**Justification of economic efficiency**

**Technical description.**

The integration of blockchain technology into various industries has paved the way for groundbreaking innovations, particularly in gaming. Blockchain’s decentralized nature, coupled with its ability to secure and transparently manage digital assets, has revolutionized how games are developed and monetized. This project focuses on creating a blockchain-based gaming system that incorporates the Play-to-Earn (P2E) model, offering players real ownership of in-game assets through Non-Fungible Tokens (NFTs).

The proposed game combines elements of RPG-roguelike and platformer genres, providing an engaging experience where players earn unique NFTs as rewards for achieving milestones, such as defeating bosses or completing levels. Unlike traditional games, where in-game items are confined to a single ecosystem, this project leverages blockchain to tokenize these assets, allowing players to trade, sell, or utilize them across different platforms.

The system is built on Binance Smart Chain (BSC), chosen for its low transaction fees and high processing speeds. Tools like Moralis, Alchemy, and MetaMask simplify blockchain integration, enabling seamless wallet authentication, transaction management, and NFT handling. Additionally, IPFS, supported by Pinata, ensures the secure and decentralized storage of NFT metadata, enhancing transparency and reliability.

This project aims to create a robust digital economy within the game, fostering player engagement and offering real-world value for in-game achievements. By merging innovative blockchain solutions with immersive gameplay, the project sets a new standard for decentralized gaming systems.

**Marketing analysis**

Technical description. In recent years, interest in NFT and blockchain games has increased among young audiences, but many users remain wary due to fraud cases. The main competitors are international projects with NFT economy, as well as local developers focused on mobile games.

The target audience includes young people aged 18-35 who are actively interested in video games and cryptocurrencies. These are gamers ready to invest in in-game items and play-to-earn mechanics, as well as users looking for new ways to monetize their gaming experience. To successfully enter the market, it is necessary to consider the strengths and weaknesses of the project, as well as possible threats and prospects. Among the key advantages, we can highlight the unique blockchain model with NFT assets, the possibility of earning money for players, as well as a decentralized economy that ensures transparency of transactions. However, high competition among P2E games, mistrust of NFT due to fraudulent schemes, as well as possible technical difficulties with blockchain integration cannot be ignored. Opportunities include growing interest in Web3 in Kazakhstan, the development of the crypto and gaming community, and the potential for cooperation with local IT companies and bloggers. At the same time, strict government regulations of the cryptocurrency market, unstable cryptocurrency prices, and the difficulty of attracting players without a large marketing budget may stand in the way.

Promoting the game will require a comprehensive marketing strategy. One of the key tools will be working with gaming and crypto communities through platforms like Telegram, Discord, and Reddit. Influencer marketing will play an important role: cooperation with popular bloggers and streamers will help quickly attract the attention of the audience. To increase user engagement, beta testing and loyalty programs are planned, where players will be able to get early access and bonuses for inviting friends. Further expansion of the audience will be ensured by advertising campaigns in social networks (Facebook, Instagram, TikTok), contextual advertising in Google Ads, as well as participation in offline events and eSports tournaments.

**Marketing plan**

The largest part of the budget, about 1,300,000 tenge, is allocated for digital marketing. Targeted advertising on Instagram, Facebook, TikTok and VK will attract an audience of 18-35 years old from Kazakhstan, Russia and the CIS countries, which will require 700,000 tenge. Contextual advertising through Google Ads will ensure the game's visibility in search and on YouTube, for which 300,000 tenge is allocated. It is also important to use influencer marketing, so 300,000 tenge is spent on paying YouTube and Twitch streamers and bloggers who will present the game to their audience.

Content marketing is an important promotion tool, for which 500,000 tenge is allocated. Creating an advertising trailer will cost 250,000 tenge, it will be used in advertising campaigns and social networks. The remaining amount will go towards active management of Instagram, TikTok and Telegram, where game news, gameplay fragments and engaging content will be published.

PR and community management will require 400,000 tenge. To form a gaming community, an official server will be launched in Discord, which will cost 100,000 tenge. Various competitions and raffles of in-game NFTs and bonuses will require 150,000 tenge, which will help attract new users and increase the engagement of current ones. Also, 150,000 tenge will be allocated for publications in specialized gaming media to provide additional information support for the project.

Offline advertising and events will require 300,000 tenge. Advertising banners and stands with a demonstration of the game will be installed in computer clubs, for which 100,000 tenge is allocated. To increase interest in the game, it is planned to organize a small online tournament among the first players with a prize fund, which will require 200,000 tenge.

Thus, the total budget of the marketing campaign is 2,500,000 tenge. The strategy covers key digital and traditional promotion channels, focusing on attracting the first 10,000 players, forming an interested community and creating sustainable interest in the game through a combination of advertising, content and active interaction with the audience.

**Calculation of economic efficiency**

These costs cover areas such as tools, software and hosting (table 1.1).

