are stored on the account of the traditional casinos. So that, casinos have access to all money paid by players and can commercially exploit them. Deposits are profitable for casinos, as these institutions have the possibility to function as credit organization.

# 4

## CENTRALIZED SYSTEM OF THE RANDOM NUMBER GENERATOR

Casinos are always paid off not depending on clients' win or loss. This is how it works: the base of the mechanism is the random number generator. Potentially, this system can be controlled from the outside, i.e. the one with the access to a server or programming code is able to directly influence game results.

# 5

## SPECIAL SKILLS AND EXPERIENCE REQUIRED

Average players or novice without any defined game strategy are more likely to be at a high risk of loss. In the traditional poker rooms 80% of players become planktons for 20% of whales.

# 6

## VULNARABILITY AND SECURITY

Currently, casinos store their data in centralized servers and, though the latest encryption technologies in place help keep such data safe, the information still isn't impregnable. In fact, several cases of hacking have been recorded in the past three years. Online casinos are attractive targets for hackers as a large sum of money flows through them and hacking them could be very lucrative.

# 7

## SLOW VERIFICATION

If to speak about games using fiat currency, we can notice, that the user has to provide lots of personal data to be registered for a game. Vetting personal information, a single case at a time slows down the process of setting up accounts and playing casino games.

# 8

## HIGH COMMISSIONS AND SLOW TRANSACTION SPEEDS

The world doesn't stop developing, so online casinos start implementing all algorithms using blockchain technology. But, here we cannot but identify some actual problems. Such online casinos in its majority use Ethereum blockchain as the base of all mechanisms. Thus, we can observe high commissions for each call to smart contract and low speed of transactions.

Adding up all problems mentioned above and due to the virtual nature of online gambling, it is hard for players to verify the authenticity of sites they are using. Unlike in physical casinos, randomness and deck shuffling can't be easily verified. Players interact with other players through GUIs, which connect to the gambling site's server in a non-transparent manner.

Lack of trust in payment systems and security are primary reasons for avoiding online gambling. In an online survey of 10,838 online casino and poker players from over 96 countries, respondents reported a high level of mistrust of online gambling.

The DICEGAME team worked for several years to study issues and create solution that could gain trust of the users. We develop tools to increase security and make all algorithms visible and checkable. The DICEGAME positions as friendly and fair play provider with the use of cryptocurrencies. For more information on cryptocurrencies follow the next sections.

The DICEGAME platform based on blockchain technology and powered by cryptocurrency allows to implement robust solution suitable to be one of the leaders in online gaming industry.

While the next sections of the document reveal details about technical solution, token-economics and other important topics the table below summarizes significant advantages of the blockchain technology that we identified (in order of priority).

ISSUE / PAINPOINT	SOLVED BY BLOCKCHAIN	SOLVED BY DICEGAME
REMOVE MIDDLEMAN'S (FACTOR) INFLUENCE	●	●
GAIN TRUST IN BETWEEN PLAYING PARTIES	●	●
MAKE GAMING ALGORITHMS OPEN AND TRANSPARENT	●	●
GUARANTEE TRANSPARENCY OF WINNING PROCESS	○	●
ALLOW ANONYMITY OF USERS	●	●
GUARANTEE SECURITY AND SERVICE AVAILABILITY	●	●
PROVIDE HIGH TRANSACTION SPEED	●	●
PERFORM INSTANT PAY-OUTS	○	●
REMOVE THE NEED IN BANK ACCOUNTS	○	●
REMOVE LIMITATIONS ON WAGE AND AMOUNT OF BETS	●	●
REMOVE GAMING HISTORY ALTERATIONS	○	●

## CONCLUSION

**INVESTING IN BLOCKCHAIN TECHNOLOGY BASED PROJECT IS A GREAT FINANCIAL OPPORTUNITY;** its integration in to new/existing online gaming systems is cost effective and risk reducing deals. The positive implications are believed to be substantial in gaming ecosystem. Potential applications of blockchain are increasing the credibility and viability of online betting industry.

Ultimately blockchain technology and DICEGAME platform will be part of a bigger technological shift in paradigm helping to change the way people think about iGaming, transforming their attitude towards the one based on trust and transparency principles.

# DICEGAME SOLUTIONS

The optimal solution to the problems mentioned above is the usage of the decentralized platform DICEGAME with the use of the smart contracts based on the Graphene blockchain. The powerful features of the Graphene help to achieve our goals of low transaction fees and high speeds. Firstly, in stress tests the Graphene technology has achieved 10,000-100,000 transactions per second. Secondly, parallelization is used to scale the network, likely up to millions of transactions per second. Thirdly, the asynchronous communications and separate authentication from execution is implemented to achieve speedups, and because it will have no transaction fees, counting operations are not required.

All transactions as the records of a change to the data set are typically based on the rules defined by the blockchain. These rules comprise contracts between parties. We develop smart contacts with its own behavior that meets the conditions of games on the DICEGAME platform in order to trigger different events: determine dice values, choose the winner of a game, transfer the prize, create transactions.

The details about game sessions conducted are securely stored in the blockchain and each user is able to check the results via user-friendly interface in any time. We propose the following ways of solutions to achieve fair play in the transparent iGaming industry:

We resolve the problem of **player's trust in the system** by implementing the open source algorithms of the DICEGAME platform. The logic of dice values and winner determination is delivered by the smart contracts with the help of which we can track the records of input and output data.

1

**We do not impose limits on deposits and withdrawals.** We think that the user should keep control over his own money. Thus, the smart contracts do not set any limits on cash ins and outs.

2

**We eliminate the idea of the frozen funds.** We do not exploit users' money, we just provide the tournament wallet to store the prize fund for a game session. There are no frozen funds, each user has the possibility to check the account of the tournament wallet based on the blockchain anytime.

3

We do not use random number generator. Users play with each other, but not against the platform. DICEGAME is just the initiator and organizer of a game.

4

No special knowledge or background required to increase winning odds. Players up to 50% chances to win whether they possess any specific skills related to the game or not. In the games on the DICEGAME platform only a true luck will determine the winner.

5

High level of security. Decentralization of databases is used in all algorithms of the DICEGAME platform based on the blockchain. Blockchain databases consist of several decentralized nodes. Each node participates in administration: all nodes verify new additions to the blockchain, and are capable of entering new data into the database. For an addition to be made to the blockchain, the majority of nodes must reach consensus. This consensus mechanism guarantees the security of the network, making it difficult to tamper with. The architecture of decentralized ledgers makes it almost impossible to lose funds or private information to cybercriminals. For example, in the peer-to-peer network there are 100 thousand of ledgers, thus to make any updates we need to change the data in more than 50 thousand of ledgers and get corresponding confirmation from all nodes in the net what is almost impossible.

6

We speed up data verification by eliminating the need to collect unnecessary data. Such a move ensures that users access the site faster and anonymously.

7

We solve the problem of transaction speeds with the help of the Graphene blockchain. The technology allows to have low commissions of the high speed transactions. We make online casinos more responsive and with an enhanced online user experience. Customers can now expect better, faster and cheaper service.

8

**LET'S LOOK** at the comparison table of the principles based on which traditional online casinos with fiat currencies, blockchain online casinos and games on the DICEGAME platform are functioning.

PRINCIPLES	TRADITIONAL ONLINE CASINOS	ONLINE CASINOS BASED ON THE BLOCKCHAIN	GAMES ON THE DICEGAME PLATFORM
No limitations on deposits and withdrawals	○	●	●
Fast transactions	○	●	●
Audit by the "big four": Ernst & Young, PricewaterhouseCoopers, KPMG, Deloitte Touche Tohmatsu Limited	○	○	●
Tournaments with 50/50 of winning odds	○	○	●
Face-to-face games	○	○	●
Bounty program	○	●	●
Possibility to use any cryptocurrency	○	●	●
Transparency by the means of smart contracts	○	○	●
Absence of random number generator	○	○	●

As we see, different institutions of iGaming have their own peculiarities which depend on the core principles of the whole system. It's worth noting that all games on the DICEGAME platform involve as many advantages as possible to meet user's needs and wishes.

# THE ADVANTAGES OF THE DICEGAME PLATFORM

## UP TO 50% OF WINNING ODDS:

face-to-face principle, i.e. games are conducted against real player's, so that all participants have up to 50% chances to win. It's a basic premise for all our games. Thus, in the one-to-one game winning probability for each participant is up to 50% while in the sessions with higher number of players odds of winning depend on rules of the certain game or tournament, but in the meantime it meets the principles mentioned above.

**BONUS TOURNAMENTS:** 50% of the company's revenue will be played out in the bonus tournaments on a regular basis, thus players have a realistic chance to win "easy money". Solid investors get life-long benefits participating in all bonus tournaments without fulfilment of any conditions. We are going to announce during token sale the way how to get into these favourable terms.

## NO RESTRICTIONS ON DEPOSITS AND WITHDRAWALS.

Possibility to **PLAY USING ANY CRYPTOCURRENCY (BTC, ETH, LTC, etc) AND THE TOKEN DICE.**

**QUICK AND TRANSPARENT TRANSACTIONS:** prize funds of the bonus tournaments will be stored in the Dice tokens, so that the company will be regularly redeeming the token from the free traffic.

