GRAZ

Blockchain betting platform

Official white paper

www.graz-ico.com
info@graz-ico.com

ENG

Contents

Product description 3-4
Interface and functionality 5-7
Market analysis 8-12
Financial plan 13-14
Project's roadmap 15
Graz and the blockchain 16
Graz and Ethereum 17
Smart contracts in Graz 18
Interaction between Graz platform parts 19
Legal aspects 20
GRZ token 21
PreICO and ICO 22
Why invest in Graz 23
The project team 24-25
Advisors 26
Project outlook 27

Product description

Graz is a unique platform that makes it possible for people all around the globe to make wagers without worrying about getting their winnings. The platform offers users a set of various events in different domains including betting lines, politics, economics, science, film industry etc., within which users can make bets and win money. At the same time the coefficient is proposed by the one who initiates the bet, and that makes the platform more advantageous and interesting than placing bets in betting stores on predefined coefficients. Therefore, users can propose either their own wagers or choose appropriate wagers proposed by other users.

Graz will change usual conception of bets taking it to a new level. Many people dreamed of such a platform, and now thanks to blockchain and smart contract technologies it can be qualitatively implemented. Graz has a number of advantages over competitors:

- Clear and simple scheme of operations
- Completely decentralized structure. Direct interaction between users making bets with each other.
- No risk of non-payment due to smart contracts
- Low fees (1% of winnings)
- Broad range of events within which you can propose any bet with higher coefficients

Product description

With Graz you can make any bet within a broad range of events proposed by the platform. For instance, you find your favorite team's tomorrow's game and propose a bet to other users with the following conditions: 1:5 coefficient that your team wins with an initial amount of 100 GRZ coins. Accordingly, the other bet participant must have at least 500 GRZ coins to make bet with you. You can also propose an unusual bet that a player from your favorite team will do a flip when celebrating a goal. In short, there are no limits to imagination when proposing an event. Such unusual events are checked and approved by moderators.

At the moment, users make bets in betting stores that set coefficients in a special way adding a margin of 5-20% to always make a profit. That is why the long term winning in betting stores is an almost impossible task. Graz gives you an opportunity to be in bookmaker's shoes and make bets with people like you around the world.

- Opportunity to make up the bet's subject yourself.
- Opportunity to bet unlimited amount of money.
- Opportunity to set any coefficient.
- No actions are taken against users who always win.

Advantages over booking stores are quite obvious. The future has come through the development of blockchain technology. It is smart contracts that let users be assured in getting their winnings.

Interface and functionality

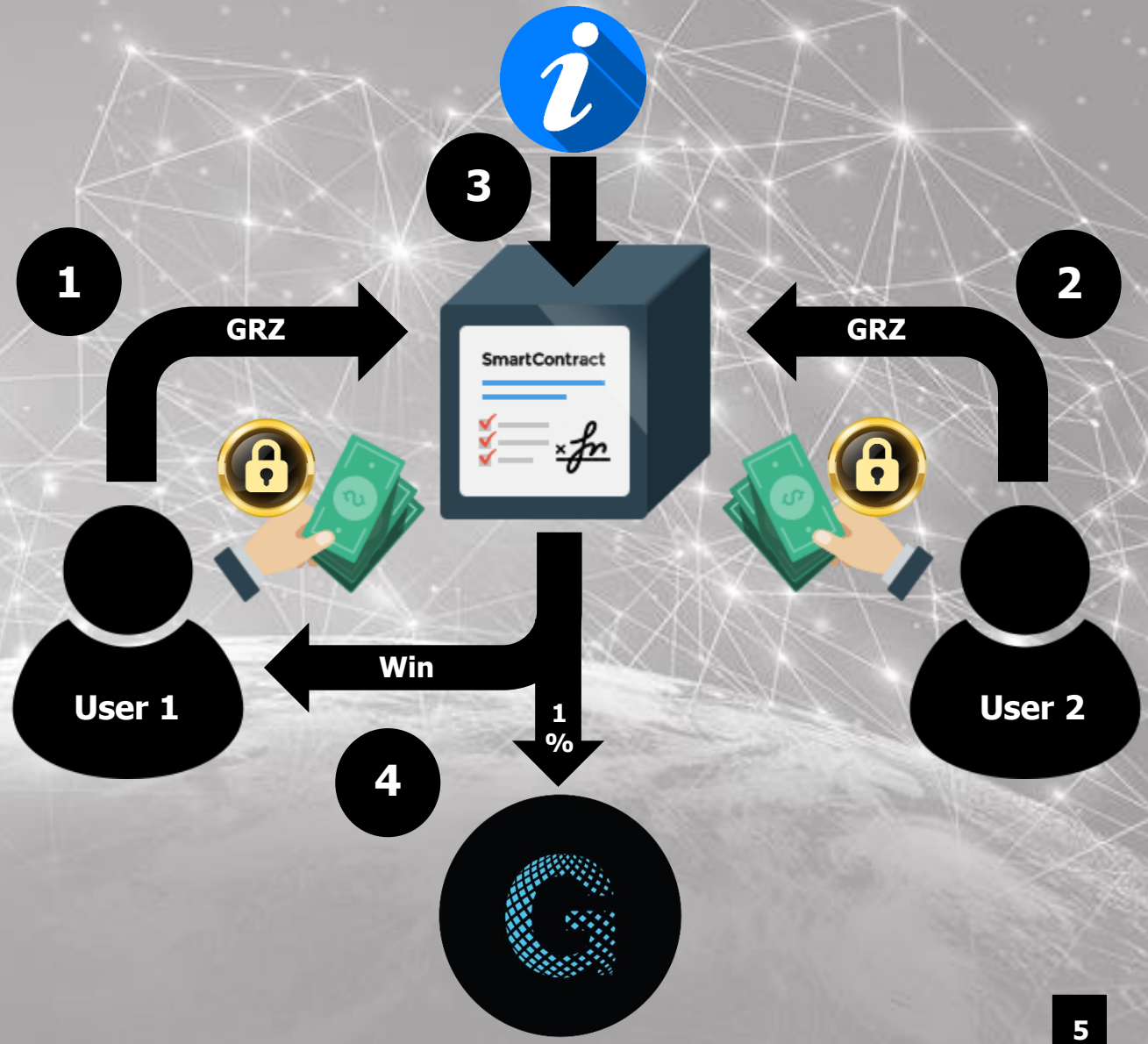
The platform flowchart is pretty simple and consists of the following stages.

1. User 1 creates his own bet within the range of the offered events and proposes a coefficient and a maximum value to be bet.

2. User 2 finds the bet in the list and accepts it. In so doing, a smart contract between the users is created which freezes their GRZ coins until the completion of the event.

3. All the information about the events is passed to smart contracts which determine the winner of a bet.

4. Upon completion of the event, the smart contract obtains information about the outcome and automatically transfers the winning amount to the winner, having charged 1% platform fee from the amount.

