ITAM

ITAM, The Middle earth a place where blockchain and our reality connect

Whitepaper

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1. Mobile Games Market and Problem Recognition

1.1 Market Size

The games research specialist NewZoo's "The Global Games Market Report 2018"[1] study predicted that the global market size of the games market in 2018 would reach approximately $138 billion, and the smartphone/mobile game industry specifically would possess 41%, approximately $56.4 billion, of the total market size.
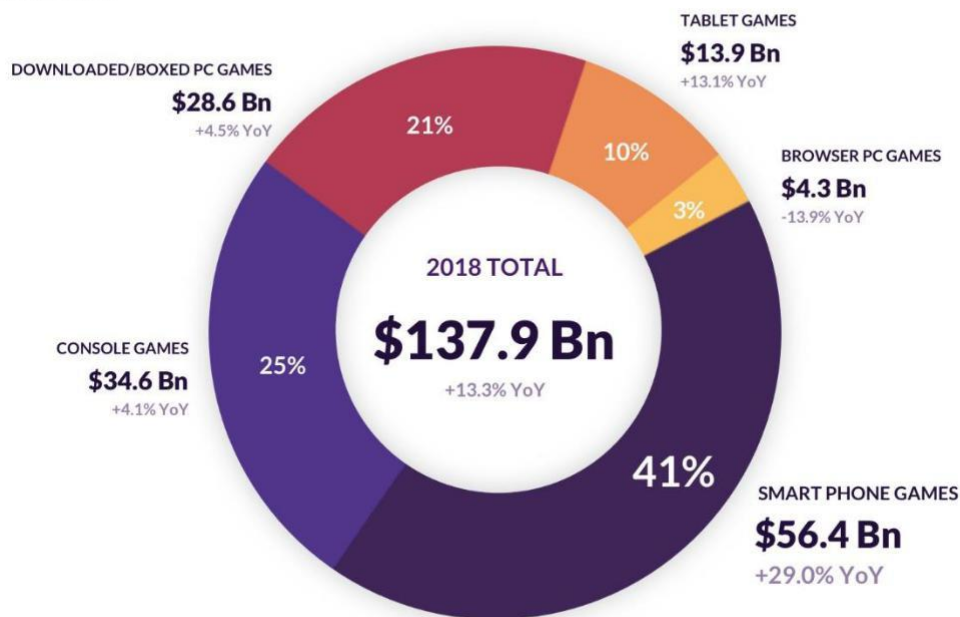
Figure 1. The Global Games Market

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[1] https://newzoo.com/solutions/standard/market-forecasts/global-games-market-report

As Figure 2 shows, among various types of games, the smartphone games market is expected to most increase, by the year 2021, it is forecasted to record about $88.2 billion, or 49%, of the total market size.

SEGMENT BREAKDOWN OF GLOBAL GAMES REVENUES

TOWARD 2021

- BROWSER PC GAMES
- TABLET GAMES
- DOWNLOADED/BOXED PC GAMES
- CONSLE GAMES
- SMART PHONE GAMES

	2017	2018	2019	2020	2021
Total	$121.7 Bn	$137.9 Bn	$151.9 Bn	$165.9 Bn	$180.1 Bn
Browser PC Games	4%	3%	2%	2%	1%
Tablet Games	10%	10%	10%	10%	10%
Downloaded/Boxed PC Games	23%	21%	20%	19%	18%
Consle Games	27%	25%	24%	22%	22%
Smart Phone Games	36%	41%	44%	47%	49%

Figure 2. Segment Breakdown of Global Games Revenues, Toward 2021 by NEWZOO

1.2 Problem Recognition

Mobile games are not restricted by time or space limitations and can be enjoyed by using the benefit of internet-accessible smartphones. Thus, it has advantages such as convenience, simplicity, and mobility, as well as persistence, which combines all the benefits and allows long-term enjoyment of games.
However, both the game users and game companies are exposed to problems that cannot be solved without a new paradigm shift.

1.2.1 Game Users

Ownership of In-Game Digital Assets

The vast majority of mobile games offer free play but require either a great amount of time and effort or monetary payments for the user to acquire specific content and/or digital assets. It has become common for mobile games to increase the Daily Active Users ("DAU") and in-game stay time, but all of the time, effort, and money invested into the games to build characters and/or accounts are merely just data that remains within the games' realm and aren't acknowledged externally. Over 99% of the current mobile games restrict the trading of items and accounts as a regulation. Even in games that don't have betting, means of dividend, or deals with game money or items acquired by chance, trading items between users are also disabled in most games by their terms and policy.