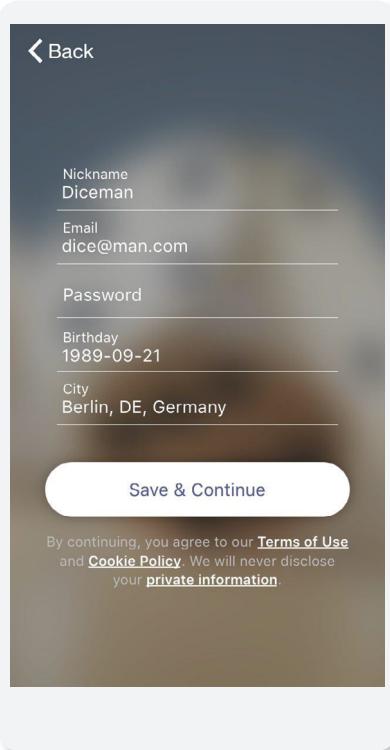
The platform ensures a provably fair gaming environment with real-time interaction between users around the world for online gaming. Thanks to the blockchain technology we connect distant past and faraway future of the iGaming world providing the solution for the following problems: operator's credibility and trust in elements of randomness and methods of winner determination. We grant the opportunity to participate in the games on our platform built to meet user's needs and interests.

# MVP (CLIENT APPLICATION)

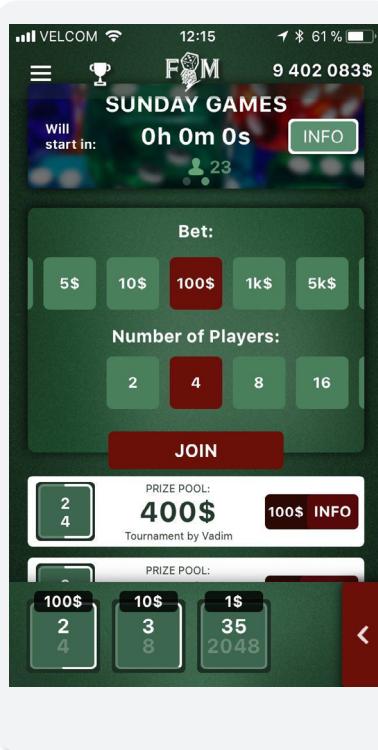
The MVP (the minimum viable product) is finished and available for Android, iOS and Web. Right now you can get acquainted with the mechanism of the game, take a part in the tournament up to 1000 of participants and taste the passion of MVP interactivity.

THE GAME PLAY IS CONDUCTED IN THE FOLLOWING WAY

1



2



3



To enter the game a user should go through the user registration.

To start the game session number of participants and bet should be selected.

When participants and bet are set, then upon tapping Join, there is the informative popup that shows the upcoming tournament details.

4



When all participants necessary for the tournament join the game, then the session starts showing the net of tournaments to help players to keep track of the stage within the ongoing rounds.

5



When tournament net closes, then the players land on the gaming table.

6



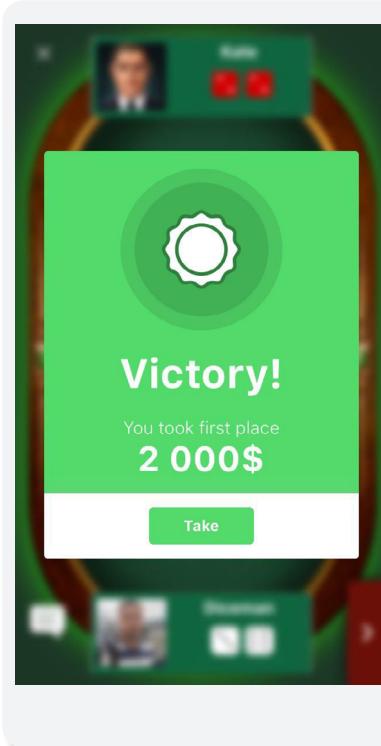
The essence of the game play is to roll the dice and compare the dice values of two players within the current game.

7



The player can easily express his own emotions by using our unique emoji integrated into the application.

8



When the game finishes, the player is notified about the results in the form of the popup.

9



Besides that, in the app menu there is a quick and easy way to review and analyze tournament history.



"Best Players" screen lists the players with high rating of win.

Way to Million. We have depicted the way to million for a player to have a clear vision of the possible winning perspective. We have the defined picture what stages should be passed through to get the corresponding prize. All tournaments are conducted step by step, like a growing stairs. Besides that, the diagram shows what win can be achieved in what tournament, thus we have the visible path to the success of million.

THE DEMO VERSION IS AVAILABLE FOR DOWNLOADING IN





# DICEGAME PLATFORM

## TECHNICAL PART

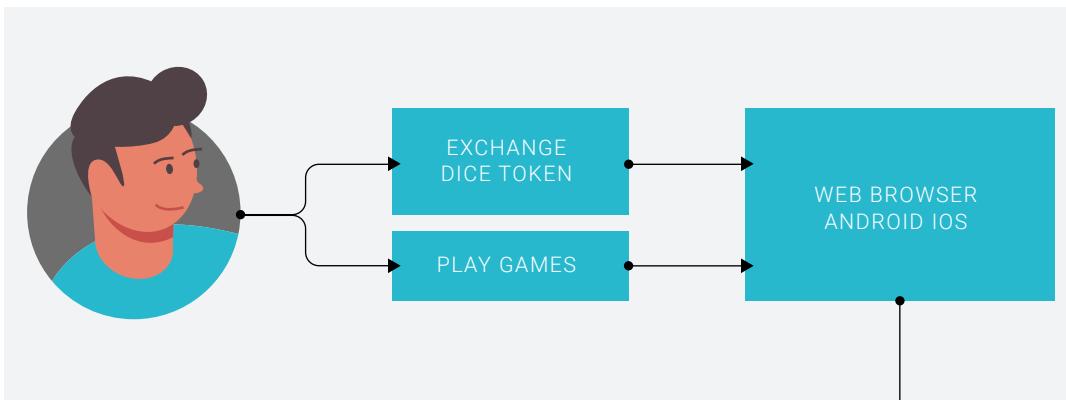
In regards to the technical implementation of all interactions inside the DICEGAME platform, we can specify **TWO MOST IMPORTANT USE CASES:**

1. A user wants buy or sell Dice tokens.
2. A user wants to play some games provided by the DICEGAME platform.

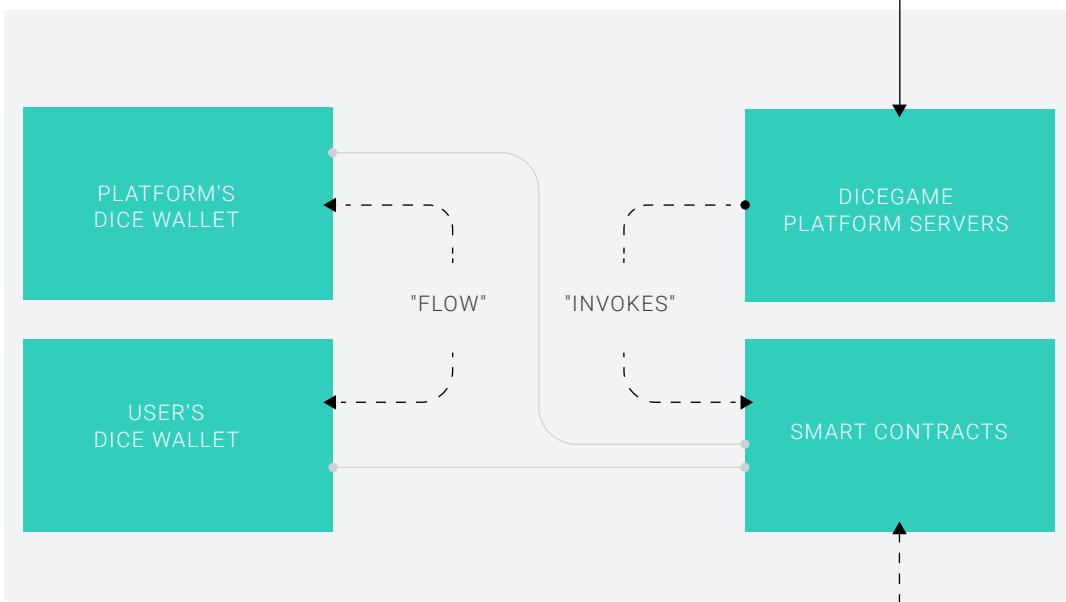
Both of these scenarios are supported by the DICEGAME platform software – native mobile applications or through our website. Either way, client-side software communicates with platform servers located in our blockchain. Relying on smart contracts extensively, servers manage game mechanics and Dice token exchange depending on user's needs and taken action. Please see more details in the table below.