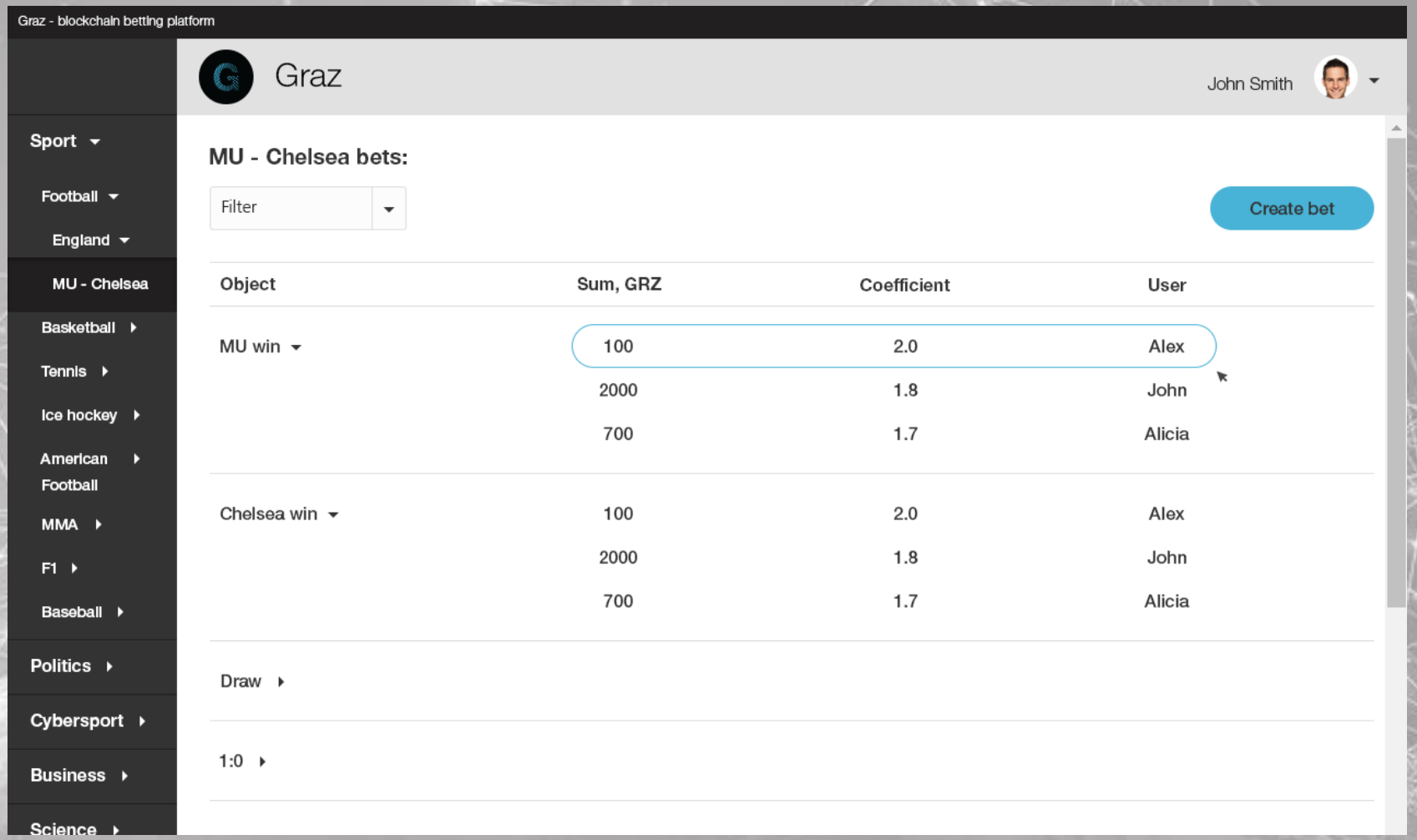


Interface and functionality

For creating a bet you have to:

1. Find an event you are interested in;
2. Choose a subject of the bet (e.g. Manchester United win)
3. Choose the most suitable offer for you by the amount and the coefficient.

If you have not found an interesting offer for you, you can easily create your own bet.

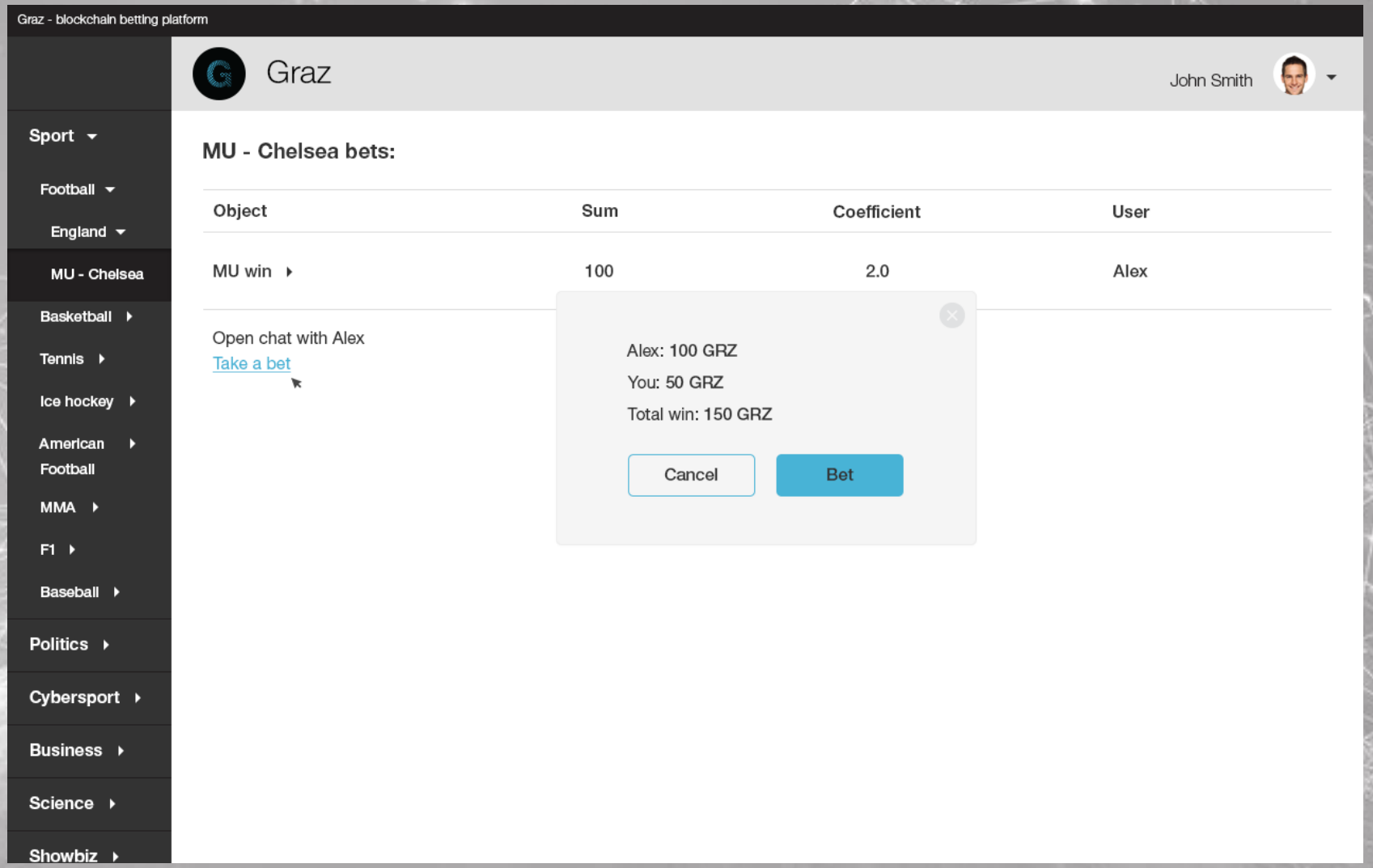


Interface and functionality

After you find a suitable offer from another user, you have to confirm the bet. After the confirmation, the necessary amount from your account will be frozen till the outcome of the event is determined.

