



GAME MACHINE

WHITE PAPER

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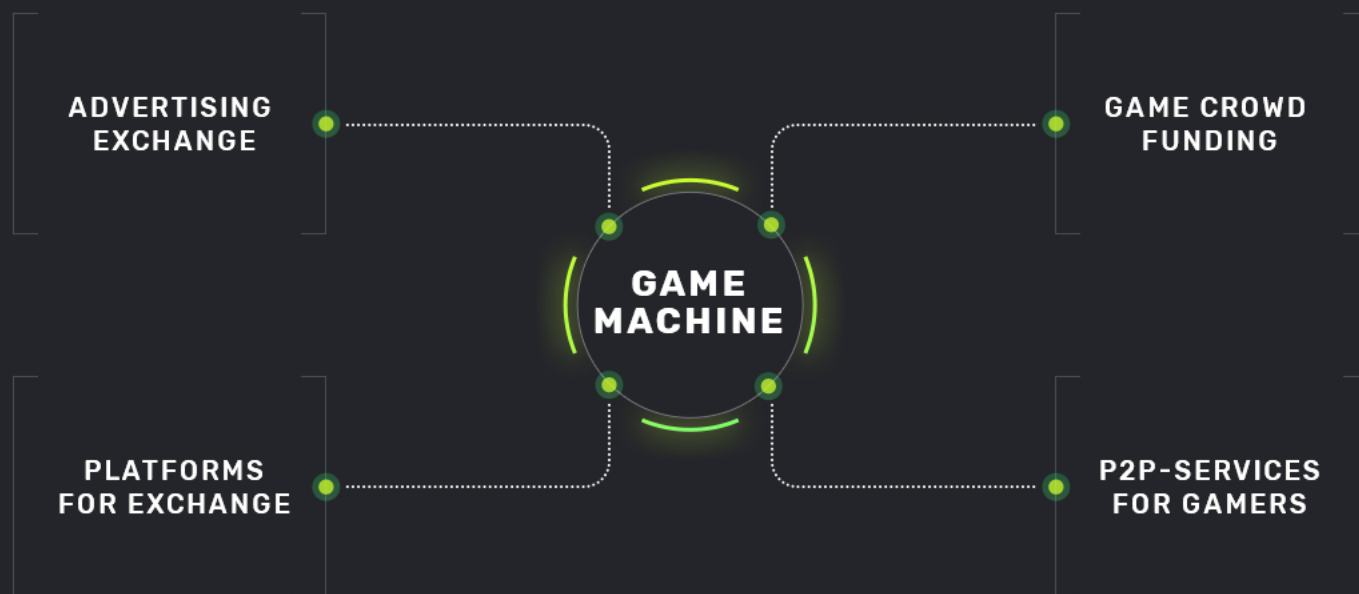
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GAME MACHINE

Game Machine is the global open ecosystem for a game industry constructed on the basis of the blockchain technology. Game Machine will unite all participants of this market: gamers, developers, advertisers for the sake of development of the industry and improvement of game products quality.

Game Machine creates loyal gaming audience which generates cryptocurrency Gamefuel by means of the principle of limited Proof-of-Work (Limited-Proof-of-Work). Use of such an approach allows to limit access to infrastructure to not participants of the market.

The game and advertising platforms are releasing on the basis of Game Machine which allows to communicate directly with audience of gamers, developers and advertisers are implemented.



Due to a combination of the principles of Limited-Proof-of-Work, Proof-of-Authority, Proof-of-Stake the ecosystem of Game Machine allows to exclude unfair participants, removes a fraud-traffic and gives the chance to gamers to choose only those projects which really are interesting for them.

For support of infrastructure and its promoting after a start of a Game Machine blockchain we launch:

- Game Machine Client – a miner and the program for gamers.
- Rise Machine – the platform for ICO crowd funding of games.
- Ads Machine – the advertising exchange for a game industry.
- Exchange Machine – the crypto exchange for gamers.

Further, this list is supplemented already with any project on the basis of a blockchain of Game Machine and cryptocurrency Gamefuel for a game industry from exterior developers who will support infrastructure of Game Machine and a game industry.

We will make joint efforts with all adherents everything that this contribution to development of the game and advertising industry did not remain unnoticed.

ADVANTAGES OF GAME MACHINE

Low commissions

The commission is adapted under a game industry. The minimum size will provide an opportunity to make a binding even to micro transactions in an equivalent of several cents.

Combination of the principles

The combination of the principles used in confirmation of transactions, actions, etc. allows to exclude fraud, to increase reliability of system and to strengthen trust to participants of a system. The used principles are Limited-Proof-of-Work, Proof-of-Authority, Proof-of-Stake.

Smart contracts

Simple smart contracts and the minimum commission give the chance to create any projects for a game industry: game exchangers, shops, cybersports services to hold mass and pair tournaments, to include in the games and many other things.

Simple entrance to an ecosystem

Involvement of gamers happens with the help of a product of Game Machine Client. It is the functional program for PC allowing to use fully all power of modern technologies. The simplest and clear access to a mining, game items, transfers of cryptocurrency, crowd funding and games shops, and also social components of the appendix.

It is ready for exchange

Exchange of items or services for gamers, a game developers, advertisers most conveniently and quickly. All assets, from gaming experience to finishing items for a popular game tokenize most simply. Use of smart contracts and a blockchain does transactions and exchange the safest and transparent.

Safety

Realization of the main currency in Game Machine ecosystem (Gamefuel) fully corresponds [to the CCSS standards](#) in order to ensure of the maximum indicators of safety.

BASIC PRINCIPLES OF GAME MACHINE NETWORK

Limited-Proof-of-Work (LPoW)

Difference from classical Proof-of-Work in which equipment power directly influences awards and creates "a power race" creating many negative factors, such as: the difficult entrance of new participants, forces to make investments in the equipment, but not in development of network, strong increase in consumption of electricity, etc. LPoW allows to remove these problems, having made access to a possibility of use of PoW limited.

The used restrictions: a mining from the special equipment and farms with high rates of speed (restriction on speed and as the equipment), access to a mining only gamers (authorizations [Steam](#) Auth, [Twitch.tv](#), [Wargaming.net](#) ID etc.) and other types defined at a design stage of a blockchain of Game Machine.

Proof-of-Authority

Some transactions, for example, crowdfunding transactions for new projects, can be confirmed by means of the principle of Proof-of-Authority. The authoritative user of an ecosystem of Game Machine during participation improves the global indicators, such as time of system use, progress, mining speed, the number of the carried-out transactions, an expertise in system, level in the connected services and games, etc. Such transactions allow to make more reliable carrying out crowd funding/rent/sale in the game sphere.

The ecosystem of Game Machine sets as the purpose development a game industry, improvement of products quality and creation of global loyal audience around the project. The value of system is created and supported for each participant of Game Machine.

TO THE GAMER

Gamers are the main participants of an ecosystem therefore exactly around their needs and problems and Game Machine is under construction. Base gamers have an opportunity to participate in development of the cryptoworld and to receive an award for it in liquid cryptocurrency Gamefuel. By means of the client of Game Machine Client the gamer gets full access to possible use of this cryptocurrency:

- Purchase of in-game items in favorite games
- Translations Gamefuel between participants of system,
- Participation in crowdfunding interesting projects,
- Performance of motivated tasks for an award,
- Safe and simple intergame exchange of items,
- Access to new opportunities in the game world, such as purchase of an in-game items in the p2p-credit, rent of in-game items for a while,
- Access to any services using cryptocurrency Gamefuel and Game Machine smart contracts.

In details about in-game items

The in-game item is the item existing in a game and used by gamers for the purpose of improvements of a game character's characteristics. Such items of a miscellaneous influence game process: in some games items directly improve character's characteristics and influence balance and superiority over other players, in others are means of manifestation of identity.

It is possible to receive items in the different ways depending on a game and the item. Some items are given only for certain achievements in a game and demand time expenditure, some items can be bought directly from the developer of a game, and some can be received only having exchanged with other player.

From the moment of online games emergence Internet services for exchange and purchase of items among players began to appear in large quantities. The known MMORPG World of Warcraft, Lineage 2 and others in which game currency was in great demand not only on official servers, but also on the emulators started by enthusiasts were the first wave. Exactly due to it there was a growing and self-organized market in which not only developers of games, but also directly players began to participate. Emergence of skins (a wrapper for items) in the game Counter-Strike became the second wave: Global Offensive from Valve after which skins began to use as actual value: marketplaces, exchangers, game services with items and many other things began to appear.