## USE CASE MODEL

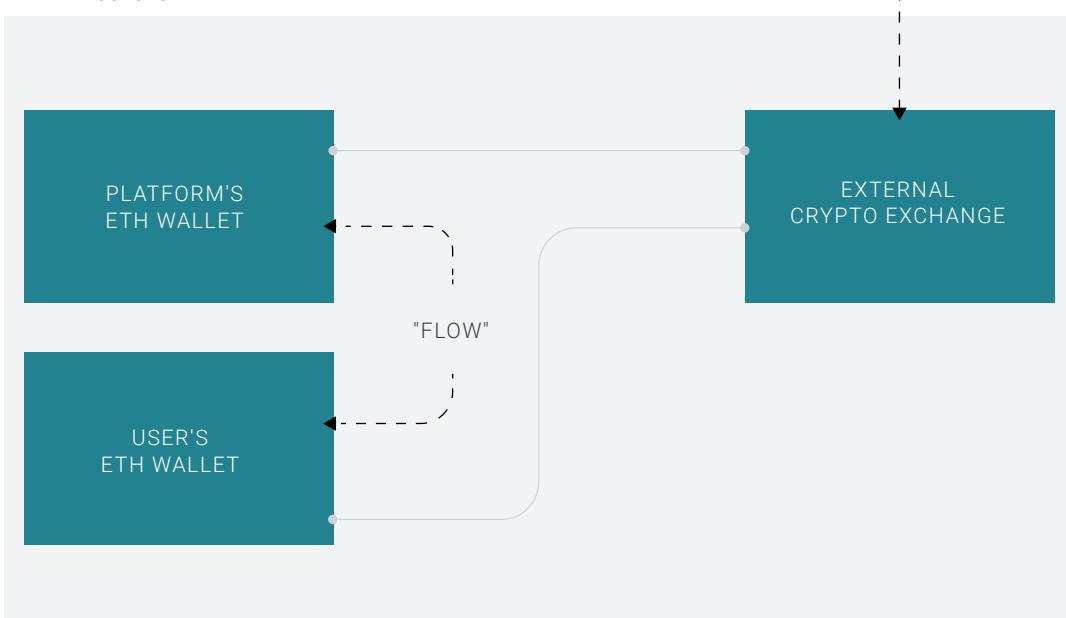
Outer World



DICEGAME Blockchain

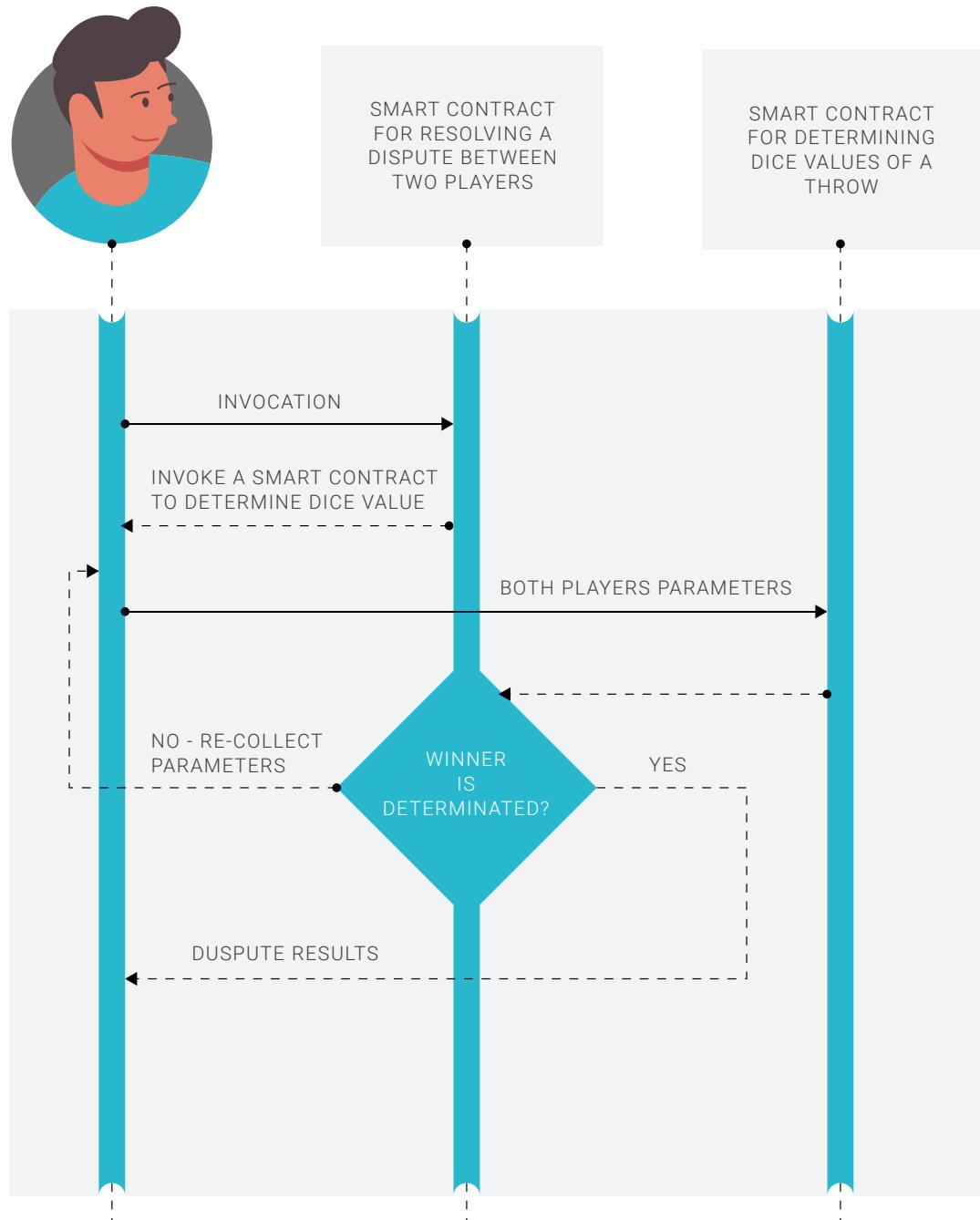


ETH Blockchain



## UNIQUE WINNER DETERMINATION ALGORITHM

The algorithm to determine the winner in the two players' dispute is implemented as the smart contract. The logic of the process is in dice rolling. The winner is the player with greater sum of dice values. Dispute ends with two victories. To have more interactive and interesting game, doubles can be thrown again.



When the winner is determined, the control is transferred to the smart contract of a tournament. Smart contract should incorporate the results of all disputes conducted in a tournament and make all required processings.

## BLOCKCHAIN SOLUTIONS

The technical implementation provides compliance with the principles and values that are common for all games based on the DICEGAME platform. It offers such advantages as transparency and easy check of results. All key algorithms related to the game mechanisms and winner determination are implemented by the means of the blockchain technology. Blockchain also allows to have reliable and secure transactions for bet accepting, winner determination and awarding, fees charging, etc.

The DICEGAME platform will be based on the Graphene blockchain. The first and major question is how could we benefit by using this technology? Let's look at the major advantages of the Graphene technology that will help us to develop really powerful DICEGAME platform for the world of online games.

GRAPHENE FEATURES	DESCRIPTION	BENEFITS FOR THE DICEGAME PLATFORM
SECURITY	<p>There is an in-build account management system. It is similar to a bitcoin address but it comes with human-readable names. Accounts have different private keys for different operations. For example, a user might have a private key for sending messages and another one for signing into applications.</p>	<p>The access management provided by different keys provides higher security for the users. It offers an integrated key recovery system which offers users the ability to restore their accounts in the case of theft.</p>
PARALLEL PROCESSING & SCALABILITY	<p>The ability to do things in parallel, faster transaction speeds and more scalability. Graphene technology has also achieved 10,000-100,000 transactions per second in stress tests. The network can scale to one million messages or transactions per second out of the gate on a single machine, with theoretically infinite scaling possible in parallel between multiple machines.</p>	<p>Higher transaction speeds and much more scalability. It can process millions of transactions per second thanks to the horizontal scaling.</p>
NETWORK FEES	<p>The network has zero transaction fees and no network development cost.</p>	<p>No need to pay for every transaction, something that will help increase adoption.</p>

Having reviewed the main principles of the blockchain selected for our platform development, we can focus on the actual problems in algorithms currently used in gambling and review the technical implementation of entirely new approach of gaming processes.

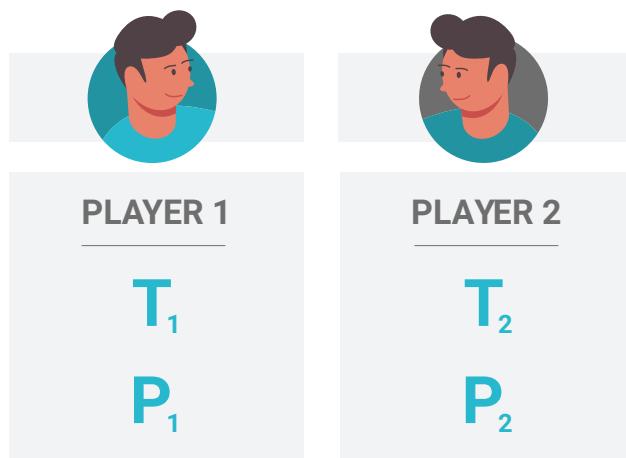
Core principles of traditional casinos are based on the random number generator. Winning probability depends on results of the random number generator. In addition to it, this principle is not decentralized and objective. This is the way how "magic" occurs in gambling.