In case of your win the winning amount will automatically be transferred to your account.

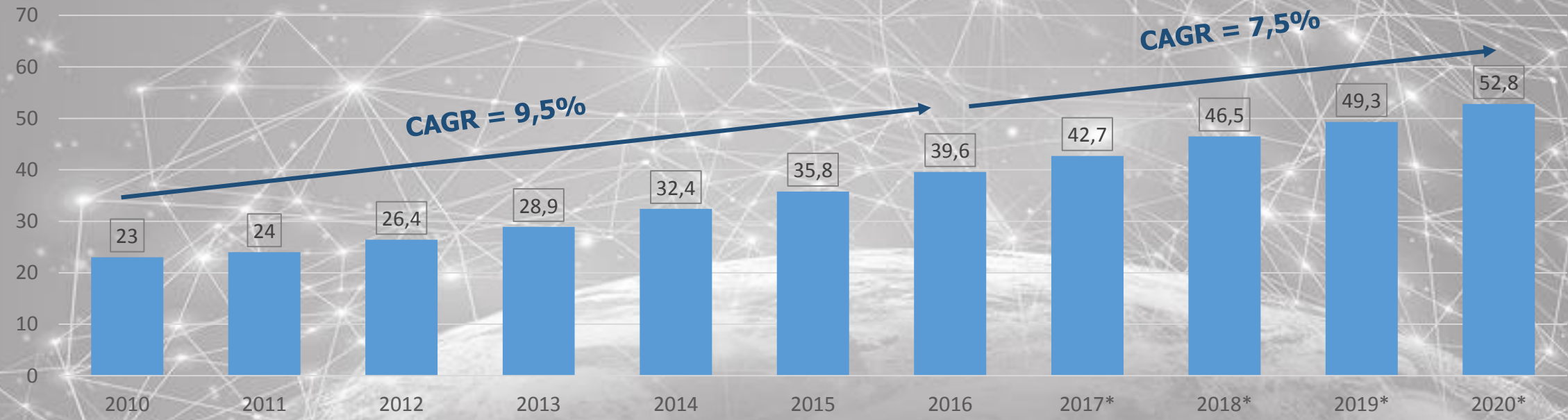
If necessary, you can create a chat with the other user and change some of the bet attributes.



Market analysis

Global online gambling market is growing very fast among many other global industries. For the period 2010-2016 the amount of gross profit of companies operating in this field increased by 16.6 bn euro, and the average growth rate was 9.5%. During the outlook period such tendency will hold, and it is expected that by 2020 the market size will have increased by additional 13.2 bn euro, and the average growth rate will be 7.5%. Therefore, it is clear that the market is growing rapidly and, naturally, emergence of new players is fairly reasonable.

Figure 1. The global online gambling market growth rate in 2011- 2020, bn euro



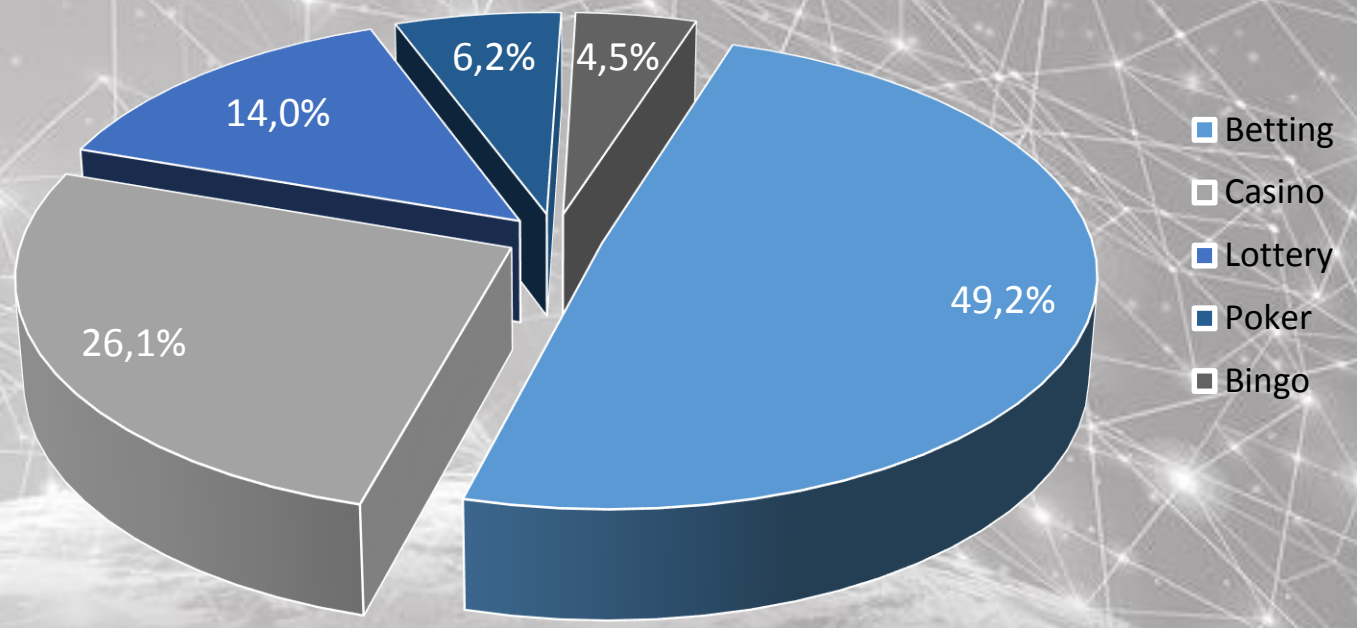
Resource: H2 Gambling Capital

Market analysis

Almost the half of the online gambling market (49,2%) is formed by the online betting market which amounts to about 19.2 bn euro according to the data for 2016. Wherein, on the offline market betting is in only fourth place.

For the majority of large betting services going online is the main development strategy. The situation on the offline market is already highly competitive, but the Internet still has unoccupied niches, especially on the markets in development. The main growth factor of the online segment is high-technology development. New devices and technologies are getting more people involved into "online" than any of the marketing campaigns of bookies. Furthermore, high interest to different gadgets and emergence of innovative gambling services make it easier for betting stores to attract more young people that are more likely to make a bet with their smartphone other than visit a gambling place.