Now virtual items is a standard practice in online games, especially with model of monetization free-to-play. The most mass online games with items it is possible to call next games:

- Steam platform games: Counter-Strike, Dota 2, Team Fortress 2, Player Unknowns Battlegrounds and other. In these games in quality the main unit of a virtual item uses skins. The term a skin comes from typical function of this virtual item: it changes appearance of a game avatar of the user, weapon or the equipment. Skins can exchange between users and to sell/buy respectively.
- Wargaming games: World of Tanks, World of Warships, World of Warplanes. In these games the main unit of a virtual item are an internal currency (gold or doubloons depending on a concrete game). For this currency it is possible to buy the special equipment possessing special characteristics and giving advantage in fight. The main way of receiving gold is the investment of own means. In these games there is no possibility of items exchange between players, but there is a possibility of an item purchase as to itself, and as a gift to any user.
- Blizzard games: World of Warcraft, Hearthstone, Overwatch, etc. In these games different schemes of monetization and different ways of interaction with in-game items. For example, it is possible to transfer any things in a game at an auction in World of Warcraft, in Hearthstone monetization is based on purchase of peculiar "boosters" – packs of five cards of a different rarity.
- Online games (MMORPG) from other developers: Warthunder, Archeage, Eve Online, Lineage 2, Aion, RF Online, Warface, Perfect World and great number of others. In all these games there is an internal currency (gold, Aden, the credits, etc. depending on a game). Schemes of connection and monetization different, but all allow to receive internal currency of a game on a certain player by means of external services.

TO THE ADVERTISER

Advertisers can use Gamefuel coins for creation of advertising campaigns in the form of offer for gamers in an office of the advertiser of Game Machine Ads. For this purpose the advertiser needs to create a campaign, to establish the award size for the gamer, to create the description of a task and necessary metrics then to transfer the necessary amount Gamefuel for carrying out advertising campaign to the transit address for the subsequent distribution of an award for performance of tasks between gamers.

The transit address is public and transparent and viewing of transaction is available to any user.

Check of a task performance happens on the server, and the message about achievement of necessary steps and the purpose is transmitted through Game Machine Ads API or special SDK for PC/Android/iOS.

Possible offer types for gamers:

- video viewing,
- transition to the website,
- installation of the application or programs,
- achievement of certain results in the appendix and the program (for example, achievement of level, etc.)
- other types of actions which can be declared through Game Machine Ads API.

Payment by means of suspense account and Gamefuelcoins guarantees transparency of coins distribution among the gamers who are carrying out an offer, purity of a traffic (these are only the gamers who underwent validation for a mining using the client of Game Machine), speed of advertising start campaign and exact analytics.

From service for advertisers of Game Machine Ads takes the responsibility for moderation of campaigns, maintenance and help, keeping for support of these services the commission at the rate from 2% to 5% of the total cost of advertising campaign.

The minimum cost of advertising campaign for launch will make 1 000 Gamefuel that gives the chance to get an access to advertising network even to small publishers of games and small business.

Problems of classical offer advertising networks are solved with the help of blockchain technology and opportunities to use data on the user of the client of Game Machine for confirmation of reality of the participant. So, the advertiser can make the company available only for gamers who use Game Machine more than 3 months or bound phone and connected an entrance through TOTP.

TO THE GAME DEVELOPER

We divide advantage of a product for the sphere of development into 2 large sectors: the companies and big, already taken place, teams and small teams or indie-developers. Each of these segments is subject to the problems and looks for their decisions.

To the companies and big teams

The large companies and big teams will have an opportunity to monetize a traffic which they could not monetize earlier. It gives arrival of the new capitals and reduces costs for marketing expenses for interaction with this audience.

To indie-developers and small teams

Indie-developers will be able to carry out crowd funding of the game on the Rise Machine platform and to attract the capital from the interested audience which is usually not participating in crowdfunding because of lack of the necessary sum and also the first players.

SHORT GAME-INDUSTRY REVIEW AND ADVERTISING MARKET AROUND

The global game market over the past few years shows positive dynamics and rather rapid growth. It agrees to research of the Newzoo company, in 2016 it made \$101.1 billion, in 2017 will make already \$108.9 billion, and by 2020 will pass for \$128.5 billion. We invite you to become a part of this new and dynamically emerging market.

The general interest of audience in this market is attracted by really rapid growth of its segment – the eSports market which shows really [impressive dynamics of growth](#). From 2015 till 2016 it grew more than by 43% – from \$325 million to \$463 million. In 2020 the market of cybersport can already reach volumes in \$1.5 billion. This segment, besides growth in monetary volume, shows the same volumes in growth of audience. For example, one of the most popular championships in the world of cybersport of The International on the game Dota 2 in 2017 [reached peak in more than 10 million viewers](#) at once, and in 2014 the similar peak was at the level of 2 million. For comparison, the final of the seventh season of Game of Thrones was watched (или has been watched) by the audience of 12 million people. Other known championship on the game League of Legends this year collected the general audience of the unique audience near [43 million people](#).

More than 50% of audience of broadcast of cybersports meets in [the eSports market investigated by the Newzoo company](#) are not only an audience of cybersport, but also the acting gamers spending free time in favorite computer games.

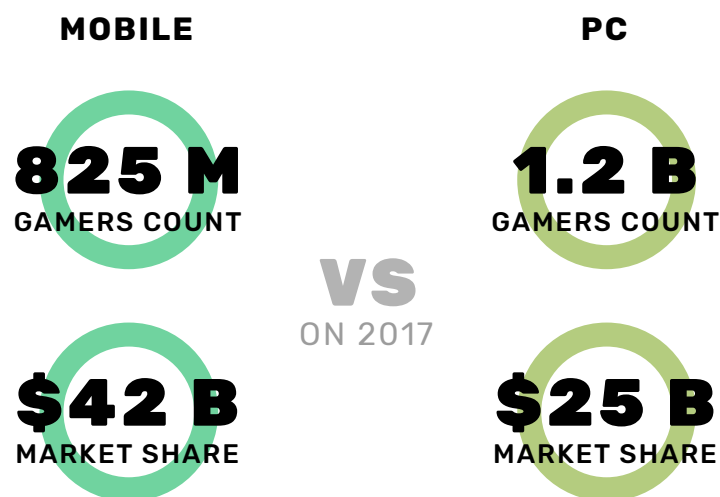
In the global market of computer games 42% of the market of mobile-games are included, 23% of the market of computer games and 31% of the market of games for consoles. The total amount of the market is estimated at \$108.9 billion for 2017 from which to a share of games for PC more than \$25 billion come. Despite a trend of reduction of percentage volume of a share of games for PC and games for the console in general, volume in money remains same (about \$25 billion for PC and \$33 billion for the console), it is possible to call a tendency positive as developers of large games for PC master also the mobile-market. So, the most known example, the game Hearthstone from the Blizzard company which is multi platform (there are versions for PC, Android, iOS, macOS, etc.) thanks to inclusion of a mobile-segment in February, 2016 [passed for 50 million users](#).

One of large segments of the global game market is the market of marketing and advertising. Now on the market there are services that allow advertisers to communicate directly with the gaming audience, for example, one of the most famous gamer streaming services Twitch.tv is [visited by more than 100 million people a month](#), who spend an average of watching their favorite streams more than 100 minutes a day. (note: Stream is a live video game / event / championship broadcast).

However, as this market is at a development stage, it is impossible to call it available to all segments of advertisers. The entrance on the global market of gamers and on its segments is used generally by pioneers and creators of these segments or large brands. For example, in the eSports market such brands as Coca-Cola, Audi, Red Bull, Intel, ESPN, Taco Bell and others are already involved in sponsorship. Large brands are tied not only on advertising purchase, but also on sponsorship. It agrees [to the latest data](#) in 2018 and 2019 division into direct advertising and sponsorship in the eSports market will approach 50%.

In a mobile-segment of the global game market regarding marketing and advertising a market division picture absolutely different: offer advertising networks are strongly developed, for example [ironSource](#), [Tapjoy](#), [Fyber](#). These are dynamically developing companies, for example, the Israeli company ironSource later [second round of investments](#) and merges to the SuperSonic company [it is estimated more, than at \\$1 billion](#). Such advertising networks are intermediaries between publishers of games and mobile applications and advertisers and are not deprived of problems which disturb game publishers and gamers. Despite this it is possible to call offer advertising networks the most profitable way of monetization free-to-play mobile games for developers and publishers of games at present.

Including thanks to it the size of the market of mobile games will reach in 2017 \$42 billion against \$25 billion the market of computer games (without browser). The paradox and need of introduction of direct communication on the market of PC games is confirmed by the number of players: [according to Newzoo](#) in 2017 players on mobile platforms are about 30% less, than on PC (825 million mobile players against 1.2 billion players on PC). Introduction of modern tools on interaction from audience can give new breath to the segment of PC games losing percent.



“ESports. If you’re a marketer, this is one of those words that’s started to buzz around you are sure you’re going to be sick of soon.”