We think that only participants should be able to control their luck and propose the idea of the algorithm to exclude the "random number generator" principle at all.

There are two main factors that determine the selection of the algorithm: no interest to any fraud, simplicity in understanding of process and verification of results. The first principle is to use both players' parameters in the process of dice value determination. Thus, to predict the result both players have to cooperate, but there is no sense in it, as they play against each other (the zero-sum game).

The algorithm based on the blockchain provides transparency of results and mathematical operations as the base of this algorithm provides simplicity. Our intention is to assure in several minutes that results are fair using just a list of paper and pencil.

TO DETERMINE THE DICE VALUE, WE NEED TO DETERMINE **TWO PARAMETERS** FROM THE EACH PLAYER:



$T_1, T_2$  - amount of milliseconds when calling the smart contract/time of data collection on the client side.  
 $P_1, P_2$  - any other parameter, we take the value of the accelerometer.

Based on the data gathered from four parameters, our task is to determine the value for four dice. Then, we list all possible unique triple combinations of the parameters.



There are only four variants of the unique combinations. It's exact the same number that is needed to get dice values.

In fact, each value of a dice is based on the corresponding triple combination of parameters. Also, each parameter of each player is counted in three dice values out of four. Meanwhile, parameters of each user, as it was intended, are considered in all four dice. Using this way of calculations we provide the expected security level.

The next step is to determine what exact impact do parameters have on the dice. Due to the fact that the algorithm should be simple to check we provide the following formula: we take the remainder based on the sum of three parameters divided by 6. The remainder is in the range of 0 and 5, the last operation to do is to add just 1. Thus, we can get the necessary range from 0 to 6 which is used to be in the hexagon cubes.

## LET'S LOOK AT ALL THESE CALCULATIONS USING THE REAL EXAMPLE

Having  $T_1 = 111$ ,  $P_1 = 222$ ,  $T_2 = 333$ ,  $P_2 = 444$ ,

we are able to get dice values for two players



THUS, IN RESULT WE GOT DICE VALUES AS 1, 6, 5, 4.

It's worth noticing that values of the first dice pair have great influence on the parameters of the first player, and values of the second pair – on the second player. Thereby, according to our algorithm, the first pair of dice will belong to the first player, and the second one – to the second player.

In such a way we describe the idea how the algorithm of dice value determination works in the game Factory of Millionaires. For other games we are going to use the same principles, but adjust the algorithm depending on the rules of a corresponding game.

## DICE WALLET

Like paper money and gold before it, there is the new possibility of buying, selling and exchanging value appeared for the digital currencies as well. For the first time in history, people can exchange value without intermediaries which translates to greater control of funds and lower fees. Blockchain wallet is a wallet where one particular or different kinds of cryptocurrencies are stored. The wallet facilitates sending and receiving cryptocurrencies and gives ownership of the balance to the user.

With the Dice Wallet that is going to be integrated into the DICEGAME platform we're providing users with a new diverse way to interact with the digital economy. This integration makes it easy for users to receive and send digital currencies, monitor exchange progress inside the DICEGAME platform. The Dice Wallet will allow users to retain full access to their balance in any cryptocurrency including Dice tokens. The multi-cryptocurrency wallet will offer not only standard operations of receiving and sending, but the possibility to use hierarchical deterministic wallets. These wallets allow users to generate an unlimited number of addresses and private keys from the same seed. This means that wallets can be easily backed up and transported to other wallet software with nothing more than a twelve-word mnemonic phrase.

Thus, the user can store and use digital assets in a secure and confident way. The development of the wallet functions will go through the corresponding stages described in the table below.

FUNCTIONS & STAGES	WALLET INTEGRATION WITH THE DICEGAME PLATFORM	BETA RELEASE OF THE DICEGAME PLATFORM	INTEGRATION OF THE OTHER VENDORS' GAMES WITH THE DICEGAME PLATFORM
STORING & USING IN GAMES OF THE DICEGAME	DICE TOKENS	DICE TOKENS, BTC, ETH	DICE TOKENS, BTC, ETH AND OTHER TOP 15 OF CRYPTOCURRENCIES
SENDING AND RECEIVING	OPERATIONS ONLY INSIDE THE DICEGAME PLATFORM	OPERATIONS USING ANY WALLET (INSIDE AND OUTSIDE OF THE DICEGAME PLATFORM)	
CRYPTOCURRENCY EXCHANGING	NOT AVAILABLE	BTC AND ETH TO DICE TOKENS, DICE TOKENS TO BTC AND ETH	DICE TOKENS TO ANY OTHER CRYPTOCURRENCIES, ANY OTHER CRYPTOCURRENCIES TO DICE TOKENS
FIAT CASH OUT	NOT AVAILABLE	NOT AVAILABLE	BUY, SELL, EXCHANGE ANY CRYPTOCURRENCIES AND DICE TOKENS TO FIAT CURRENCIES

Thus, the Dice Wallet is our digital wallet that allows users to have a quick and easy access to their funds and track the balance inside the DICEGAME platform. By the means of intuitive and easily navigated interface user can make operations of buying, selling, exchanging directly through the Dice wallet.

## PRESENCE OF TRANSPARENCY

As our primary mission is to develop fair and clear iGaming platform, so that we have decided to make all important algorithms open and decentralized. The implementation is done by the means of the smart contracts. So, by tracking history of all transactions we provide transparency and easy way of results verification. The access to the transactions history is available in the client application.

From the engineering perspective of the FM game based on the DICEGAME platform we can specify three main types of algorithms which are required to be implemented in the decentralized and open way with the help of smart contracts:

DETERMINATION OF DICE VALUE DURING ROLL

DETERMINATION OF THE WINNER IN TWO PLAYERS' DISPUTE

DETERMINATION OF THE WINNER IN A TOURNAMENT

Thus, a regular tournament is divided into the numerous separate disputes between pairs of players, and each dispute is splitted into several dice rolls. But, we can easily keep track and control of each stage of these actions. In the next sections there is the detailed description of all algorithms and stages.

## TOURNAMENTS

The smart contract of a tournament serves to organize, initiate and coordinate all individual disputes between pairs of players, determine and award winners, also collect charges and make participants aware of game results.

In the first version of the game we create rules of the tournament based on the Olympic system. In general, we are able to implement any rules, if they suppose division of players into pairs. In future, we are planning to support even more number of participants in the dispute at the same time.

The tournament is created for N players, however the smart contract is able to automatically trigger a tournament only after registration of all participants. The logic of the smart contract is able to divide all participants by pairs by itself and to build a game network. Then, devices of players get a notification about the tournament start.

The prize fund of the tournament is the sum of all bets of participation. The payoff allocation by paid places and fees charging are performed in accordance with the rules of the given tournament and implemented directly in the smart contract. The fee is calculated based on the sum of the prize, and the dropped-out players loose only the bet.

Let's look closer at the tournament using the example. The number of participants in the tournament is 32. To create the tournament we use the smart contract. The code of the smart contract randomly generates the pairs and divides the tournament into 5 stages: 16/8/4/2/1. All games of the same stage are conducted at the same time. When the games at all stages are completed, then the smart contract notifies the participants about tournament closure, awards the winners and charges the fee. Depending on the type of the tournament the probability of winning of each player varies between 12.5% and 50%.

**THE CONCEPT OF THE PROJECT IS TO CONDUCT REGULAR BONUS TOURNAMENTS (BT) WITH THE PRIZE FUND FORMED FROM THE HALF OF COMPANY'S INCOME.** Each new tournament or one-to-one game continuously contributes to the prize fund of the BT. After the tournament the smart contract automatically transfers the prize with the withdrawal of platform's fee. The half of this fee goes to the common prize fund of the BT which is distributed between all bonus tournaments with the corresponding amount of the prize mentioned in the table below. Thus, prize funds will have continuous growth.

## BONUS TOURNAMENTS

There are limitations on the number of participants for all bonus tournaments depending on its type and frequency. All tournaments launch according to the defined schedule.

## TERMS OF PARTICIPATION IN THE BONUS TOURNAMENTS

- A participant can exchange frequent player points for the BT ticket (frequent player points are gained when using any supported cryptocurrency in a game, 1 point = 1\$ indexed according to the current exchange rate of the cryptocurrency used).
- A participant can exchange nominal chips for the BT ticket (on daily basis when joining the platform it gives nominal chips, so that the player has the possibility to use them in a game and earn a fair number of additional chips to make the exchange for the BT ticket).
- There is a chance to gain the ticket into the freeroll tournament (on regular basis the platform generates tournaments with the BT tickets as the prize find).
- The BT ticket can be provided as a bonus after registration in the platform, or as a present for any holiday.
- The BT ticket can be provided as the award from the platform as a result of participation in any quests.