Figure 2. The global online gambling market gross profit distribution among segments



Resource: H2 Gambling Capital

Market analysis

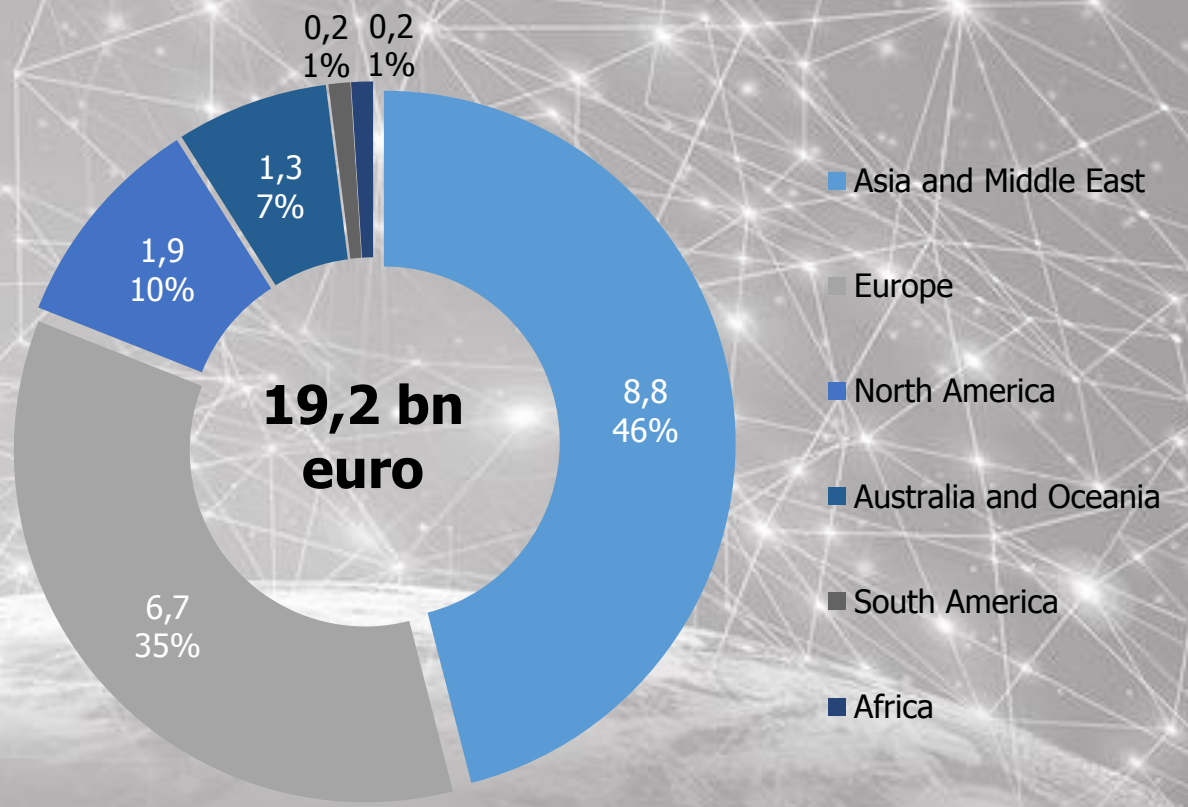
The bulk of gross profit from online betting is accounted for by Asia and the Middle East - 46%. Europe is in second place with 35%.

Online betting are intended to broaden coverage of users and make it possible to accept bets from any part of the world. However, supervisory authorities of some countries, e.g. the Russian Federation, restrict access to foreign betting services for their own reasons.

Blockchain technology can solve such issues. It should be noted that Graz is not a betting store. Graz is a platform for making bets between users from different corners of the planet, which guarantees the payment of the winnings.

With regard to that it is necessary that the marketing campaign should be targeting the biggest markets that is Asia, Europe and USA. These markets are the most prepared ones for introducing new technologies.

Figure 3. Distribution of gross profit from online betting among world regions in 2016, bn euro



Resource: H2 Gambling Capital

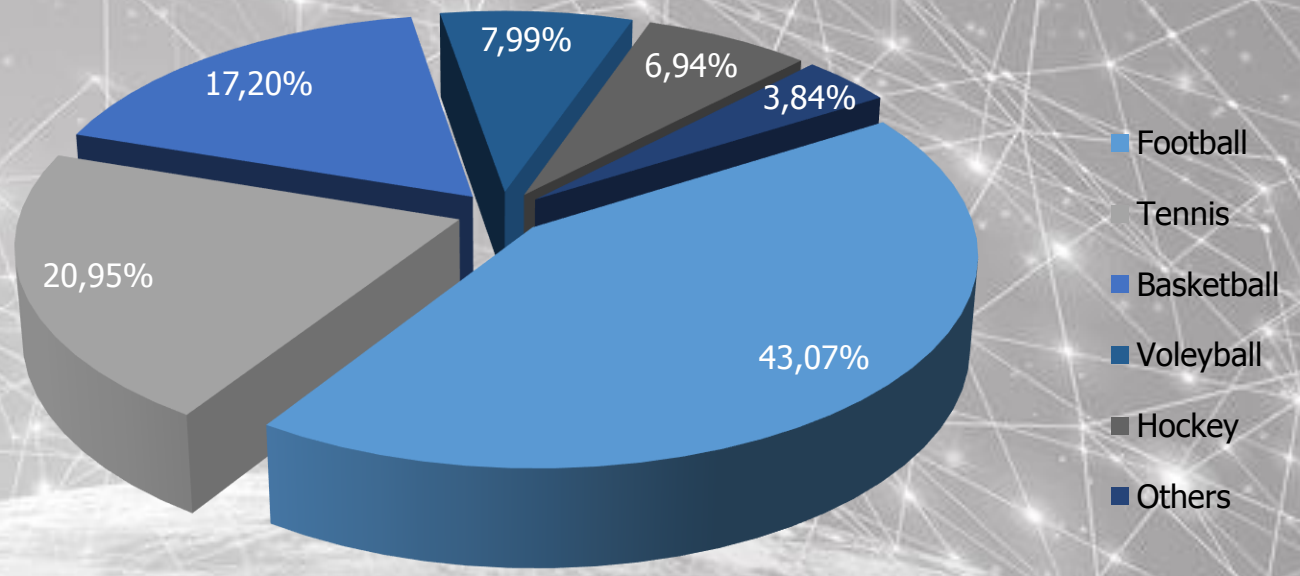
Market analysis

Figure 4 is quite relative as the amount of bets on a specific sport depends on the seasonality which is characterized by large tournaments. But, regardless of that, football is clearly the leader on the betting market.

Besides standard sports betting lines, Graz offers its users to bet on major events in the field of politics, economics, science and other interesting world news. In addition, it will be possible for users to make bets on cybersport events. This fact allows to enlarge the target audiences and attract new users who are not interested in sports bets.

Many betting services do not accept bets on certain events because of a high risk to themselves. In Graz users themselves propose the subject of a bet (within a particular event) and set the coefficient, which is a big advantage over typical betting stores.