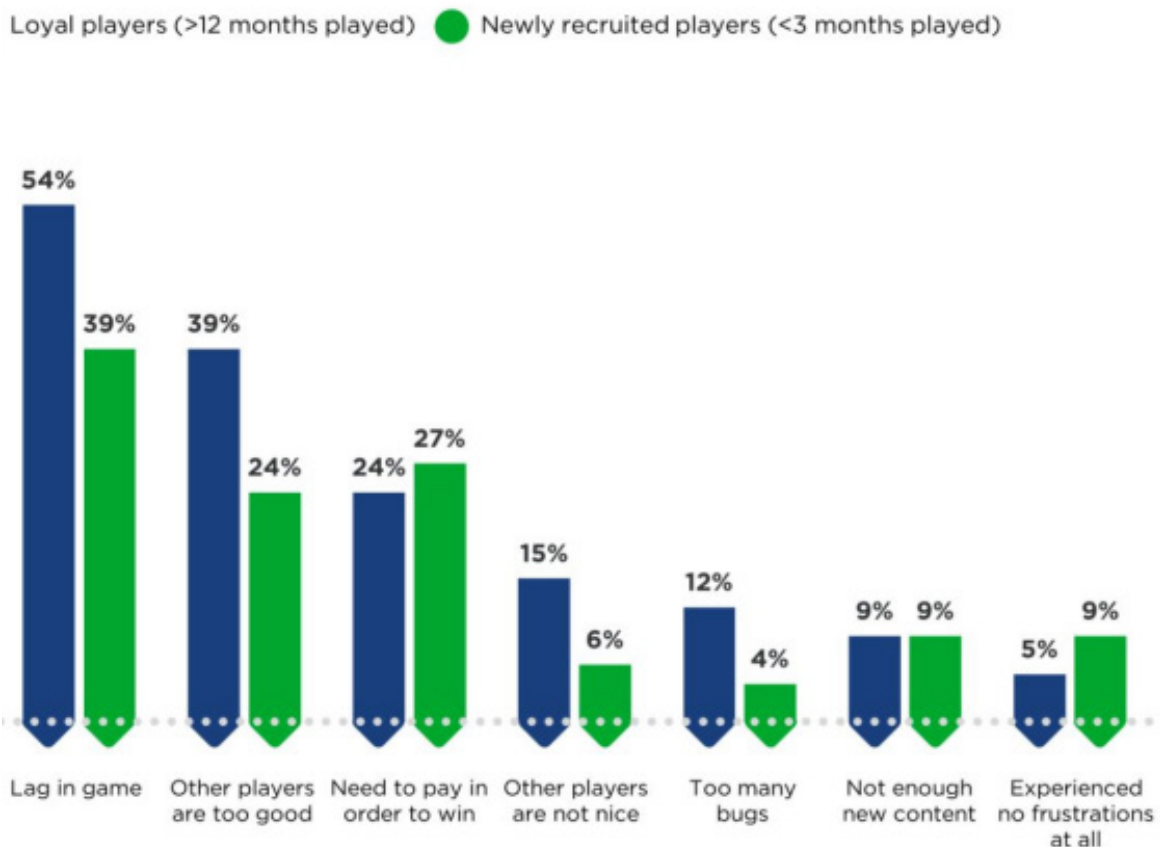
– Forbes, [Why eSports Is The Next Big Thing In Marketing](#)

THE SOLVED INDUSTRY PROBLEMS

GAMERS

The most part of the games existing online extend on the free-to-play model and demand monetary injections for a comfortable game, and the balance is rather often tied in games on purchase of game items. In many games in-game purchase — is the way to be allocated and to cause a stir from other players. Such item can cost rather much and be remote for the average player.

[It is more than a third of loyal players](#), more than 12 months, and a quarter of new players which spent for a game, are dissatisfied that more successful players much stronger, more richly also own special items. In addition 24% of loyal players and 27% of new players are dissatisfied that for a comfortable game and an opportunity it is necessary to win in principle to pay.



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Apparently from the statistics given above quite big layer of audience is not ready to make personal investments in sufficient volume for purchase of items. In spite of the fact that, this audience in principle is ready to pay and it accepts situation with “dishonest” balance, by means of Game Machine they could save or afford more interesting and expensive items.

Therefore Game Machine allocates for itself the following segments of audience:

1. Gamers who in principle are not ready to pay for in-game items and try to get them by means of a game, but not always have sufficient time
2. Gamers who invest money in games and are ready to pay for in-game items, but because of financial welfare are not able to afford even averages at the price items

Gamers who already invest in games money in sufficient volume and pay for in-game items average and high at the price, but had no objection to save or buy even better items .

ADVERTISING

The main mistakes of advertisers and marketing specialists are the wrong definition of target audience, the choice of streamers or the advertising platform and, as a result, an underestimating of efficiency of the advertising channel.

Opacity of analytics and high commissions

Also mistakes in assessment of efficiency of advertising channels are influenced by lack of transparency of the analytical data given by advertising networks. In fact, all advertising networks are intermediaries in communication of the advertiser with gamers and the following metrics often are doubtful:

- there are no exact data on the commission of advertising network,
- there are no exact data on characteristics of a traffic,
- advertising networks are subject to a fraud and do not give exact data on reality of the user

Anti-fraud

In addition the imperfect systems of an anti-fraud which are insufficiently developed by SDK and API create problems with charge of an award to the gamer participating in a campaign. According to our statistics on appendices with uses of advertising network Tapjoy about 80% of users had problems with an award for video and about 20% with big awards for heavy tasks.

GAME DEVELOPMENT

The free-to-play model which succeeded classical model of the subscription used, for example, in World of Warcraft was widely adopted very much and gave the chance to play online games to players who have no free finance which they can spend for games. Thus, the percent of the players buying in-game items allowed to receive at competent approach to balance not smaller, and even big profit, than in classical model of a subscription or single sale. But, nevertheless, the percent of the paying gamers is really low and by different estimates makes from 5 to 15% of all weight, and all other audience is hardly monetized on classical models of monetization.

Game developers invest additional money in marketing, joint advertising campaigns with the well-known brands (for example, World of Tanks and Burger King, Warface and KFC, etc.) instead of increasing financing by development and improvements of the product. Huge layer of players at last will have an opportunity to receive things free of charge, just providing capacities of the computer for a mining, and the companies developers — at last will be able to monetize other part of the audience.

BASIC SERVICES

GAME MACHINE GATEWAY

The Gateway Game Machine Gateway allows you to interact with the API of various games and services through a single entry point. Using the gateway, the player's account is linked to the Game Machine ecosystem and its profiles in those games, the items in which he wants to receive.

GAME MACHINE CLIENT

Game Machine Client is a uniform entry point for audience of gamers in Game Machine ecosystem. The client unites in himself functionality of a purse for cryptocurrency Gamefuel and basic services for gamers, such, as:

- shop of in-game items,
- tasks from partners and advertisers of Ads Machine,
- miner of Game Machine, advertising networks are subject to a fraud and do not give exact
- purse for carrying out transactions of cryptocurrency Gamefuel

GAME MACHINE WALLET

Game Machine Wallet is the functional purse allowing participants of an ecosystem of Game Machine to make Game Machine Client which are not needing wide functionality transactions with cryptocurrency Gamefuel.

Game Machine Wallet is available on Windows, Mac OS, Linux, Android, iOS.

ADS MACHINE

Ads Machine is an advertising platform for creation and management of campaigns of the advertisers interested in gaming audience.

RISE MACHINE

Rise Machine is a crowdfunding platform for fund raising for game projects. Any gamer the participant of Game Machine will be able to enclose the coins in a game and to receive a game or special bonuses the first. In addition the Rise-developer will be able to carry out by Initial Game Offering (IGO), suggesting to divide profit on a game in Gamefuel tokens with crowdfund investors.

EXCHANGE MACHINE

Exchange Machine – the exchange connecting trade between popular gaming currencies and gaming assets.

TECHNICAL REALIZATION ASPECTS

GAME MACHINE ECOSYSTEM

Game Machine – blockchain, which is realized on the basis of a blockchain-framework [Scorex 2](#) from Scorex Foundation. Scorex 2 the powerful blockchain-framework written in the Scala language, allowing to realize necessary functionality of Game Machine, such as smart contracts and the principle of LPoW. This the framework positively proved in several large and known blockchain-projects, one of the most famous representatives – the Waves platform.

Game Machine will be implemented in blockchain at the program level and to limit:

- the maximum mining speed of the block is approximately equivalent to two video cards of the GTX1080 family.
- for confirmation that the gaming computer will use both program practices, and the basic joint ventures,
- speed change of mining depending on level of credibility to knot (mining time, usage time of Game Machine and other measurable characteristics of the user).

Thus, the mining will be limited only for gaming computers.

Blockchain realisation of Game Machine and the algorithms used for a mining will be in the general access in [Github system](#), but are defined at a design stage of a blockchain.

Besides restrictions which force to use only own blockchain also the feature in realisation of all necessary functionality is added and to provide addition and new opportunities in Game Machine ecosystem. Firstly, it is implementation of smart contracts for creation of DApp on the basis of Game Machine, and also freedom in introduction of all modern and innovative solutions for development of all blockchain-sphere.

Gamefuel – basic currency of a blockchain of Game Machine with an open code of the smart contract and received in an award for a mining. All functionality of Gamefuel will be realized according to [CCSS standards](#) for achievement of the maximum indicators of safety.

In currency of Gamefuel there can be 18 signs after a comma, the minimum value of cryptocurrency $1 * 10^{-18}$ Gamefuel = 1 ence.

GAME MACHINE

Server

From the technical point of view of Game Machine is classical server API for interaction with it from clients under the systems Windows, Android, iOS, and, in the future, systems of the Linux and OS X family.

The Game Machine server providing realization of API is a web application on a standard stack of technologies:

- Laravel 5.4 (PHP 7.1)
- Redis,
- PostgreSQL,
- nginx, PHP-fpm, docker containers,
- UNIT tests, API tests

Also for preparation of the server for highload further will be used:

- memcached, RabbitMQ
- microservices for PHP, Golang, nodeJS, Scala and other languages depending on tasks.