BONUS TOURNAMENTS	QUANTITY PER YEAR	DISTRIBUTION OF PRIZE FUND, %
DAILY	365	10
WEEKLY	52	25
MONTHLY	12	20
QUARTERLY	4	15
ANNUAL	1	30
TOTAL	434	

The first bonus tournament on the DICEGAME platform is the tournament with the prize fund of 5% from the all Dice tokens issued. There are no any investments required to participate in this BT (more detailed information about terms of the first BT can be found in our social media channels).

# TOKEN USE

Token Dice is our internal utility token that allows users to have access to our product of the DICEGAME platform. Through the Dice token we are aimed to develop the platform and integrate it with our own games and games of other vendors. The Dice tokens can be bought, sold, exchanged to any other cryptocurrencies, transferred to other parties using the Dice Wallet integrated into the DICEGAME platform.

## LET'S POINT OUT THE KEY BENEFITS OF THE DICE TOKENS

- Low fee using the Dice token in a game (1%);
- High speed of transactions;
- 100% of transparent transactions;
- Possibility to convert the Dice into any cryptocurrency using the Dice Wallet integrated into our platform;

- Contribution to the bonus tournaments and platform development. Smart contracts of the game automatically transfer the half of the fee from the prize of each tournament charged by the DICEGAME platform to the fund of the bonus tournaments conducted on daily basis. Thus, there is constant circulation of the Dice tokens inside the platform that facilitates its functioning and provides the growth of the token value;
- Preserving the balance of Dice tokens. It goes without saying that to use the Dice tokens in the games of the DICEGAME platform or just to become a token owner, makes lots of gain and profit if to compare to any other gaming chips, fiat or cryptocurrencies. Let's take a closer look at different means of play and payment to compare its features.

FEATURES	GAMING CHIP	FLAT CURRENCY	CRYPTO-CURRENCIES	DICE TOKEN
SIMPLIFIED KYC	○	○	●	●
SECURE	○	○	●	●
LOW FEE WHEN USING IN GAMES ON THE DICEGAME PLATFORM	○	○	○	●
VALUABLE	○	○	●	●
FAST WITHDRAWAL	○	○	●	●

Apart from the key factors described above, the main thing is that by owning a token one has the right and the incentive to participate in the life of the DICEGAME platform which is going to become the alternative for the current iGaming solutions.

# FORECASTED GROWTH OF DICE VALUE

Token demand is based on utility of the token, or in plain terms: how the token is used. The primary question that should be asked is the following one: are the services offered so enticing that they will generate a high demand? The answer is simple: the more people use the services and pay for it in a token, the higher a token value will be. Generally speaking, services offered that cater to the crypto crowd or depend on demand of other crypto ecosystems generate more value. In our case, the DICEGAME platform is the service functioning of which will be covered by Dice tokens.

## HOW DO WE FORECAST THE GROWTH OF THE DICE VALUE?

**DEMAND FOR TOKENS TO USE IN REGULAR TOURNAMENTS INSIDE THE PLATFORM.** The Dice tokens are issued to be utilized in the operation of the platform, i.e. it's our internal coin which can be used in the game play inside the DICEGAME platform.

**DEMAND FOR TOKENS TO CREATE THE PRIZE FUND OF THE BONUS TOURNAMENTS.** The lifecycle and all activities related to the bonus tournaments are supported by the Dice tokens. After each regular tournament conducted inside the platform the smart contract automatically transfers the prize to the user's wallet withdrawing platform's fee in the cryptocurrency used in the game. The half of this fee should form the common prize fund of the BT. Only Dice tokens can create the bonus fund. To perform this function, cryptocurrency preserved for the BT prize will be indexed to the fiat currency according to the stock exchange rate and Dice tokens will be bought out from the total token circulation. As bonus tournaments will be conducted on the daily basis, there will be constant circulation of the Dice tokens to regularly form the prize fund.

**DEMAND FOR TOKENS TO HAVE LOW FEE.** When using Dice tokens in games inside the DICEGAME platform there is only 1% of fee charged which is much more less than using any other cryptocurrencies.

**DEMAND FOR TOKENS AS RESULT OF MASS PLAYERS' ENGAGEMENT ALL OVER THE WORLD.** The significant part of the company's income will cover constant marketing campaigns that results in constant addition of players all over the world. As the result of these activities tokens circulation inside the platform will be rised.

According to the assessment of the potential market price of the project using the income approach (the method of discounted cash flow) made by the project initiators it's forecasted that potential price of the Dice token could be forecasted to rise up to more than 3200% in the year 2023. To get more details please see the table of the section "Value of the project. Projections of the Dice value".

# INITIAL COIN OFFERING

## REVIEW OF THE ICO

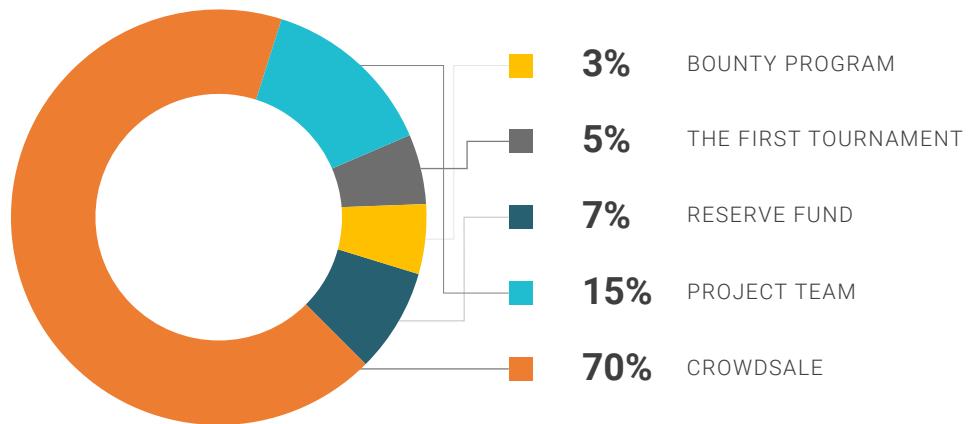
Currently, we are the new discovery in the world of iGaming. Our primary goal is to have the clients using the DICEGAME platform and playing our games in every corner of the world. With minimum investment we are able to cover rather small local market, but our aim is to break into the world of whales.

In the ICO there will be 210 000 000 (Hard Cap) of the Dice tokens issued. The ICO participants will be able to buy 70% of the tokens.

TOKEN TYPE	ERC020		
RATE OF EXCHANGE FOR ETH/USD	500		
TOKEN NAME	DICE	ETH	USD
TOKEN VALUE	1	0,0001	0,05
HARD CAP	210 000 000	21 000	10 500 000
SOFT CAP	42 000 000	4 200	2 100 000

THE ISSUED TOKENS WILL BE DISTRIBUTED IN THE FOLLOWING WAY

## TOKENS DISTRIBUTIONS



Moreover, the tokens devoted to the project team will be frozen for 365 days, and the tokens put into the reserve fund – for 180 days. In early stages the ICO participants will be provided with discounts. Time limitations and agreed sum of tokens will define the completion of each following stage. We are planning to conduct HOT Private sale with the discount of 40%.