Figure 4. Top 5 sports by the amount of betting



Resource: H2 Gambling Capital

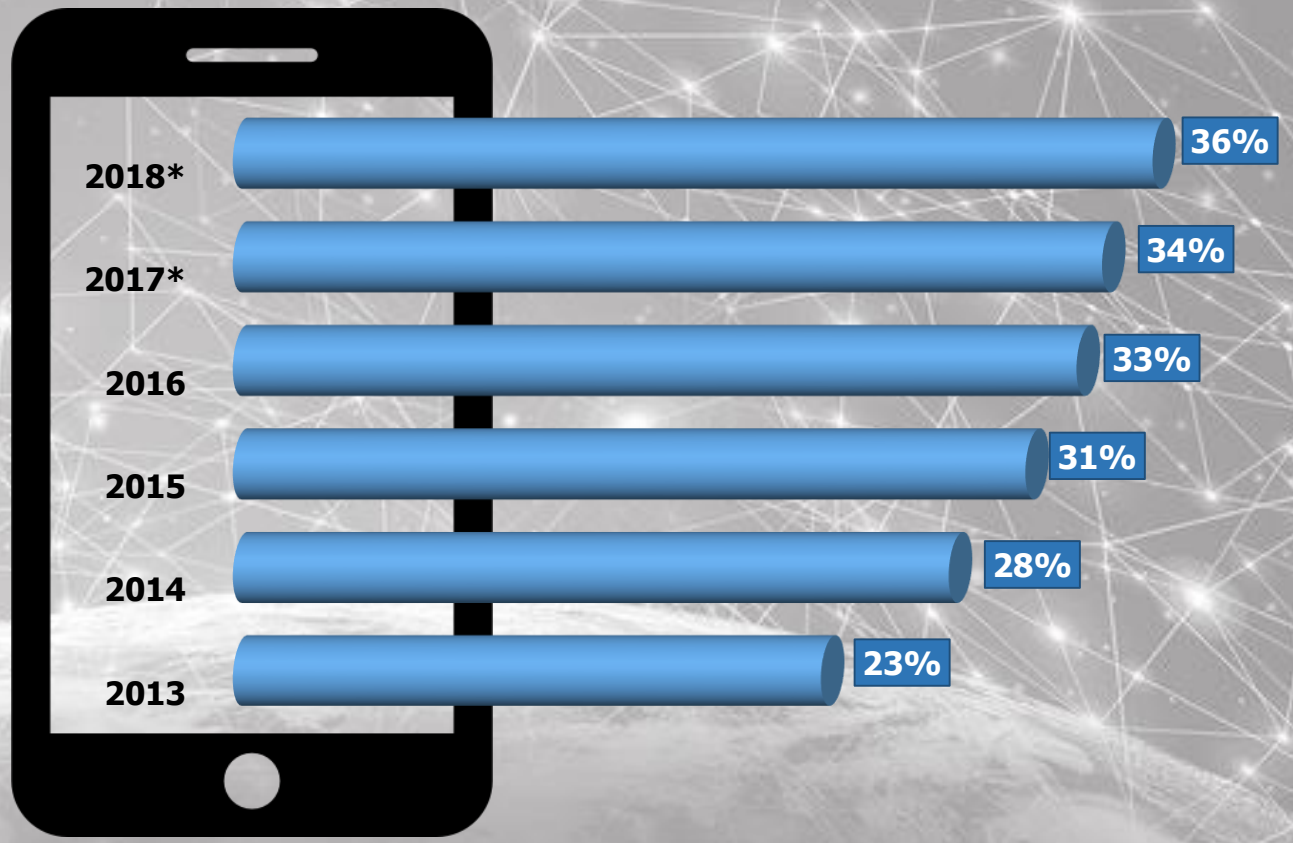
Market analysis

According to the results of the online gambling market analysis, it can be clearly said that the market is growing and will keep up the same pace the next few years. It has to be noted that the emergence of the online segment and mobile applications has a great influence on the industry (especially it concerns the online betting market).
Even though Graz is not a betting store, positive dynamics of the market will have a positive impact on the development of the platform. Furthermore, we are sure that we will manage to attract also neutral audiences that like to bet but has no gambling experience.

The key factors when choosing a betting store are:
- the credibility of the organization and guaranteed payment;
- betting odds;
- coverage of events;
- fee of the winnings.

By all abovementioned accounts Graz has a great advantage, allowing us to quickly capture the necessary audience.

Figure 5. The share of mobile platforms on the online gambling market



Resource: James Stocks & Co, private analysis

Financial plan

Collected funds after the token offering will be allocated to the development of the platform and operational activities of the company until we pass the break-even point (Q2 2019). Development of the platform will take up 6 months.

Main expenditures during development relate to the beginning of marketing campaign (51%) and remuneration (34%). A part of the team is already selected but the major part will join the team by the development start. All new team members will be presented in our official social media pages.

Along with creating a web version, we will also be developing a mobile version of the platform for Android and iOS operating systems, which will encourage additional flow of users. Besides, after the development of the platform we will consider the wishes of the users and improve Graz, so that to make it more simple and user-friendly.

Platform development cost, USD

The wage fund	881 280
Marketing expenses	1 338 007
Commercial expenses	396 000
In total:	**2 615 287**

Staffing table before and after platform development

Position	**Number before the launch**	**Number after the launch**	**Salary, USD/hour**
Project manager	1	1	50
Developer	9	5	50
Marketer	5	12	30
Graphic designer	3	3	30
Lawyer	1	1	25
Moderator	0	15	7
Customer service manager	0	10	7

Financial plan

The launch of the platform is followed by rising expenses for marketing, that will lead to a growth in the number of users. Based on the analysis of the largest booking stores' experience, we determined that customer acquisition cost (CAC) in the field of online betting is 13.4 USD. Whereas during a year one user bets on average 2000 USD (i.e. 20 USD fee per year for one user) . Therefore, the project will pass the break-even point in the second quarter of 2019 when the number of users reaches 1 million mark. Accordingly, the expenses of the platform since the development start amount to 16.8 million USD (optimal amount). The additional funds collected will be spent on adding more functionality to the platform and improving its performance, and also on improving the marketing campaign.

Figure 6. Number of users growth projection, million people

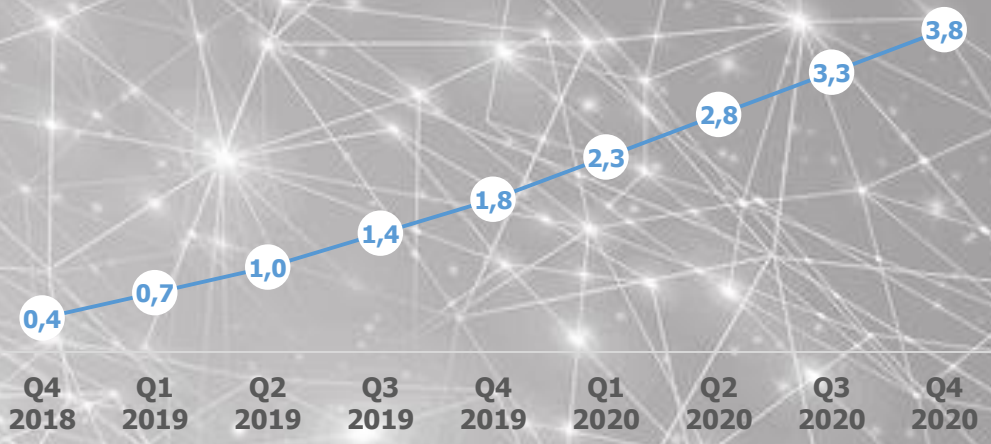
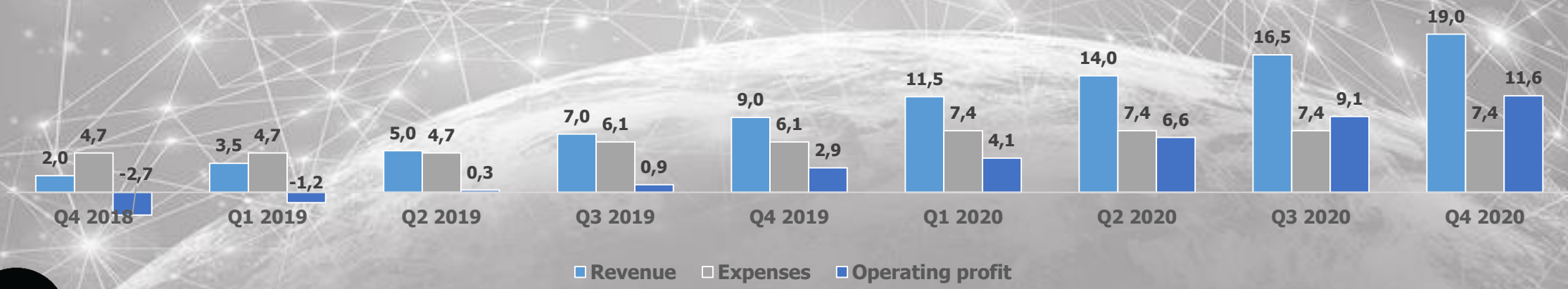