The Game Machine server realizes the following functionality:

- authorization and registration of users,
- game services — exchange of Game Machine for in-game items
- internal shop of games for Gamefuel,
- the services for gamers which are closely integrated with games and system (matches with rates for Gamefuel and similar services),
- social services (chats, news, discussions, etc.).

Also the gamer or the user of an ecosystem of Game Machine will be able to use the website or a mobile application for use of limited number of services.

CLIENT

The client is appendices under operating systems written on JavaFX.

The gamer will have several options of participation in development of a Gamefuel coin: it can be just a miner, or store also the copy of a blockchain of Gamefuel for decentralization maintenance. Miner which store the copy of a blockchain receive an additional award for participation in development of a platform.

The Mining of a Gamefuel coin will be also available from the client and is connected by default to the main pool of Game Machine.

It is focused on development and addition of new functionality for gamers and users of a coin of Gamefuel. Now in the client the full-fledged purse for management of Gamefuel coins with a possibility of creation of transaction and sending Gamefuel for addresses of other users will appear.

ADS MACHINE

After Gamefuel coin entry into the exchange and start of own blockchain to be started Ads Machine. It is the service for advertisers allowing to create offers and to conduct advertising campaigns on the basis of a blockchain of Gamefuel.

The technologies planned in use:

- Laravel 5.4 (PHP 7.1),
- Redis, memcached, RabbitMQ,
- Golang and other languages for microservices,
- nginx, PHP-fpm, docker-containers,
- SDK for Android, iOS (java, objective c),
- PostgreSQL.

Within Ads Machine of the advertiser will be created:

- System of creation and management of campaigns;
- Separate web purses for the advertiser;
- Systems of statistics and analytics;
- API and SDK for definition of achievement of actions by users;
- System for the organization of support service,
- Systems of additional control of a fraud and price markups.

RISE MACHINE

The technologies planned in use:

- Laravel 5.4 (PHP 7.1),
- Redis, memcached, RabbitMQ,
- Golang and other languages for microservices,
- nginx, PHP-fpm, docker-containers,
- SDK for Android, iOS (java, objective c),
- PostgreSQL.

Within Ads Machine of the advertiser will be created:

- System of creation and management of crowdfunding campaigns;
- Systems of statistics and analytics;
- System for the organization of support service,

EXCHANGE MACHINE

The technologies planned in use:

- Laravel 5.4 (PHP 7.1),
- Redis, memcached, RabbitMQ,
- Golang, Scala and other languages for microservices,
- nginx, PHP-fpm, docker-containers,
- PostgreSQL.

Within the framework of Exchange Machine will be created:

- Classic exchange systems for trading,
- The systems of adding ERC-20 tokens and linking them to game values,
- Personal cabinet and verification systems

BETA-TEST

For check of the idea and collecting statistics and necessary metrics of Game Machine in September, 2016 it is started in the beta test mode.

Server

The Game Machine server at a stage of beta-start is the monolithic appendix the implementing REST API for communication with the beta-client of Game Machine.

The used server technologies:

- Laravel 5.4 (PHP 7.1),
- Redis,
- PostgreSQL,
- nginx, PHP-fpm, docker-containers,
- unit-tests

The technologies planned to use further:

- memcached, RabbitMQ
- microservices on PHP, Golang, nodeJS and other languages depending on tasks

The server is prepared for scaling and horizontal expansion.

The server undertakes tasks:

- authorizations and registration of new users,
- control of service functions and user characteristics,
- storage and interaction with a show-window of game items,
- deliveries of in-game items and micro transactions,
- optimization of the client (miner) under system characteristics of the personal computer of the specific user,
- control and distribution of the coins received by means of a mining
- maintaining classical and event-based statistics.

At the moment the mining of internal currency in the client is a mining of the third-party currencies having low requirements to characteristics of the computer. The base currency, which is in the beta-client Gamefuel – [Zcash](#).

Distribution of an award to users for a mining happens by calculation of value of change of an indicator found a sphere (rating) on a bullet on each user of times at 1 o'clock, normalization of these data and distribution of change of balance of the address on a bullet for an hour according to the obtained normalized data. Control and verification of data are carried out by the server interacting only with API of a pool.

This scheme has the shortcomings and is not scalable and suitable for realization of all opportunities and achievement of all purposes which are put before itself by Game Machine.

Client

The client of Game Machine at a stage of beta-start represents realization of the main functionality and the miner of currency allows to start, to perform third-party advertising tasks and to interact with the server on REST API.

Important feature of the beta-client of Game Machine – control of loading of resources of the computer for delay and a stop of a miner in operating time with the computer and automatic resumption of work of a miner at the idle time moments within several seconds. This feature allows not only to level influence of logs from a miner on the used computer, but also in a full measure to use computer resources.

In beta-implementation on the client different miner for different currencies, depending on used on the computer the equipment are used. Miners are directly connected to a pool and they are workers, and distribution of an award happens on the party of the Game Machine server. As well as it was told earlier, at the moment basic currency for a mining is Zcash.

Miner are sub programmes of the client and are downloaded and established from the server in the background in operating time of the Game Machine program. The user should not adjust something and to check, the program itself will define a suitable miner, will download it and will start.

The used technologies:

- JavaFX, CSS, FXML – a graphic cover
- Spring Boot – internal logic of the program
- Retrofit, Jackson – work with REST API
- WinAPI, DxApi – communication with an operating system and drivers of the video card.

The program has a possibility of work in the background, a conclusion of notices and auto start.

Screenshots of the Game Machine program for Windows OS are given below.



Fig. № 1: Appearance of the client. Main page of a miner.

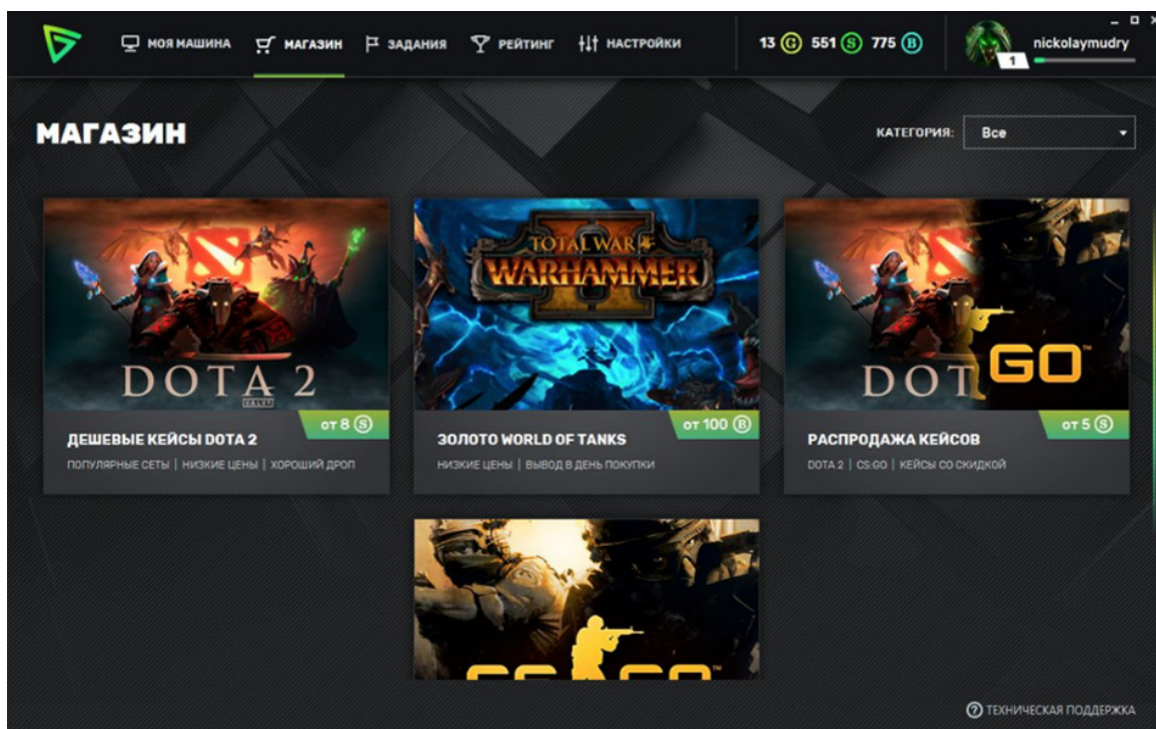


Fig. № 2. Appearance of the client. Page of shop of objects.