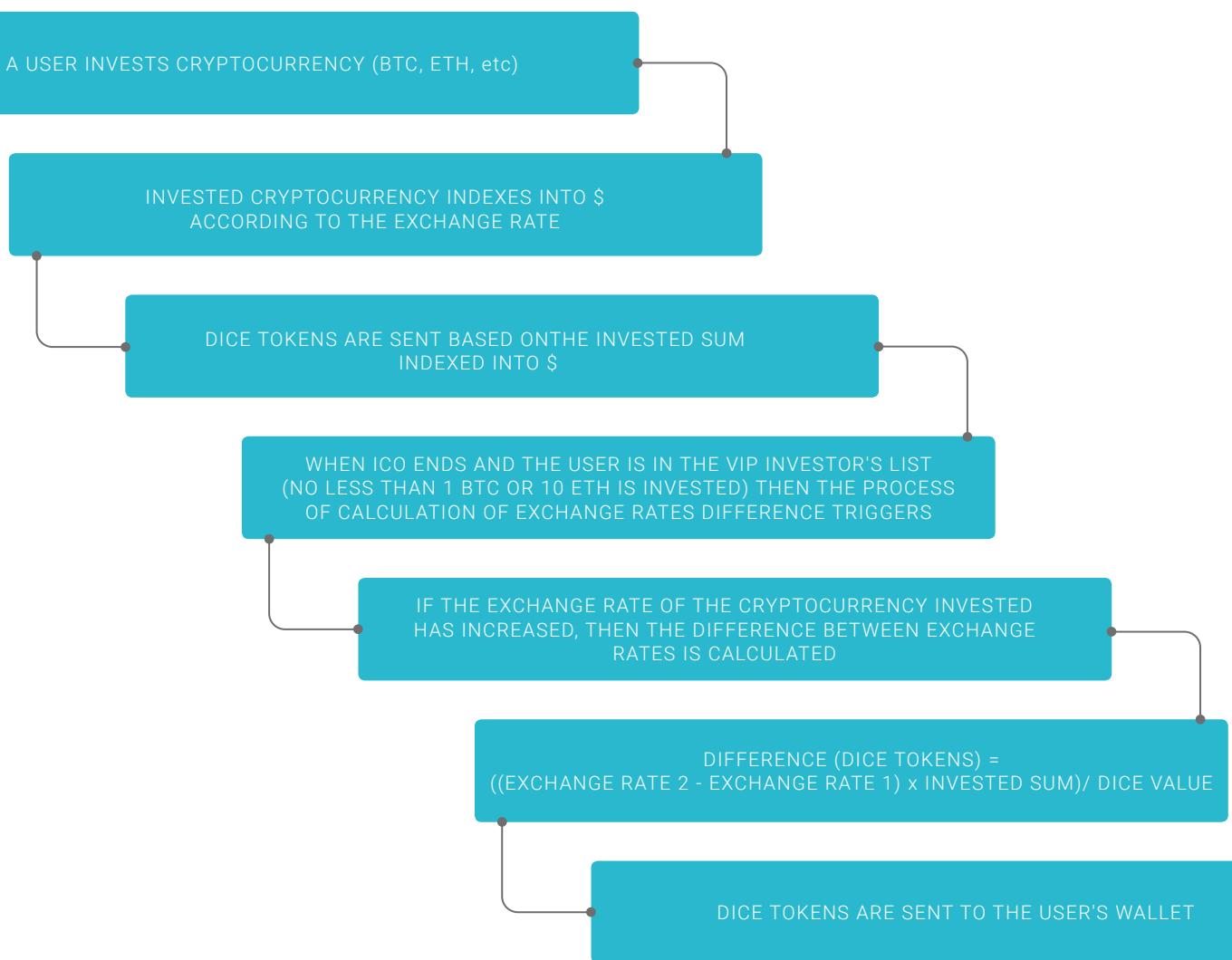
DATE OF SALE START	DATE OF SALE END	STAGE	DISCOUNT, %	HARD CAP	TIME
27.04.2018	15.05.2018	PRIVAT SALE	40	20 000 000	12.00 AM UTC (+0)
16.05.2018	30.05.2018	PRE-SALE STAGE I	30	25 000 000	12.00 AM UTC (+0)
31.05.2018	14.06.2018	PRE-SALE STAGE II	20	20 000 000	12.00 AM UTC (+0)
15.06.2018	29.06.2018	PRE-SALE STAGE III	15	17 000 000	12.00 AM UTC (+0)
30.06.2018	15.07.2018	PRE-SALE STAGE IV	10	15 000 000	12.00 AM UTC (+0)
16.07.2018	16.08.2018	MAIN SALE	0	50 000 000	12.00 AM UTC (+0)
TOTAL				147 000 000	12.00 AM UTC (+0)

## MOREOVER,

AFTER THE FIRST HOT PRIVATE SALE STAGE A PARTICIPANT WILL HAVE THE ADDITIONAL BENEFITS

- Buying more than 120 000 tokens there is the additional bonus in the amount of 5%.
- When using the Token desk platform for the tokens purchase, we offer extra bonus in the amount of 6%.
- When investing no less than 1 BTC or 10 ETH, the user will be included into the VIP investor's list. For such investors we have prepared a special token sale model with the possibility to get the Dice tokens as difference between exchange rates, in case the rate of the cryptocurrency used increases when the ICO ends.

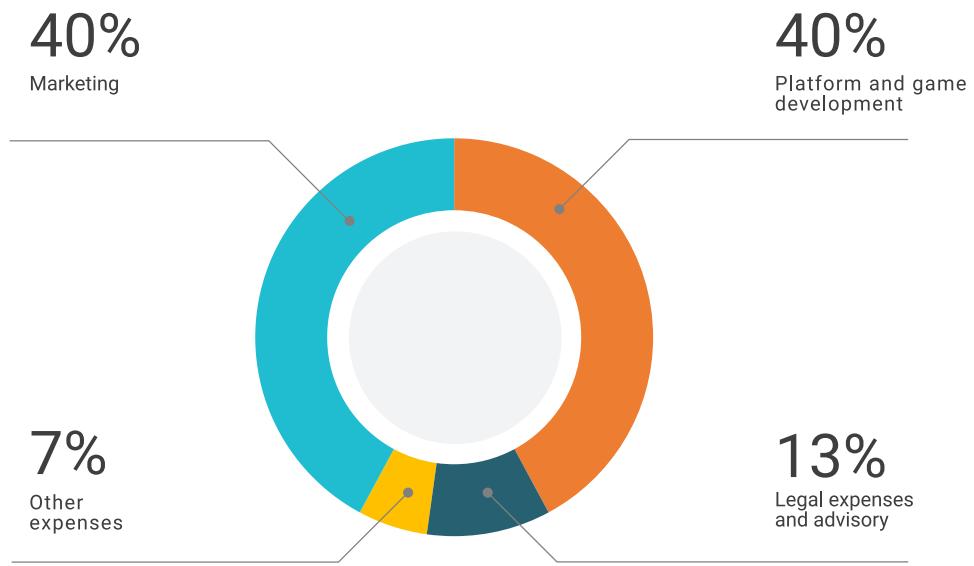
We have developed the Token Sale model to return the difference if the exchange rate of the invested sum increases when ICO ends. As we have a fixed number of coins at a predetermined fixed price, then it's important to clearly depict the way we are going to transact invested sums. The advantage of this is that it gives a fixed valuation for the token sale algorithms which makes the process very transparent.



All operations and interactions between investors and platform are conducted by the smart contracts which have the defined logic and conditions that will never be changed.

To sum up, one the major advantages of the Dice tokens owning is that we tackle the problem with not stable exchange rate and allow our investors to keep the balance of the Dice tokens according to the initial sum they have invested.

THE COLLECTED FUNDS WILL BE DISTRIBUTED IN THE FOLLOWING WAY



**40%**

will cover marketing expenses: campaigns, advertising, promotion.

**13%**

will cover legal expenses and advisory: lawyer's services, external consultations, cooperation with advisory board, listing at stock exchanges, licensing.

**40%**

will cover platform and game development, integration of games with the platform.

**7%**

will cover team salary, new hiring, administrative expenses, research activities.

## RESERVE FUND

Following the results of the ICO we will form the reserved fund in the flat amount: 7% out of the total number of the tokens issued.

THE RESERVE FUND WILL BE FORMED AND PUBLISHED IN THE MULTICRYPTOCURRENCY DICE WALLET WITH THE FOLLOWING AIM:

- Providing Dice Wallet overturn liquidity;
- Providing liquidity and support of the freely convertible tokens currency rate;
- Compensating possible ups and downs of the currency rate in order to avoid aggressive speculations based on the growth or fall of the tokens value;
- Conducting motivating campaigns to attract and keep the active participation of players in the platform.

# FINANCIAL PROJECTIONS

THE MAIN FINANCIAL PROJECTIONS FOR THE PROJECT:

- CPI – \$4;
- Organic Users (players who entered the game on their own initiative) – 9-17%;
- Churn (natural withdrawal of the users engaged in the game) – 30-13%;
- Paying share (paying users) – 15-20%;
- 50% of the platform income will be directed to the prize fund of the bonus tournaments.

CALCULATIONS BASED ON THE SOFT CAP

INDEX	2019	2020	2021	2022	2023
CPI	4	4	5	5	7
EXPENSES FOR PAID USERS	168 000	201 889.8	489 351.1125	1 140 464.869	2 880 086.849
AD EXPENSES	672 000	757 086.75	1 835 066.672	4 276 743.259	10 800 325.68
AMOUNT OF NEW PAID USERS	210 000	239 744.1375	464 883.5569	1 083 441.626	1 954 344.648
% OF ORGANIC USERS	9.00 %	11.00 %	13.00 %	15.00 %	17.00 %
ORGANIC USERS	18 900	26 371.85513	60 434.86239	162 516.2438	332 238.5901
ALL USERS (PAID + ORGANIC)	228 900	266 115.9926	525 318.4192	1 245 957.869	2 286 583.238
% OF CHURN USERS	30.0 %	25.0 %	20.0 %	15.0 %	13.0 %
CHURN USERS	68 670	66 528.99816	105 063.6838	186 893.6804	297 255.8209
TOTAL USERS	160 230	359 816.9945	780 071.7299	1 839 135.919	3 828 463.336
PAYING SHARE %	15.0%	16.0 %	17.0 %	18.0 %	20.0 %
PAYING USERS (CUMULATIVELY)	24 034.5	57 570.71912	132 612.1941	331 044.4654	765 692.6671
AVG SPEND PER PLAYER (ANNUALLY)	84	85	86	87	88
TOTAL REVENUE (CUMULATIVELY)	2 018 898	4 893 511.125	11 404 648.69	28 800 868.49	67 380 954.71
PRIZE POOL BONUS TOURNAMENTS (50% OF TOTAL REVENUE)	1 009 449	2 446 755.562	5 702 324.35	14 400 434.24	33 690 477.35

Marketing budget set during the ICO is measured based on the Soft Cap forecast of the tokens collection. The budget estimated in no less than \$840 000 of the first year of the project development and in average for 5 years \$4 mln is aimed at the initial user involvement into the project. It will allow to keep the moderate growth of users during the whole projection period. Thus, till the end of the year 2023 it's planned to get more than 500 000 of active paying users into the platform. So that, it will be possible to collect no less than \$102 mln of the income for the whole period of the projection.