Table 1.1 – Development and Tools

|  |  |  |  |
| --- | --- | --- | --- |
| № | Expense item | Price (KZT) | One-time / per month |
| 1 | GameMaker Studio (license) | 22500 | One-time |
| 2 | Plugins and assets for GameMaker Studio | 50,000 – 250,000 | One-time |
| 3 | SFX, music and sound | 150,000 – 500,000 | One-time |
| 4 | Data storage server | 15,000 – 50,000 | Per month |
| 5 | Hosting IPFS (Pinata, Infura) | 10,000 – 25,000 | Per month |
| 6 | BSC-transactions (NFT, in-game economy) | 25,000 – 100,000 | One-time |

Table 1.1 continued

|  |  |  |  |
| --- | --- | --- | --- |
| 7 | Marketing (advertising budget, PR, trailer, streamers) | 2,500,000 | One-time |
| 8 | Equipment costs (system units x5, monitors x5, computer mice x5, network filters x5, printer) | 2,980,000 | One-time |
| 9 | Total (minimum) | 5,730,000 + 50,000 per month |  |

Total costs for equipment: 5,730,000 KZT (+50,000 per month)

Expenses for the extended team and their salaries for 6 (six) months (table 1.2 – team and salaries)

Table 1.2 – Team and salaries

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| № | Specialists | Number of people | Average salary (KZT/month.) | Total salary (KZT) |
| 1 | Game Designer | 1 | 400000 | 2400000 |
| 2 | Game Developer | 1 | 450000 | 2700000 |
| 3 | Blockchain Developer | 1 | 500000 | 3000000 |
| 4 | 2D artist | 1 | 350000 | 2100000 |
| 5 | Musician | 1 (freelance) | 250000 (one-time) | 250000 |
| 6 | Techwriter | 1 | 250000 | 1500000 |
| 7 | Total on team (6 month.) | - | - | 11950000 KZT |

Total gross payroll: 1,950,000 KZT per month or 11,700,000 for 6 (six) months and 250,000 one time payment.

Next, it is necessary to calculate the amount of mandatory payroll deductions, which includes: social deductions, social tax and OSMS.

Pension Fund – 10% of gross salary = (10% of 1,950,000) = 195,000 KZT.

Social contributions – 5% of (gross salary – pension fund) = 0.05 × 1,755,000 = 87,750 KZT.

Health insurance (OSMS) – 3% of gross salary = (3% of 1,950,000) = 58,500 KZT.

Social tax – 11% of (gross salary – pension – OSMS from employee – social contributions) = 11% of (1950000 – 195000 – 87750 – 58500) = 176962.5 KZT.

Total mandatory contributions = 87,750 + 58,500 + 176,962.5 = 323,212.5 KZT.

Total labor costs = 1,950,000 + 323,212.5 = 2,272,212.5 KZT.

Total gross payroll for one month after 6 (six) months: 1,350,000 KZT.  
 Next, it is necessary to calculate the amount of mandatory payroll deductions, which includes: social deductions, social tax and OSMS.

Pension Fund – 10% of gross salary = (10% of 1,350,000) = 135,000 KZT.

Social contributions – 5% of (gross salary – pension fund) = 0.05 × 1,215,000 = 60,750 KZT.

Health insurance (OSMS) – 3% of gross salary = (3% of 1,350,000) = 40,500.

Social tax – 11% of (gross salary – pension – OSMS for employee – social contributions) = 11% of (1,350,000 – 135,000 – 40,500 – 60,750) = 0.11 × 1,113,750 = 122,512.5 KZT.

Total mandatory contributions = 60,750 + 40,500 + 122,512.5 = 223,762.5 KZT.

Total labor costs = 1,350,000 + 223,726.5 = 1,573,726.5 KZT

Expenses related to rent

We also have expenses related to rent, electricity, internet and purchasing necessary office supplies (table 1.3 – rent expenses)

Table 1.3 - Rent expenses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| № | Item | Qty | Price (KZT) | Total (KZT) |
| 1 | Office rent | 30 m² | 6000 | 180 000 |
| 2 | Electricity | ~250 kWh | 28.07 incl. VAT | 7017.5 |
| 3 | Electricity | 0,5106 m3 | 325.66 incl. VAT | 166.28 |
| 4 | Internet | Minimal package | 5990 | 5990 |
| 5 | Miscellaneous expenses | – | 12000 | 12000 |
| 6 | Total per month | – | – | 205173.78 |

Summarizing total costs:

Development and Tools - 3,730,000 (or 3,780,000 with hosting) KZT;

Total labor costs - 2,272,212.5 KZT;

Rent expenses – 205,173.78 KZT

Total for first month: 5,780,000 + 2,272,212.5 + 205,173.78 = 6,257,386.28 KZT.

Total costs for first year: 5,730,000 + (2,272,212.5 \* 6) + (1,573,726.5 \* 6) + (205,173.78\*12) + (50,000 \* 12) = 31,567,719.36 KZT. (Marketing, development and tools + Total labor cost with full team on 6 month + Total labor cost with shortened team on 6 month + Rent + Hosting)

For second, third and etc: (1,573,726.5\*12)+(50,000\*12)+(205,173.78\*12) = 21,946,803.36 KZT. (Total labor cost with shortened team on 12 months + Hosting on 12 months + Rent on 12 months)

In the first year, the project focuses on building its user base, with the initial three months dedicated to active audience acquisition and the following nine months contributing to steady revenue growth. The estimated income for the first year is 18,000,000 KZT, which represents around 55% of the projected full revenue potential of 33,000,000 KZT annually, once the user base stabilizes.