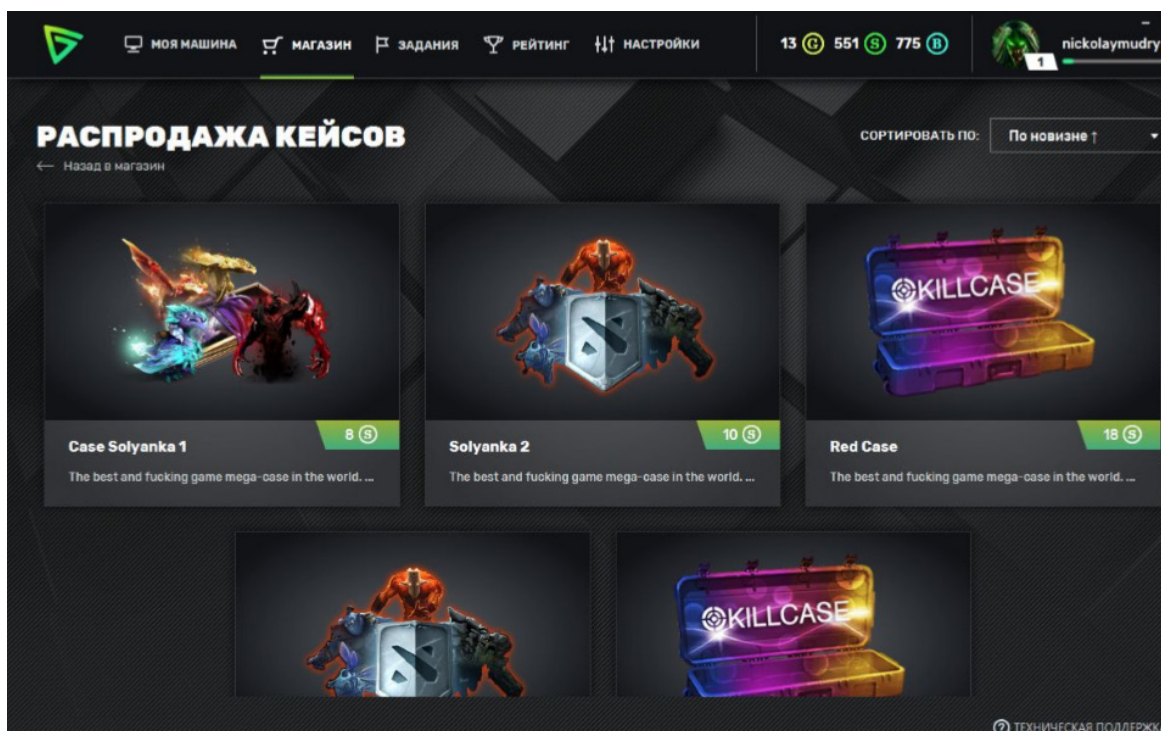


Fig. № 3. Appearance of the client. Show-window of shop.

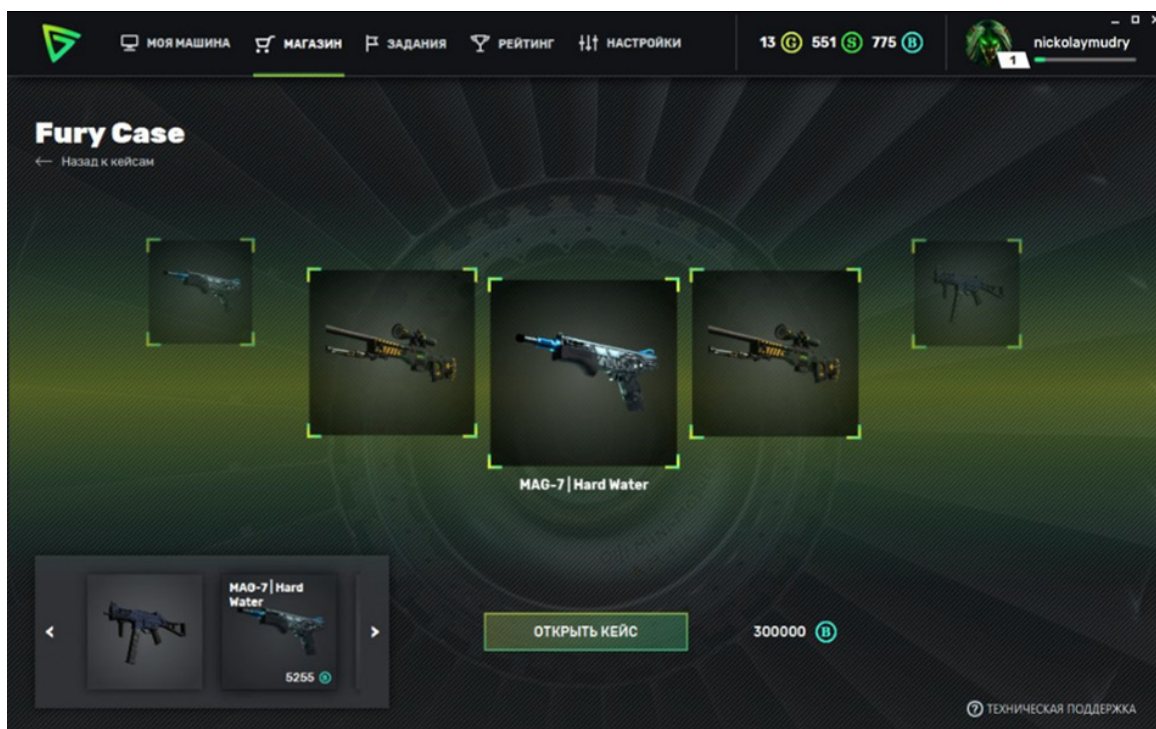
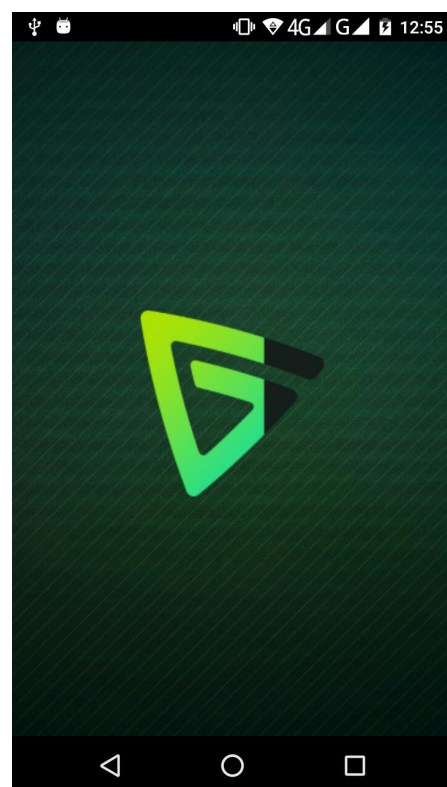
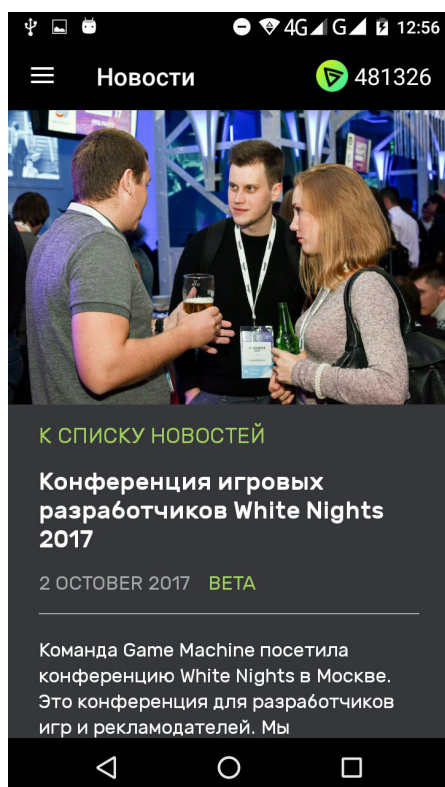
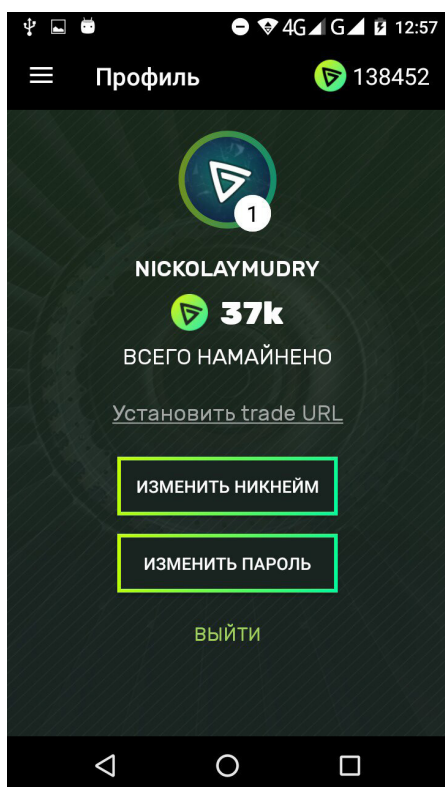
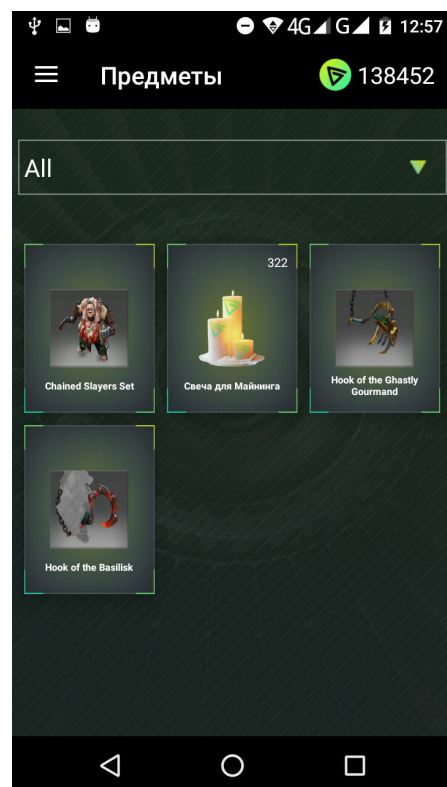
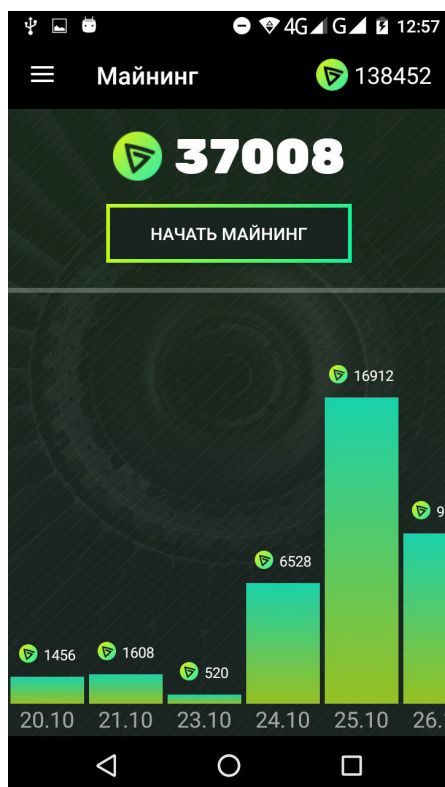
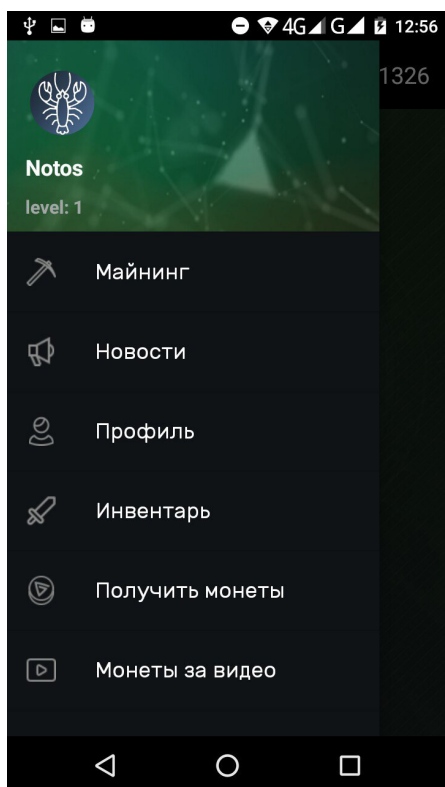