### CALCULATIONS BASED ON THE HARD CAP

INDEX	2019	2020	2021	2022	2023
CPI	4	4	5	5	7
EXPENSES FOR PAID USERS	840 000	1 009 449	2 089 599.888	4 179 520.739	8 955 337.592
AD EXPENSES	3 360 000	2 523 622.5	5 223 999.72	10 448 801.85	22 388 343.98
AMOUNT OF NEW PAID USERS	1 050 000	883 267.875	1 462 719.922	2 925 664.517	4 477 668.796
% OF ORGANIC USERS	9.00 %	11.00 %	13.00 %	15.00 %	17.00 %
ORGANIC USERS	94 500	97 159.46625	190 153.5898	438 849.6776	761 203.6953
ALL USERS (PAID + ORGANIC)	1 144 500	980 427.3413	1 652 873.511	3 364 514.195	5 238 872.491
% OF CHURN USERS	30.0 %	25.0 %	20.0 %	15.0 %	13.0 %
CHURN USERS	343 350	245 106.8353	330 574.7023	504 677.1292	681 053.4239
TOTAL USERS	801 150	1 536 470.506	2 858 769.315	5 718 606.381	10 276 425.45
PAYING SHARE %	15.0%	16.0 %	17.0 %	18.0 %	20.0 %
PAYING USERS (CUMULATIVELY)	120 172.5	245 835.281	4 859 990.784	1 029 349.149	2 055 285.09
AVG SPEND PER PLAYER (ANNUALLY)	84	85	86	87	88
TOTAL REVENUE (CUMULATIVELY)	10 094 490	20 895 998.88	41 795 207.39	89 553 375.92	180 865 087.9
PRIZE POOL BONUS TOURNAMENTS (50% OF TOTAL REVENUE)	5 047 245	10 447 999.44	20 897 603.69	44 776 687.96	90 432 543.94

All calculations are based on the averaged data of the field taking into the account scaling factors of the given project. For the first year of the project launch decreasing coefficients are applied taking into the consideration the kick off of project development and scaling. Thus, according to the data of the Business Insider (UK), the annual expenses of one player in online gambling using the mobile platform are \$86.5. This is the one of key parameters used for income calculations in the project.

In addition, the amount of fee planned to be charged in the DICEGAME platform will depend on betting rates and cryptocurrency used for the game. This approach is to motivate users to use the Dice token and increase the rate of bet used. It will facilitate users' engagement and interest in the Dice token usage what will result in the liquidity increase.

**PLEASE LOOK AT THE TABLE BELOW** that represents the functioning and scaling mechanisms of the fee planned to be of use in the DICEGAME platform.

COMMISION IN % DEPENDING ON RATE AND CRYPTOCURRENCY

INDEX	MICRO	LITE	MEDIUM	HIGH	MEGA
RATE, \$	0,1 - 1	1 -10	10 -100	100 - 1000	1000 - 100000
DICE, %	1	1	1	1	1
OTHER COINS, %	3	2	1	1	1

## VALUE OF THE PROJECT. PROJECTIONS OF THE DICE VALUE

As a part of the financial projections of the game platform being created, the project team has also made the assessment of the forecasted cost of the platform and the Dice token in future.

The approach is selected according to the given data, target of evaluation, type of the cost, peculiarities of the appraisal project. For this project the income approach is defined, i.e. the set of methods of platform cost evaluation based on the platform income expected.

The income approach is the method of cost readings based on the principle that the value of the platform and token depends on the current value of the upcoming net revenue from the platform.

According to the income approach the platform evaluation procedure can be divided into the following stages:

- Projections of the future income from the platform and operating cost needed for its functioning;
- Capitalization of the future income and expenses from the platform operation into their current cost.

There are two basic approaches used for the capitalization of the future revenue: the method of the direct capitalization and the method of discounted cash flows. The main idea of the discounted cash flows as well as the direct capitalization is that upcoming revenue and expense flows are transferred from the object to their current value. But, by this method revenue and expenses (taking into account all variations) are projected for each year of the period forecasted. The discounted cash flow is universal and can be applied to any cash flows.

In our case it's objective to use the method of discontinued cash flows as all calculations are entirely related to the token turnover in the DICEGAME platform not including any stock or speculative operations. The calculations include cash flows (token flows) generated by the platform. Alongside, the token value could be forecasted to grow depending on its overturn outside of the platform.

According to it, the method of the discontinued cash flows is selected for the token value calculation. The estimation of the market value using the DCF method is presented in the table below (all calculations are based on the Soft Cap).

INDEX	2019	2020	2021	2022	2023
WACC (DISCOUNTED RATE)	15.1 %	x	x	x	x
2017 TECHNOLOGY CAP RATE	9.0 %	x	x	x	x
PERIOD	0	1	2	3	4
DISCOUNTED COEFFICIENT	1.000	0.869	0.755	0.656	0.570
REVENUE, \$	2 018 898.000	2 874 613.12	8 530 035,57	20 270 832.9	47 110 121.78
EBITDA, \$	908 504.100	1 293 575.91	3 838 516,00	9 121 874.82	21 199 554.80
FCF (FREE CASH FLOW), \$	863 078.895	1 228 897.11	3 646 590.20	8 665 781.08	20 139 577.06
PRESENT VALUE, \$	863 078.895	1 067 677.77	2 752 556.95	5 683 053.47	11 474 903.75
PROJECTED VALUE, \$	21 841 270.84	x	x	x	72 644 919.61
POSTPROJECTED VALUE, \$	72 644 919.61	x	x	x	x
COMPANY VALUE, \$	94 486 190.45	x	x	x	x
NUMBER OF ACTIVE TOKENS (CROWD SALE)	42 000 000.000	x	x	x	x
VALUE OF THE DICE TOKEN, \$	2.250	x	x	x	x

Based on the calculations, the potential tokens turnover is forecasted as well. It's worth noting that while valuating the Dice token the turnover calculation include only platform circulation by itself not taking into account operations outside the platform.

INDEX	2019	2020	2021	2022	2023
WEIGHTED AVERAGE OF PLATFORM FEE	1.5 %	1.5 %	1.5%	1.5%	1.5%
ANNUAL EXPENSES OF ONE USER PER YEAR, \$	84	85	86	87	88
PLATFORM INCOME, \$	2 018 898	28 74 613	8 530 036	20 270 833	47 110 122
ANNUAL TOKENS OVERTURN, \$	134 593 200	191 640 875	568 669 038	1 351 388 862	3 140 674 786
PLATFORM OVERTURN IN 24 HOURS, \$	368 748	525 043	1 557 997	3 702 435	8 604 588
RATE OF OVERTURN GROWTH	-	142%	297%	238%	232%

# TEAM

Vadim Shlapokov  
**CEO**



Founder & leader of the public corporation "Prime Stream" (development of business architecture, financial regulations).

Leader of the public corporation "24 ICE" (leadership and management direction, partners research & cooperation).

Author of the idea & founder of the park of attractions "Dinopark" (project development and promotion, organization & control of financial and legal aspects).

Author of the idea & founder of the public corporation "Programming production" (team building, game development, legal licensing).

Yahor Punko  
**CMO**



Cofounder of the "L2on.net" (online data base development).

Leader of the project in the "mmorpg" (mobile game development).

Leader of the marketing project in the "ABW.BY" (eCommerce projects development).

Kate Baeva  
**PR OFFICER**



Leader at Achieve3000 project, platform for online learning & training (application development and marketing of online education service).

Leader at Sephora project, leading chain in global prestige retail (mobile development of the eCommerce app).

Project representative & speaker in the set of business conferences in New York (Achieve3000).

Project representative & speaker in the set of business conferences in San Francisco (Sephora).

Vasily Rusakov  
**CTO**



Software Engineer at DataTrails project (development of data import architecture, implementation of nodes loading & linking solution).

Software Engineer at Bill + Payment project (development of payment system for online education service).

Software Engineer at State Watcher project (architecture development of the complex system for monitoring and analyzing the state and parameters of network nodes).

Software Engineer at eDelivery project (implementation of the data artifacts distribution, integration with Amazon environment).

Author of the idea & founder of the public corporation "Programming production" (development of technical architecture and solutions, game development).

Vitaly Panasik  
**DESIGN OFFICER**



Content manager and visual graphics designer in the public cooperation "TechnoTorg" (eCommerce project).

Leader of the online sales service project in ABW.BY (marketing design for eCommerce projects).

Project manager & UI designer in Gruzon.by (online transportation and logistics service).

Roman Voyteshik  
**COMMUNITY  
MANAGER**



Project manager at Mavitech (presale activities, administration of the internal site, blogging, posts packaging & design, communication with customers).

Greenbudsbaby project (managing client's product base; populating products, adding images/descriptions, uploading/updating new products' SKU).

Kvgsupply project (communication with client during presale stage regarding his business problems, providing solutions based on provided services, which led to a successful partnership).

Zoobashop project (configuring client's mobile application, adjusting layout, populating app with visuals).