Figure 7. The project's financial performance forecast, million USD.



Roadmap

August – September 2017
Developing the concept and selecting team members for the project

September – October 2017
Conducting primary analysis and necessary research

November 2017
Studying the technical side of the project and preparing to Presale

19.03 – 02.04.2018
PreICO

March 2018
Developing demo-version of the platform and preparing to ICO. Concluding agreements with the leading exchanges.

01.05– 31.05.2018
ICO

June – November 2018
Proceeding on developing the platform and starting the marketing campaign.

December 2018
Testing and launching the platform

January 2019
Testing and launching the mobile version of the platform for iOS and Android

Since December 2018
Continuing the large-scale marketing campaign to attract client all around the world (Europe, Asia, USA)

Graz and the blockchain

Blockchain technology is a secure and stable way of storing and disseminating information among users on the Internet. All the information that flows into a blockchain is safe and secure, and is visible to any Internet user around the world. That makes it possible to create bets regardless of countries, nations or languages.

Nevertheless, blockchain has a several disadvantages because of its distributed structure:
1. Working with blockchain is not very fast. There can be delays from a few minutes to hours.
2. The amount of data to be stored is quite limited because of the cost of storing information in the blockchain (in the Ethereum blockchain every operation with the blockchain, mainly bringing your data inside, must be paid with “gas”).

However, these point do not cause trouble for doing our job, and here are the reasons:
1. For creating bets there is no need of high operational speed, as for example on trade exchanges. The key operations that need processing can have lead time to response.
2. All information about a bet including corresponding discussions can be stored outside of the blockchain because it has no value in tokens or fiat currencies whatsoever. The blockchain will be used to store only crucial bits of information relating to a bet: the bet members, the coefficient, the amount of money at stake and the automatically generated code of the bet.

Graz and Ethereum

Why Ethereum was chosen for Graz?

1. Ethereum blockchain has a technology of smart contracts that serve as independent judges (arbitrators) in every bet and nullify every possible way of deception or fraud. Smart contracts are independent programme algorithms that are impossible to be violated even by its owner.

2. Ethereum blockchain gives an opportunity to create your own token for betting, and the key part is that you can place it on different cryptocurrency exchanges.

"Smart contracts solve the problem of intermediary trust between parties to an agreement, whether that is between people transferring assets like gold, or executing decisions between two parties in a betting contract"

Vitaliy Buterin

ethereum

Smart contracts in Graz

When a user decides to create a bet they call a smart contract function which saves the information about the amount of coins bet, the coefficient and other relevant pieces of information concerning the bet. On creating a request, the user gets the unique number of their bet in Graz network and can share it with other users to accept the bet.

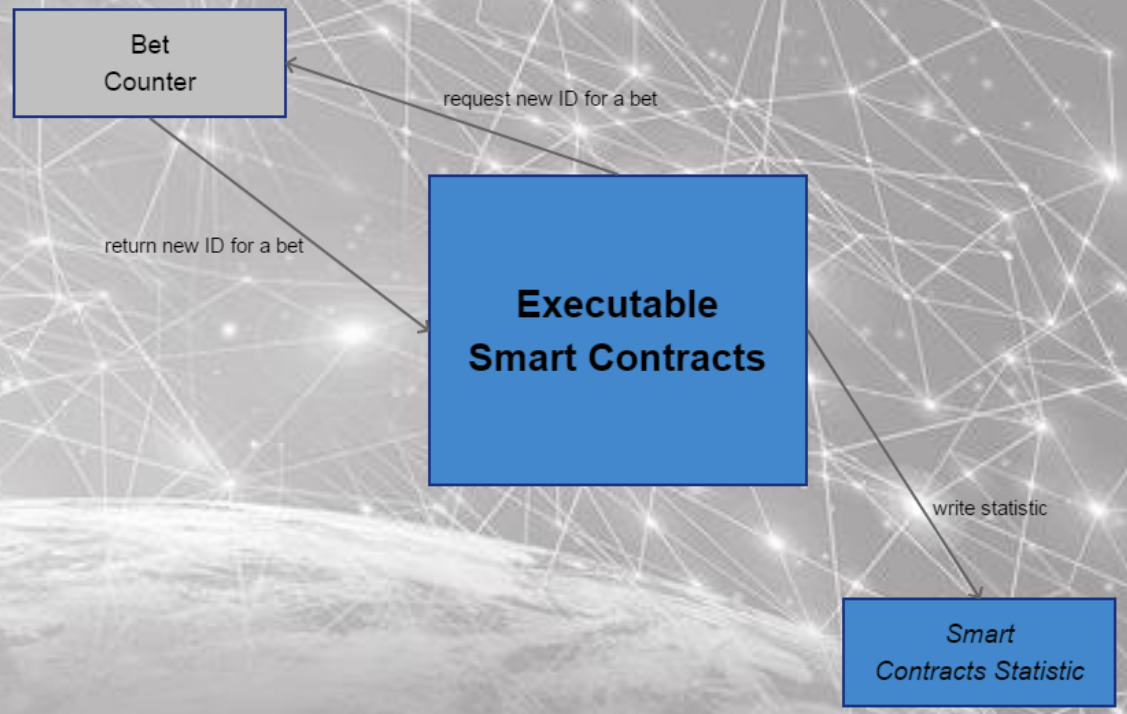
Having learned a bet conditions, the other user can accept the bet or propose their own coefficient. Once the bet is accepted, the parties can not refuse it or withdraw their coins from the smart contract. This is guaranteed by the smart contract itself and can not be violated.

The outcomes of betting events are determined automatically by the platform which gathers information about past events. In special cases moderators are involved to determine the winner.

At this stage it is impossible to provide a complete list of smart contract in the Ethereum blockchain because the architecture of smart contracts is intended to be scalable, which allows us to add new contracts and introduce new services.

The main parts of the architecture at the present moment are outlined in Fig. 8.