Fig. № 4. Appearance of the client. An example of a case on the game Counter-Strike:GO.



DEVELOPMENT PLAN OF THE PROJECT

It is shown bellow short roadmap development of the project for 2 years ahead from the moment of the beginning of the first work on the Game Machine project below. We see Game Machine a new global milestone in development of a game-industry and we consider that it is that minimum which we will manage to make for this period. Some stages are not considered in this roadmap – a thicket it the repeating events or are more rare hidden from us behind “war fog”.

March, 2017:

- Creation of a concept of the project.
- Investment of own means (\$80 000);
- Start of development of the project.

May, 2017:

- MVP Game Machine blockchain protocol and gateway to withdraw in-game items;
- Receiving Pre-seed of investments (\$120 000);
- Start of development of Game Machine Client

September, 2017:

- The closed beta test Game Machine (mining, conclusion of the items WoT, CS:GO, Dota 2).

October, 2017:

- Testing the advertising model using third-party advertising based on the beta client;
- Creation of the Game Machine mobile application,
- Addition of items and conclusion in the games Warface, WarThunder, World of Warships;
- Creation of a private office of the investor.

November, 2017:

- Addition of a possibility of purchase for coins of the games Steam and transfer to the Steam-account.
- Pre-ICO

December, 2017:

- Carrying out ICO. The purpose – \$20m;
- Main improvements Game Machine PC Client and App

January, 2018:

- Start development own advertising network - Ads Machine
- Development of referral system
- Development of the system of pumping and rewardings for gamers

February, 2018:

- Development of the website for control of a miner and introduction of additional functions

March, 2018:

- Transfer of a miner to Gamefuel blockchain;
- Exchange of tokens of GMIT for Gamefuel;
- Development of iOS of the application for management of a miner and additional awards for gamers.

April, 2018:

- Gamefuel conclusion to the exchanges;
- Gamefuel Wallet creation.

June, 2018:

- Start of MVP Ads Machine.

August, 2018:

- Ads Machine start.

September, 2018:

- Development of external API Game Machine.
- MVP Rise Machine.

December, 2018:

- Development of internal game shop for indie-developers.
- Rise Machine start.

March, 2019:

- Development anti-fraud on the basis of blockchain technology decisions for advertising displays on partner resources.

July, 2019:

- Expansion of advertising network Ads Machine for displays on partner resources.

September, 2019:

- MVP Exchange Machine.

November, 2019:

- Exchange Machine start.

ICO PURPOSES

Our idea – creation of the global open ecosystem for a game-industry constructed on the basis of blockchain technology. Game Machine will unite all participants of this market: gamers, developers, advertisers for the sake of development of the industry and improvement of quality of game products.

Currency Gamefuel– it is a liquid asset in which are interested large gaming community as Gamefuelhas direct converting in in-game items and it is used for a global turn in a game-industry between gamers, developers and advertisers. Also after entry into the exchanges currency Gamefuelit can be used for speculative trade.

For implementation of all ideas and realization of a product the capital on development, the capital on marketing is necessary for us for an exit to worldwide the market and working capital for implementation of obligations to miner (currency exchange on in-game items).

We expect that our project will be attractive to members crypto – communities which will promote development of the project by investments and will take part in creation of new infrastructure for gamers, the cryptoworld and the world of digital-advertising.

CHARACTERISTICS OF ICO

On end of the period of sale of tokens all participants will receive ERC-20 exchange GMIT in network Ethereum.

After start of the main network the exchange token of GMIT will be exchanged for Gamefuel coins in the ratio defined at the time of exchange or kept for a possibility of receiving profit on advertising network Ads Machine. All operations described in the present document will be performed by means of Gamefuel coins, and the exchange token of GMIT will allow to receive coins from initial issue.

Pre-sale

Start date of Pre-sale: November 21, 2017.

Expiration date of Pre-sale: December 5, 2017

Discount for tokens for the period of Pre-sale:

- **40%** (1 GMIT = 0.00024 ETH) during first day,
- **30%** (1 GMIT = 0.00028 ETH) during second day,
- **25%** (1 GMIT = 0.0003 ETH) during third day,
- **20%** (1 GMIT = 0.00032 ETH) remaining days,

The maximum hardcap Pre-sale in ETH – **2 800 ETH**.

Main sale

Start date of ICO: December 14, 2017.

Expiration date of ICO: January 31, 2018

The total amount of the released coins: 140 000 000 GMIT

Basic exchange rate of GMIT on ICO: 1 GMIT = 0.0004 ETH

The minimum quantity for purchase: 25 GMIT (0.01 ETH)

The maximum quantity for purchase: 7, 500 000 GMIT (3 000 ETH)

Bonuses:

1 week: +15% of volume of the bought GMIT tokens,

2 week: +10% of volume of the bought GMIT tokens,

3 week: +5% of volume of the bought GMIT tokens.

Referral program: 6 000 000 GMIT (4,6% of total amount)

Bounty: 2 000 000 GMIT (1,5% of total amount)

Hardcap: 40 000 ETH

Softcap: 3 000 ETH

Rules of issue and distribution of coins

- For investors of ICO will it is available to 71,4% of total amount (100 000 000 GMIT) including all bonuses.
- For initial distribution of in-game of items and balance for payments to gamers 14,3% of total amount (20 000 000 GMIT) will be used.
- 7,1% (10 000 000 GMIT) of tokens will be distributed between participants of team.
- For a bounty 1,4% of total amount (2 000 000 GMIT) will be used.
- For an award to advisors 1,4% of total amount (2 000 000 GMIT) will be used.
- For the referral program 4,3% of total amount (6 000 000 GMIT) will be used,
- All raised funds are accepted and stored on purses with the multi signature.

Time of distribution of Gamefuel and performance of the contract

Data on quantity of coins at a stage of work of Gamefuel in the beta test will be available all participant of ICO in a private office, and exchange tokens of GMIT will be transferred to Ethereum of the address of participants during ICO.

Exchange for Gamefuel coins will be carried out after start of the main Game Machine version on own blockchain to the period from March to May, 2018.

Use of the funds raised on ICO

Purpose	Volume (%oftotalamount)
Development of a product	50%
Marketing and PR	35%
Operating expenses	10%
Legal maintenance	5%

Safety and responsibility for the raised funds

All raised funds are raised for Ethereum a purse with the multi signature of three escrow-participating. This information will be open and available to any user of the website gamemachine.io.

The main amount of collecting is transferred on this Ethereum-purse during ICO by means of the contract.