Mariya Stepanchenko  
**COPYWRITER  
CONTENT MANAGER**



Sales and content manager at the public cooperation "Almier" (steel and metal warehouse).

Content manager & Copywriter at the Multy project (multicryptocurrency wallet development under the partnership with CyberFund).

Yulia Shirokostup  
**COMMUNITY  
MANAGER**



Interpreter at the 2nd International Short Film Festival "Kinosmena" (accompanying British director, translation of subtitles and annotations to films, correspondence with foreign directors, assistance in organizing the event).

Conference assistant at "Digital Go!" (assistance in organizing the event, meeting guests).

Interpreter at the Belarus Fashion Week (accompanying foreign designer).

Aleksey Borushko  
**COMMUNITY  
MANAGER**



1 year of IT experience as interpreter (engagement with users in public channels, analysis and content preparation for community channels, articles translation for English version of website).

Pasha Savitski  
**BLOCKCHAIN  
FRONT-END  
DEVELOPER**



Development of the project in the sphere of judicial expertise.

Founder of the project in the "Promise" (online news service, backend and frontend development).

Vitaly Zvirbul  
**SCRUM-MASTER**



Project manager in the public cooperation "Powerresources".

Sales manager in the public cooperation "Mobile supply".

Marina Panasik  
**CREATIVE  
DESIGNER**



Content Manager & SMM at Teddy S.p.A  
Official TERRANOVA community for Russian audience.

Visual designer for music and media projects in PODNEBESES and Ledokol.

Designer of presentation materials and promotional products at ELENA KIPER Publishing & Production.

Nikolay Apanasik  
**FRONT-END DEVELOPER**



Front end developer in "1teh.by", online retailer of the consumer electronics;  
Developer and founder of the service "mypad.by", delivery of electronics;  
Developer in "7shop.by", online retailer of consumer electronics;  
More than three years of the freelancing (development of sites on turnkey basis).

Alexandr Korolchuk  
**ANDROID DEVELOPER**



C# Developer at iTransition (development of the big document-version-control system);  
CEO at Flaxtreme (mobile game development, e.g. live wallpaper with Pahonia - a historical Belarusian coat of arms).  
Android Developer at Earth Planet (created 10+ projects from scratch or was the part of remote developers team).  
CEO & Android Developer at Blak-IT (mobile and web app development).

Vitali Ozierski  
**WEB FRONT-END DEVELOPER**



PHP & JavaScript Developer at FoggyLab (online entertainment service, web development).  
FrontEnd Developer at MVideo (web app development in the sphere of leading electronics retailers).  
Web Developer at United Traders (web app development of trading services).  
Co-owner & Head of Web Development at Blak-IT (development of mobile & web apps).

Valery Vaskabovich  
**BLOCKCHAIN ARCHITECT TECHNICAL ADVISOR**



10 years in mobile app development. Was a part of numerous project featured by the Apple. Has experience in game development. Co-founder and Tech Lead of Raid Wars project.

Liliia Shevtsova  
**BLOCKCHAIN ADVISOR**



Project and Communication Manager, PR Strategist , ICO advisor and Blockchain expert.  
Liliia has an experience in ICO projects as team member and advisor:  
Communicator's role between ICO Projects and community.  
Public Project Reputation .  
Personal communication with community and target groups  
Communication strategy of project  
Advisors attraction  
Working with Investors

Anton Ostrovsky  
**BLOCKCHAIN ADVISOR**



Entrepreneur, investor and manager of IT-projects. FinTech expert with more than 15 years' experience in business management in CIS countries and on global markets.

Jungki Claudio Oh  
**BLOCKCHAIN ADVISOR**



Studied computer science at university of North Carolina and university of Pennsylvania, and Sogang university.  
Experienced as a university professor and serial entrepreneur in fields of blockchain, mobile, fintech, and strategy consulting in Korea, Singapore, and China.  
Working on a few global blockchain projects as an significant advisor.

Eric Sun  
**PROJECT DEVELOPMENT ADVISOR**



Eric Sun, CEO of Bit.Game - the world first token exchange focus on Blockchain game industry. Mr. Sun is also The organizer of GBGU(Global Blockchain Game Union). Before Bit.Game, Eric was CEO of Palm2Play inc, a mobile game company, their game published on AppStore and GooglePlay, operating in Southeast Asia, MENA, and China.

# ROADMAP



# PLANNED GAMES ON DICEGAME PLATFORM



## FACTORY OF DICE MILLIONAIRES (FM DICE)

FM Dice is a P2P dice game available for iOS, Android and Web. Users have the possibility to play one-to-one as well as participate in the tournaments. The main aim of the FM Dice is to conduct the tournament for 1 048 576 participants, where each user can increase the prize in 150 000 times.

As for the game play, it starts with user registration, then to launch the game session the player should select the number of participants, set bet and tap Join. After all these steps we should wait until all participants necessary for the tournament will join the game. When all players are added to the tournament, then the game starts. Extended functionality of the app allows to track user's rating of win and loss, history of all tournaments is integrated as well. This is the current behavior of the app available in App Store, Google Play, Web. Our aim is to improve the logic by integrating all algorithms with the DICEGAME platform. Let's look where we are right now and what is planned to be done after integration with the platform.

FEATURES	CURRENT MVP	FM INTEGRATED WITH DICEGAME PLATFORM
TOURNAMENTS	WITH < 1000 PARTICIPANTS	WITH > 1000 OF PARTCIPANTS
COINS USED	GAMING CHIPS	CRYPTOCURRENCY AND DICE TOKEN
WALLET USED	USER'S BALANCE OF GAMING CHIPS	INTEGRATION OF MULTICRYPTOCURRENCY DICE WALLET
ALGORITHMS	ALGORITHMS ON OUR OWN API	ALGORITHMS ARE BASED ON THE BLOCKCHAIN TECHNOLOGIES
RESULTS VERIFICATION	NOT AVAILABLE	INTERFACE OF THE RESULTS VERIFICATION
CHAT & COMMUNICATION WITH OTHER PLAYERS	NOT AVAILABLE	CHAT WITH OTHER PARTCIPANTS WITHIN THE ONGOING TOURNAMENT
EMOJI & ANIMATIONS	STANDART LIBRARY OF EMOJI & ANIMATIONS	EXTENDED LIBRARY OF EMOJI & ANIMATIONS
BONUS TOURNAMENTS	NOT AVAILABLE	POSSIBILITY TO PARTICIPATE IN BONUS TOURNAMENTS WITH THE 50% OF THE WHOLE COMPANY'S REVENUE AS THE PRIZE
AFFILIATE & REFERRAL PROGRAM	NOT AVAILABLE	IMPLEMENTATION OF THE AFFILIATE & REFERRAL PROGRAM INSIDE THE APP

These are the key factors that make the FM Dice to be a unique game. We gather all benefits from the existing online games, unite them and add our own ideas to create the real game with minimum bet and maximum win. To get clearer vision how we achieve this uniqueness, we would like to list all major features of the FM Dice comparing with other online games in the table below.

	FM DICE	ROULETTE	POKER	LOTTERY	BLACKJACK	SLOTS
Simple rules of a game	●	○	○	●	○	○
No specific skills or background required	●	○	○	●	○	○
P2P game	●	○	○	○	○	○
Game in the tournament format	●	○	●	○	○	○
Fast gaming session	●	●	○	○	●	●
Tournaments for free with the real prize	●	○	○	○	○	○
Up to 50% of winning odds	●	●	○	○	●	○
Tournament with 1mln of participants	●	○	○	○	○	○

Thus, we are developing revolutionary ideas to show that the FM Dice as the online game has a great potential to bring incredible profit engaging players and organizing online sessions within the real gaming table.



## DICEGAME 1000

(DG 1000)

- Instruments used: 5 loaded dices;
- Number of players: 5;
- Aim: to achieve 1000 points.

DG 1000 is a long-lasting enough game, but it's very addicting and engaging at the same time. Those who are eager to proof the excellence over the energy of luck will take advantage from the game.



## DICEGAME MONOPOLY

(DG MONOPOLY)

Monopoly is a classic game in the economic strategy style. Players will be engaged in buying, leasing and selling process of their own properties. The aim of the game is to be the only player with property saved.



## DICEGAME ROCK-PAPER-SCISSORS

(DG RSP)

The rules of this game "rock-paper-scissors" are known from the childhood. So it's a good time to step back and recall all details.



## DICEGAME POKER

(DG POKER)

- Instruments used: 5 loaded dices;
- Number of players: 4;
- Aim: to gain the max number of points;

The idea of the game: points of all players are put together, the sum is divided into the number of participants and the average number is determined. The gain or loss is specified by identifying the average from the sum of points.

# CONCLUSION

We connect the dice history of the past with the revolutionary future of the blockchain. The DICEGAME platform allows to tackle the most prominent problems with the current gambling industry by providing the fair way to have up to 50% of winning odds in face-to-face games without any special skills required. We decentralize everything in the DICEGAME platform: only white box algorithms, clear and user-friendly conditions of the games, fast and transparent transactions, no limitations on deposits and withdrawals. We are building it with true and sincere love of games. We promise to grant a veritable and transparent luck. Join our Universe of iGaming!



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