Fig. 8 Main components of Graz in the Ethereum blockchain



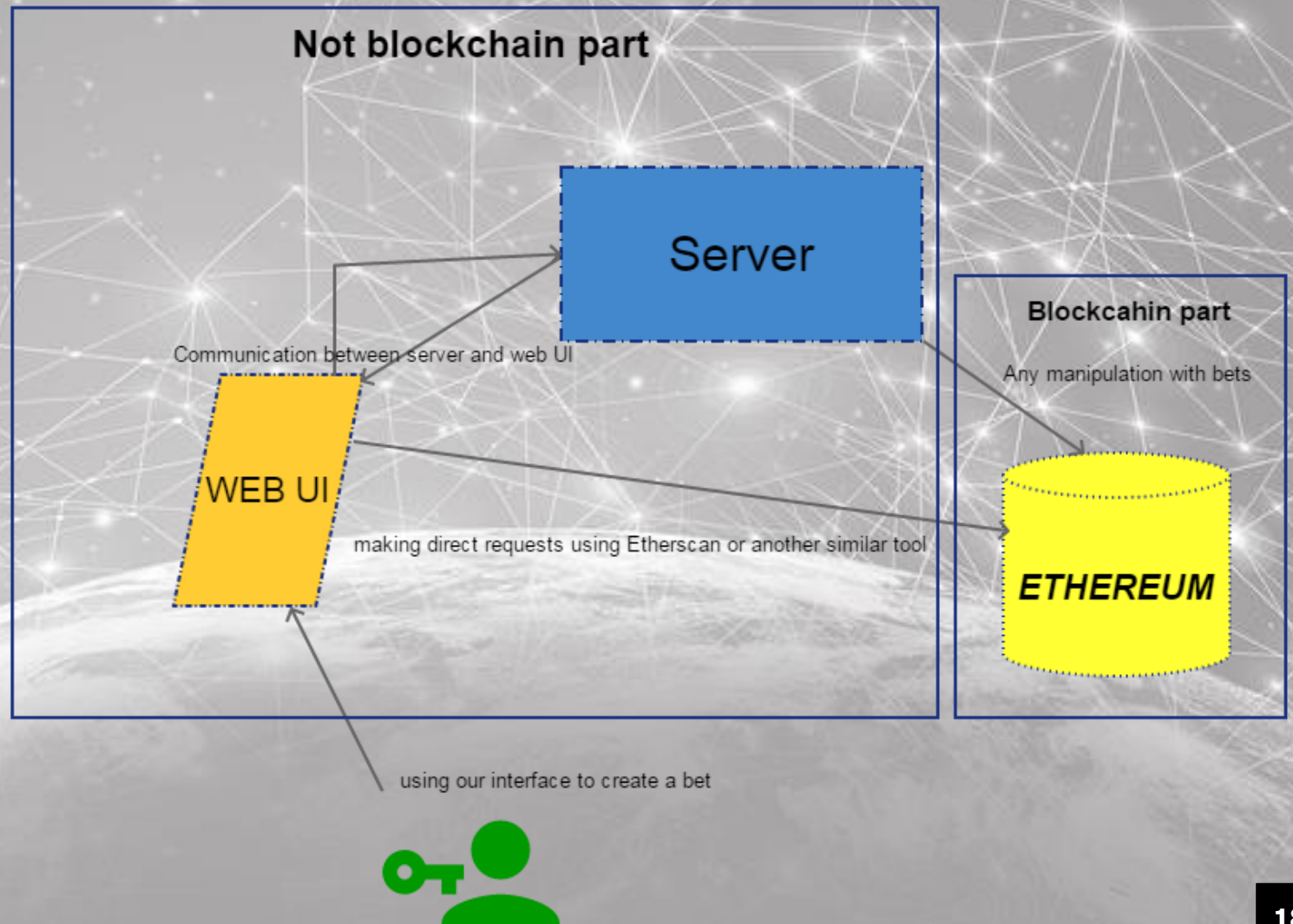
Interaction scheme of Graz components

Graz consists of two main constituents:

1. The blockchain part of the platform;
2. The "out-of-blockchain" part or "not blockchain" part

Interaction between these parts of the system will be implemented through Web3 and MetaMask based interface.

Fig. 9 Interaction between Graz main components



Legal aspects

For conducting ICO a special company will be established in Switzerland. Switzerland has a very liberal and business friendly jurisdiction with regard to financial regulation. The canton of Zug is the largest international center of blockchain technology development since 2013. It is the home of Swiss Crypto Valley – the leading ecosystem in the area of Distributed Ledger Technology.

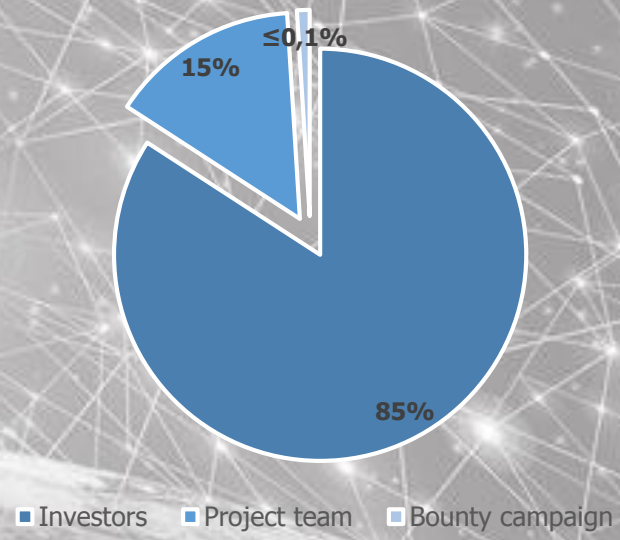
Therefore, Switzerland was chosen owing to a number of advantages:

- safety;
- credibility;
- clear and comfortable environment for conducting business;
- existence of the necessary infrastructure;
- possibility of cooperating with well-known IT-projects in the area of blockchain technologies.

GRZ token

- 100 million grazcoins (GRZ) according to the ERC20 token standart will be created using the Ethereum blockchain.
- 1 200 GRZ = 1 ETH* (1GRZ ≈ 1USD)
- Minimum amount of 30% of the tokens will be held by the project team.
- No more than 0.1% of all tokens will be allocated to Bounty campaign.
- During the pre-ICO maximum amount of 3 mln tokens will be offered.
- During the ICO 82 mln tokens will be offered.
- Unsold tokens will remain with the project team and, if necessary, will be offered at the stock exchange further.
- Soft cap = 7 mln GRZ (≈5 mln USD).
- Hard cap = 85 mln GRZ (≈60 млн USD).
- Upon completion of the ICO we are planning to transfer the tokens to the main cryptocurrency exchanges in order for our users to buy them freely and make bets.
- Token redemption is not expected. Either is burning or additional emission. We expect the price of grazcoin to be rising constantly without any kind of artificial manipulation.
- Tokens are not securities, they do not grant the right to vote or the right to receive a part of the company's profit.