Achievement of the objectives of collecting and the realized products

Sum of collecting	Realization
To 10 000 ETH	Game Machine, Game Machine Wallet
To 20 000 ETH	Game Machine, Game Machine Wallet, Rise Machine
To 30 000 ETH	Game Machine, Game Machine Wallet, Rise Machine, Ads Machine
To 40 000 ETH	Game Machine, Game Machine Wallet, Rise Machine, Ads Machine, Exchange Machine

Description of the contract of an exchange token

PAY ATTENTION: CRYPTOGRAPHIC COINS ABOUT WHICH IT IS TOLD IN THIS ARTICLE ARE COINS ON BLOCKCHAIN GAMEFUEL WHICH ARE SUPPORTED BY THE SOFTWARE OF GAME MACHINE. THEY ARE NOT ERC-20 COMPATIBLE TOKENS WHICH ARE AVAILABLE ON BLOCKCHAIN ETHEREUM.

In the end of the period of sale of tokens all participants will receive ERC-20 an exchange token of GMIT in network Ethereum.

After start of the main network Game Machine the exchange token will be exchanged for Gamefuel coins in the ratio 1:1. All operations described in the present document will be performed by means of Gamefuel coins, and the exchange token of GMIT will allow to receive coins from initial issue.

The code of the contract of an exchange token Game Machine (further – GMIT) is located in the Github system on the account gmoofficial (it is available on [to the reference](#)) and the main code of the contract is given below.

The token is based on the contract MintableToken from Open Zeppelin.

```
pragma solidity ^0.4.11;

import "zeppelin-solidity/contracts/token/MintableToken.sol";

contract GameMachineIcoToken is MintableToken {
    string public name = "Game Machine Ico Token";
    string public symbol = "GMIT";
    uint public decimals = 18;

    function GameMachineIcoToken (uint256 _amount) {
        owner = msg.sender;
        mint (owner, _amount);
    }
}
```

GMIT token code

The token of GMIT is ERC-20 a compatible token in Ethereum network with the name Game Machine Ico Token and a symbol of GMIT. Decimals after point – 18.

Description of the contract ICO

The code of the contract of the carried-out crowdsale of Game Machine is located in the Github system on the account gmoofficial and is available on [to the reference](#).

Description of future Gamefuel contract

Future Gamefuel contract will be ERC-20 compatible token with 18 decimals after point.

GAME MACHINE DEVELOPMENT

TO THE GAMER

After official start of Gamefuel coin in the client of Game Machine gamers will be able to receive the coins bought during ICO on the purse and to fully use them for any opportunities: to exchange for game items, to use for purchase and sale of items on third-party resources, to open exclusive cases, to play matches on coins and many other things. As the coin of Gamefuel is interesting not only to gamers and is liquid, depending on a course purchase of a coin on ICO will give the great opportunities as after ICO an opportunity to receive a coin will be limited to a mining, tasks and purchase at the exchange.

TO THE ADVERTISER

Besides support and to contribution of development of new advertising service of direct communication with gamers the advertiser will be able to buy Gamefuel coins at minimum price and to use them at any time as necessary. As interest of gamers in performance of tasks is tied to exchange rate at the exchange, later investment will be less favorable. The advertiser will be able to open access to new large-scale audience and to be one step away ahead of other players of the market.

TO THE GAME-INDUSTRY AND INDIE-DEVELOPERS

At the moment offer advertising networks do not allow to receive large volumes of a traffic from personal computers, and mobile devices are the main source. Gamefuel will allow to receive an inexpensive traffic of gamers not only to big game publishing houses, but also a huge number of independent indie-developers.

Also by means of Game Machine of the company of the game-industry will be able to monetize earlier in principle a traffic resistant to monetization.

TO THE CRYPTO-INVESTORS

The market of a mining of many cryptocurrencies was flooded by huge farms. For example, about 80% of capacities of a mining of cryptocurrency of Bitcoin [is in China](#), what forces alternative currencies to pass from the principle of Proof-of-Work to other principles of work.

Game Machine gives the chance to gamers to develop a really decentralized network of miner worldwide where justice and division of an award will not depend on greed and financial solvency of a miner.

TO THE TRADER

Considering model of a turn of Gamefuel coin and interest in a coin among different communities it is possible to predict positive behavior of a coin at the exchanges. As the coin will be brought to the exchange, the trader will have all opportunities for carrying out various operations with it for enhancement of own capital. To buy tokens on start at more favorable price, and then to invest in IGO.



TARAS DOVGAL

CEO

- 6 years of experience of development of highload-projects;
- CEO of the interactive agency hakk (Volvo, Tallink Silja Line, Neste, etc.);
- CEO Offly (IIDF);
- CEO Subtender (aggregator of construction tenders);
- CEO Teammates (a mobile application for CS:GO community with a conclusion of objects for performance of advertizing offer)
- Computer Science Center (specialty Software Engineer), IIDF, SUMIT #5
- Participant of the correspondence accelerator of IIDF



ALEXANDR ISAEV

COO

- 5 years of experience of project management in IT;
- COO of the interactive agency Hakk;
- CMO Offly (IIDF);
- CMO Subtender;
- CMO Teammates;
(participant of the correspondence accelerator of IIDF)



MARIA SUVORINA

Marketing Business Development

- 7 years of experience in the industry of computer and mobile games;
- 6 years of experience of management of marketing in promotion of game projects (Suricate Games, TMA, AminiLab);
- 3 years of experience of management of game products and their development (Sdubbo Games, Infoshell, Sphere Productions);
- Experience of construction international near - game service



ANDREY VOLKOV

Lead Server Developer

- Experience in the IT industry more than 6 years;
- Successful start of own game projects and decisions for game servers for the game GTA: San Andreas;
- Imagine Cup 2014 – a runner for mobile platforms on the basis of Unity;
- Participated in development of a startup of Jobbing.



NIKOLAY MUDRY

Lead Client Developer

- 5 years experience of development in enterprise and game to development
- Participant ¼ finals of NEERC 2014
- Took the second place on Solution lab 2016



KONSTANTIN KARPOV

Marketer

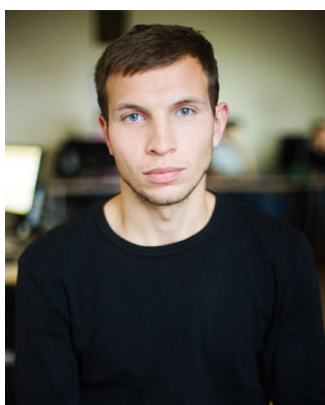
- 5 years of experience in the sphere of internet marketing
- Holding advertising Internet campaigns for large brands, such as Neste, Novoselye Group and etc.
- Participation in internet marketing of other projects coming to ICO



YAROSLAV SHEKHVATOV

Java Developer

- 4 years of enterprise of development
- Participated in development and deployment of IT-systems of management and control for the pharmacological sector



TIMUR DZHUMAGAZIYEV

PHP Developer

- 6 years of experience of development;
- Participated in development and deployment of IT-systems of management and control for the pharmacological sector;
- Created own qualifier for the parser of web pages on search queries on the basis of neural networks.
- Experience in the financial sector (Sberbank)



VLADISLAVPOCHUKALIN

Art Director / Designer

- 8 years experience of design and design of interfaces
- Designed and created design for more than 50 projects
- The founder of a startup of Subtender, was engaged in design and marketing of the project.

DISCLAIMER AND RISKS DECLARATION

We understand the concerns that potential investors may have regarding GAME MACHINE project and its development. You can find out our risks declaration in the following document:

NOTICE TO RESIDENTS OF THE UNITED STATES

GAME MACHINE REPRESENTS THAT TO ITS BEST KNOWLEDGE AND UNDERSTANDING THE OFFER AND OFFERING OF THESE GMIT TOKENS DOES NOT CONSTITUTE AN OFFER AND OFFERING OF A SECURITY OR OF GAMBLING CHIPS. IN CASE OF DOUBT, BE ADVISED THAT THE OFFER AND OFFERING OF THE GMIT TOKENS HAS NOT BEEN REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER THE SECURITIES LAWS OF CERTAIN STATES. THESE GMIT TOKENS MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED EXCEPT AS PERMITTED UNDER THE ACT AND APPLICABLE STATE SECURITIES LAWS PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT OR AN EXEMPTION THEREFROM.

NOTICE TO RESIDENTS OF CANADA

GAME MACHINE REPRESENTS THAT TO ITS BEST KNOWLEDGE AND UNDERSTANDING THE OFFER AND OFFERING OF THESE GMIT TOKENS DOES NOT CONSTITUTE AN OFFER AND OFFERING OF A SECURITY OR OF GAMBLING CHIPS. IN CASE OF DOUBT, BE ADVISED THAT UNLESS OTHERWISE PERMITTED UNDER SECURITIES LEGISLATION, THE HOLDER OF THIS GMIT TOKEN MUST NOT TRADE THE GMIT TOKEN BEFORE THE DATE THAT THE ISSUER BECOMES A REPORTING ISSUER IN ANY PROVINCE OR TERRITORY.