The key expenses during the first year include one-time costs for marketing (2,500,000 KZT) and equipment procurement (3,230,000 KZT). Additionally, recurring monthly expenses consist of labor costs (2,272,212.5 KZT for the first 6 months with the full team and 1,573,726.5 KZT after team downsizing), office rent (205,173.78 KZT per month), and service hosting (50,000 KZT per month). These components bring the total expenses for the first year to 27,610,807.78 KZT, resulting in a net loss of 9,610,807.78 KZT. The cost-efficiency for this stage is approximately -0.35, which is a common scenario for early-stage startup projects with high setup and operational costs.

By the second year, the project achieves operational stability, maintaining its full earning potential at 33,000,000 KZT annually. Thanks to the downsized team and controlled recurring costs, total annual expenses are reduced to 21,946,803.36 KZT, resulting in a solid net profit of 11,053,196.64 KZT. This reflects a strong financial rebound and a transition to sustainable profitability with an efficiency ratio of 0.5.

From the third year onward, the revenue and expenses are projected to remain stable, ensuring an annual net profit of 12,401,765 KZT. Considering the initial investment of 6,230,000 KZT, the full payback period is expected to be completed by the end of the second year.

**Profit and Loss statement for 5 years**

For the P&L, we assume that in year 3 and beyond, revenues and expenses will be similar to year 2: up to 1000 paying users per month (P&L – table 1.4).

Table 1.4. – P&L

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Income (KZT)** | **Expenses (KZT)** | **Profit (KZT)** |
| 1 | 18,000,000 | 27610808 | -9610808 |
| 2 | 33,000,000 | 21946804 | 11053196 |
| 3 | 33,000,000 | 21,946,804 | 11,053,196 |
| 4 | 33,000,000 | 21,946,804 | 11,053,196 |
| 5 | 33,000,000 | 21,946,804 | 11,053,196 |

This table represents an estimated financial overview of the project over five years, showing that despite an initial loss in year 1, the project becomes profitable from the second year onward.

**Corporate Income Tax (CIT)**

CIT is 20% of profit. In the first year there is a loss, so no tax is paid. In subsequent years, the tax is calculated based on profit (table 1.5 – CIT)

Table 1.5. – CIT

|  |  |  |
| --- | --- | --- |
| **Year** | **Profit (KZT)** | **CIT (20%) (KZT)** |
| 1 | -3,382,985.27 | 0 |
| 2 | 11053196 | 2210640 |
| 3 | 11,053,196 | 2,210,639.2 |
| 4 | 11,053,196 | 2,210,639.2 |
| 5 | 11,053,196 | 2,210,639.2 |

**Value Added Tax (VAT)**

New VAT registration threshold on 2025 year:

1 MRP = 3,932 KZT,

20,000 MRP = 78,640,000 KZT.

Our income (33,000,000 KZT) does not exceed this threshold, so VAT is not charged.

**Forecast Cash Flow Statement (Cash Flow) for 5 years**

In the first year of the project launch, the expected income is 18,000,000 tenge, but expenses significantly exceed this amount - 29,610,808 tenge. This leads to a negative net cash flow of -11,610,808 tenge. The accumulated cash flow also remains negative and is -11,610,808 tenge, which is typical for startups with high initial investments.

From the second year, the project reaches a stable level: annual income reaches 33,000,000 tenge, and expenses are reduced to 24,157,444 tenge due to optimization of the team and operating expenses. As a result, the annual net cash flow is 8,842,556 tenge, which allows already in the second year to reduce the accumulated loss to -2,768,252 tenge.

Starting from the third year, the indicators remain stable: the net cash flow remains at the level of 8,842,556 tenge per year. This allows the accumulated flow to go into the plus in the third year (6,074,304 tenge), and by the fifth year it reaches 23,759,416 tenge.

Financial analysis shows that the internal rate of return (IRR) is 53%, which significantly exceeds the discount rate of 17%. The net present value of the project (NPV) is 9,495,351.81 tenge, which confirms its investment attractiveness and sustainability in the long term. Despite losses in the first year, the project achieves self-sufficiency in the third year and ensures stable profitability in subsequent years. (Table 1.6 – Cash Flow).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Indicator (KZT) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| Income | 18 000 000 | 33 000 000 | 33 000 000 | 33 000 000 | 33 000 000 |
| Outcome | 31 567 720 | 24 157 444 | 24 157 444 | 24 157 444 | 24 157 444 |
| Net cash flow | - 13 867 720 | 8 842 556 | 8 842 556 | 8 842 556 | 8 842 556 |
| Cumulative flow | - 13 867 720 | - 5 025 164 | 3 817 392 | 12 659 948 | 21 502 504 |

Table 1.6 – Cash Flow