Figure 10. GRZ tokens distribution



*or an equivalent amount in fiat/cryptocurrency at current rates as of the starting date of the token sale

PreICO и ICO

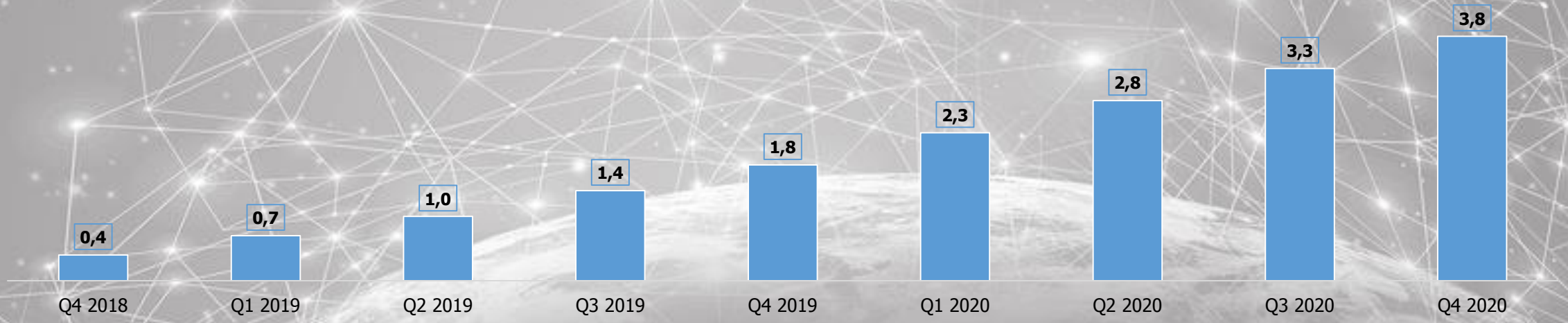
	PreICO	**ICO**
Date	19.03 – 02.04.2018 (14:00 UTC)	01.05 – 31.05.2018 (14:00 UTC)
The amount of offered tokens	3 mln	82 mln
Soft cap	-	7 mln GRZ
Hard cap	3 mln GRZ	85 mln GRZ*
Bonuses based on date	from 19.03 to 26.03.2018 - 40%; from 26.03 to 02.04.2018 - 30%;	from 01.05 to 10.05.2018 - 20%; from 11.05 to 21.05.2018 - 15%; from 22.05 to 31.05.2018 - 10%
Bonuses based on the investment sum	≥ 20K USD - 5%; ≥ 50K USD - 15%; ≥ 100K USD - 25%; ≥ 200K USD - 30%;	≥ 100K USD - 5%; ≥ 300K USD - 15%; ≥ 500K USD - 25%; ≥ 1mln USD - 30%;

*taking into account previous stages

Why invest in Graz

All bets in Graz are made only in grazcoins (GRZ). Therefore, to take part in any bet on the platform the user must have an Ethereum wallet and grazcoins that can be bought during ICO or on a cryptocurrency exchange. Such bets imply that there can only be one winner so some users will always have to buy tokens additionally on an exchange, which will create a stable demand for grazcoins. Furthermore, most of the collected funds will be spent on marketing and involvement of new users that will have to buy grazcoins. That is why, the long-term demand for grazcoins will only grow. Based on the statistics and performance of the world's biggest betting services, we are planning to attract up to 4 million active users by the end of 2020.

Figure 11. Projection of user number growth, million users.



Resource: private analysis

The project team

Zakaryan Vanik, co-founder

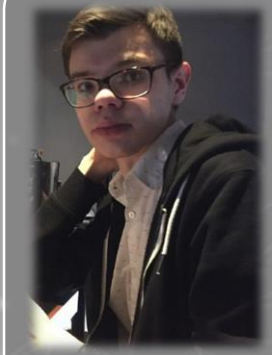
Ukraine

Finished V. N. Karazin Kharkiv National University and has two academic degrees: Master of Economics and Bachelor of Laws. Co-owner of several service delivery companies. Vanik has almost 10 years of successful experience in managing companies in different domains of real economy.

Arutyunyan David, co-founder

Russia

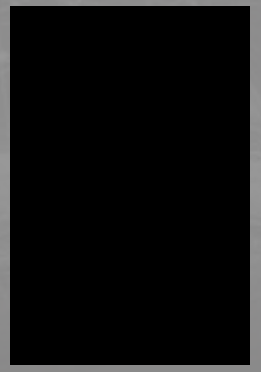
David graduated from Financial University under the Government of the Russian Federation with master's degree in Business Valuation and Corporate Finance. Co-founder and managing partner of consulting company "Benefit Group". He has a high level of experience in writing strategies and business plans for large russian companies. He also has experience in developing business models for his own projects and for agro-industrial companies among top 10 by revenue. David is author of articles and financial research in the sports industry.



Khrushkov Pavel, full-stack developer

Russia

Pavel is studying in National Research University Higher School of Economics pursuing his academic degree in computer science. He worked in Yandex where he became fascinated with neural networks and deep learning. His projects involve different mobile apps and websites as well as programs based on artificial intelligence techniques



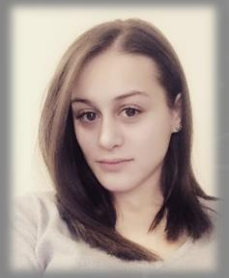
Baghdasaryan Gor, full-stack developer

USA

Principal Software Engineer in Cubic Corporation. 15 years progressively experience in designing, developing and maintaining software applications, collaborating with various stakeholders, and using different methodologies. Technical Skills: Relational database design, Client server, web and mobile application design, Object Oriented Development.

The project team

Davoian Albert, Lead Ethereum Engineer
Ukraine
Finished V. N. Karazin Kharkiv National University with a degree of Bachelor in Philology specialising in Applied Linguistics. Graduated with honors from National Research University Higher School of Economics possessing Master's degree in Computational Linguistics. Albert is a proficient Python and JavaScript programmer having also some programming experience in R language. His main focus is machine translation and machine transliteration, and application of machine learning techniques in linguistics in particular.



Zara Avdalyan, graphic designer
Germany

Graduated Istituto Europeo di Design (Florencia, Italia). Professional graphic designer focused on beautiful user-centered design.

Klimovsky Igor, smart contract developer
Bulgaria

Igor has two higher degrees of Peter the Great St. Petersburg Polytechnic University: in economics and computer science. He is experienced in developing high-load systems and software products in C++ and Java. Igor had also some experience working with Big Data. Lately, his main focus has been blockchain technologies and smart contract development using Solidity.

Advisors

Vladimir Gisin, project advisor

Vladimir Gisin is a Professor at Financial University under the Government of the Russian Federation. He is an author of books on the fundamentals of cryptography and lectures on cryptocurrencies and blockchain. Professor Gisin is planning to open a Master's program in studying Ethereum.

Abramova Marina, project advisor

Marina Abramova is a Professor at Financial University under the Government of the Russian Federation. Professor Abramova leads a team of specialists conducting expert analytical research in the field of blockchain, cryptocurrencies and ICO for the State Duma of the Russian Federation.

Project outlook

In the future Graz will improve functionality and possibilities of making bets. We consider the following points to represent the most promising direction for development of the platform:

1. Making bets involving several users simultaneously.
2. Broadening the range of events for making bets on.
3. Automatic analysis of proposed events and selecting the most interesting and alluring ones.
4. Shifting to our own blockchain in order to reduce transaction costs and improve the smart contract system.

Such functionality will be added as the platform develops and also in response to user suggestions.