NOTICE TO RESIDENTS OF CHINA

GAME MACHINE REPRESENTS THAT TO ITS BEST KNOWLEDGE AND UNDERSTANDING THE OFFER AND OFFERING OF THESE GMIT TOKENS DOES NOT CONSTITUTE AN OFFER AND OFFERING OF A SECURITY OR OF GAMBLING CHIPS. THE GMIT TOKENS ARE NOT BEING OFFERED OR SOLD AND MAY NOT BE OFFERED OR SOLD, DIRECTLY OR INDIRECTLY, WITHIN THE PEOPLE'S REPUBLIC OF CHINA (FOR SUCH PURPOSES, NOT INCLUDING THE HONG KONG AND MACAU SPECIAL ADMINISTRATIVE REGIONS OR TAIWAN), EXCEPT AS PERMITTED BY THE SECURITIES AND OTHER LAWS AND REGULATIONS OF THE PEOPLE'S REPUBLIC OF CHINA

NOTICE TO RESIDENTS OF THE UNITED KINGDOM

GAME MACHINE REPRESENTS THAT TO ITS BEST KNOWLEDGE AND UNDERSTANDING THE OFFER AND OFFERING OF THESE GMIT TOKENS DOES NOT CONSTITUTE AN OFFER AND OFFERING OF A SECURITY OR OF GAMBLING CHIPS. IN CASE OF DOUBT, BE ADVISED THAT IN THE UNITED KINGDOM THIS DOCUMENT IS BEING DISTRIBUTED ONLY TO, AND IS DIRECTED ONLY AT (AND ANY INVESTMENT ACTIVITY TO WHICH IT RELATES WILL BE ENGAGED ONLY WITH): (i) INVESTMENT PROFESSIONALS (WITHIN THE MEANING OF ARTICLE 19(5) OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (FINANCIAL PROMOTION) ORDER 2005 AS AMENDED (THE "FPO")); (ii) PERSONS OR ENTITIES OF A KIND DESCRIBED IN ARTICLE 49 OF THE FPO; (iii) CERTIFIED SOPHISTICATED INVESTORS (WITHIN THE MEANING OF ARTICLE 50(1) OF THE FPO); AND (iv) OTHER PERSONS TO WHOM IT MAY OTHERWISE LAWFULLY BE COMMUNICATED (ALL SUCH PERSONS TOGETHER BEING REFERRED TO AS "RELEVANT PERSONS"). THIS DOCUMENT HAS NOT BEEN APPROVED BY AN AUTHORISED PERSON. ANY INVESTMENT TO WHICH THIS DOCUMENT RELATES IS AVAILABLE ONLY TO (AND ANY INVESTMENT ACTIVITY TO WHICH IT RELATES WILL BE ENGAGED ONLY WITH) RELEVANT PERSONS. THIS DOCUMENT IS DIRECTED ONLY AT

RELEVANT PERSONS AND PERSONS WHO ARE NOT RELEVANT PERSONS SHOULD NOT TAKE ANY ACTION BASED UPON THIS DOCUMENT AND SHOULD NOT RELY ON IT. IT IS A CONDITION OF YOU RECEIVING AND RETAINING THIS DOCUMENT THAT YOU WARRANT TO THE COMPANY, ITS DIRECTORS, AND ITS OFFICERS THAT YOU ARE A RELEVANT PERSON.

GAME MACHINE: Risks Factors and Security Measures

We understand the concerns of our existing and potential investors regarding problems and risks that Game machine may face during its development. There are some of these risk factors :

Our products are highly technical and may contain undetected software bugs or hardware errors, which could manifest in a way that could seriously harm our reputation and our business. These bugs and errors can manifest in any number of ways in our products, including through diminished performance, security vulnerabilities, malfunctions, or even permanently disabled products. We have a practice of rapidly updating our products to fix these bugs. Some errors in our products may be discovered only after a product has been used by users, and may in some cases be detected only under certain circumstances or after extended use.

Our users may increasingly copy portfolio allocation directly to their broker instead of through Game Machine Platform to avoid the fees, which may negatively affect our revenue and seriously harm our business.

To avoid this, we decided to limit the access to our main and most successful product - AI for Stock Market. Only TOP 200 people after the Token Sale will have access to it. To protect our products for Currency and Crypto-Currency Markets we decided to set up a minimum amount of GMIT tokens for access to be granted.

If our security is compromised or if our platform is subject to attacks that prevent or thwart our users' ability to access our products and services, our users and partners may cut back on or stop using our products and services altogether, which could seriously harm our business. Our efforts to protect the information that our users possess, may be unsuccessful due to the actions of third parties, software bugs, or other technical malfunctions, employee error or malfeasance etc. In addition, third parties may attempt to fraudulently induce employees or users to disclose information in order to gain access to our data or our users' data. If any of these events occurs, our or our users' information could be accessed or disclosed improperly.

Unfavorable media coverage could seriously harm our business.

If we receive a high degree of media coverage globally, unfavorable publicity regarding us, for example, our privacy practices, product changes, product quality, litigation, or regulatory activity, or regarding the actions of our partners or our users, this could seriously harm our reputation. Such negative publicity could also adversely affect the size, demographics, engagement, and loyalty of our user base and result in decreased revenue or slower user growth rates, which could seriously harm our business.

We may be subject to regulatory investigations and proceedings in the future, which could cause us to incur substantial costs or require us to change our business practices in a way that could seriously harm our business.

It is possible that a regulatory inquiry might force us to change our policies or practices. And were we to violate existing or future regulatory orders or consent decrees, we might incur substantial monetary fines and other penalties that could seriously harm our business.

We have a short operating history and a new business model, which makes it difficult to evaluate our prospects and future financial results and increases the risk that we will not be success-

ful.

We began commercial operations in 2016 and began generate profit in 2017. We have a short operating history and a new business model, which makes it difficult to effectively assess our future prospects. Accordingly, we believe that investors' future perceptions and expectations, which can be idiosyncratic and vary widely, and which we do not control, will affect our token price.

Our business model is based on promotes and develops new technologies in the field of game productivity, blockchain and cryptocurrencies. Particularly, Game Machine is creating a global open ecosystem for the game industry on the basis of blockchain technology, with the aim to provide a unified technological platform for gamers, developers and advertisers to exchange their services and digital goods amongst each other with the aid of a smart-contract based digital goods created by Game Machine. You should consider our business and prospects in light of the challenges we face, including the ones discussed in this section.

We develop and will be developing our products and services in partnership with gamemakers.

The loss of one or more of our key personnel, or our failure to attract and retain other highly qualified personnel in the future, could seriously harm our business.

We currently depend on the continued services and performance of our key personnel, including , CEO. As we continue to grow, we cannot guarantee we will continue to attract the personnel we need to maintain our competitive position. In particular, we intend to hire a significant number of engineers, game maker , it developers and mathematicians, and we expect to face significant competition in hiring them. As we mature, the incentives to attract, retain, and motivate employees provided by our Token Sale gains or by future arrangements, such as through cash bonuses, may not be as effective as in the past. If we do not succeed in attracting, hiring, and integrating excellent personnel, or retaining and motivating existing personnel, we may be unable to grow effectively and our business could be seriously harmed.

We have broad discretion in how we may use the net proceeds from our Token Sale, and we may not use them effectively.

We will use net proceeds that we receive from our Token Sale accordingly to our mission - constantly increasing accuracy of predictions to improve our investment products performance. Our efforts may ineffective due to poor management, regulatory investigations, and other problems. We may use a portion of the net proceeds to acquire complementary businesses, products, services, or technologies. We may also spend or invest these proceeds in a way with which our tokenholders disagree. If our management fails to use these funds effectively, our business could be seriously harmed.

If we are unable to protect our intellectual property, the value of our brand and other intangible assets may be diminished, and our business may be seriously harmed.

If we need to license or acquire new intellectual property, we may incur substantial costs. We aim to protect our confidential proprietary information, in part, by entering into confidentiality agreements and invention assignment agreements with all our employees, consultants, advisors, and any third parties who access or contribute to our proprietary know-how, information, or technology. We also rely on trademark, copyright, patent, trade secret, and domain-name-protection laws to protect our proprietary rights. We have filed various applications to protect aspects of our intellectual property, which could require significant cash expenditures. However, third parties may knowingly or unknowingly infringe our proprietary rights, third parties

may challenge proprietary rights held by us, and pending and future trademark and patent applications may not be approved. In addition, effective intellectual property protection may not be available in every country in which we operate or intend to operate our business. In any of these cases, we may be required to expend significant time and expense to prevent infringement or to enforce our rights. Although we have taken measures to protect our proprietary rights, there can be no assurance that others will not offer products or concepts that are substantially similar to ours and compete with our business. We include open-source software in our products. From time to time, we may face claims from third parties claiming ownership of, or demanding release of, the open-source software or derivative works that we have developed using such software, which could include our proprietary source code, or otherwise seeking to enforce the terms of the applicable open-source license. These claims could result in litigation and could require us to make our software source code freely available, seek licenses from third parties to continue offering our products for certain uses, or cease offering the products associated with such software unless and until we can re-engineer them to avoid infringement, which may be very costly. If we are unable to protect our proprietary rights or prevent unauthorized use or appropriation by third parties, the value of our brand and other intangible assets may be diminished, and competitors may be able to more effectively mimic our service and methods of operations. Any of these events could seriously harm our business.