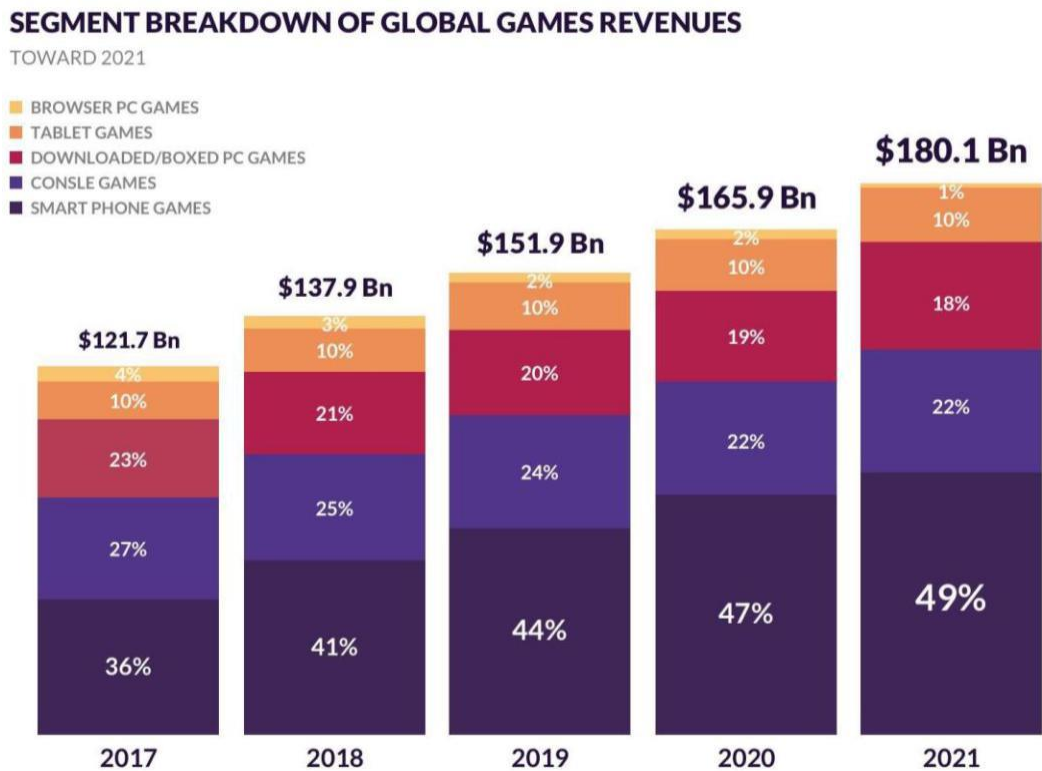As a result, game accounts are implicitly traded through private communities and item brokers in order to trade digital assets. This is a very risky and unsafe method. Because this is regulated as illegal in their Terms and conditions, the game companies do not have responsibilities regarding this. There are cases where the seller sends their item or account, but the buyer doesn't send the money, or the buyer sends the money but does not receive the item or the account information, or even receives a totally different item. There are even cases of utilizing the bugs of the game, or frauds pretending to be the operator of the game.

Unfairness Due to Centralization of Games

Majority of online games, including mobile games, try to induce competition amongst users and attempt to get users to spend more time playing games. However, there are cases of game operators/specific users maliciously creating/copying unique items and, thus, dominating the competition system of the game. Furthermore, there are incidents of probability manipulation when acquiring items, inflicting negative user experience for honest participants.

1.2.2 Game Developers

Profit Imbalances of Game Companies

The fee that Store platforms charge, which every mobile game has to endure, on App Stores such as Google Play and Apple App Store is 30%. 30% of the revenue is not a small number, and traditional Store platforms have gained massively with these fees. For small and medium-sized game companies, their main focus is on developing the game; thus, they cannot invest a lot of resources on marketing.

Because of the inevitable profit imbalances due to the limited number of game users, instead of focusing on providing the utmost entertainment for the gamers through creative ideas, more efforts are made to encourage game users to spend more money on the games. We cannot focus on already proven revenue models, such as random digital asset selection, which are also controversial amongst the small and medium-sized game developers. There are many motivated game developers that are concentrating on providing entertaining games. There needs to be a new market and ecosystem where these game developers can make greater profits than merely the in-game ad revenues.

Difficulty in entering the blockchain gaming market

Game developers are very interested in new markets with blockchain technology that can provide a reliable and fair game system for game users. However, applying blockchain technology to their own games requires training or new hiring of developers by investing in separate resources for game development, knowledge and know-how by the executives, and other big investments and critical decisions. Currently, the implementation of blockchain technology is difficult and expensive. This is particularly a burden for small and medium-sized game developers.

2. ITAM

2.1 ITAM Mission and Direction

As mentioned above, ITAM is deeply aware of the issues on the current game industry and have continuously worked the past year in developing and realizing our products. As we reduced the gap between the hypothesis of the team and realistic development, we believe the uncertainty of project completion has diminished, and we at ITAM intend to write this white paper to inform our supporters on how we will provide better experiences and ecosystems for game users and game developers through blockchain technology.

Through the use of blockchain technology, we will onchain the leaderboards, achievements and challenges of games, which were not appealing to game users in 'games with centralized game servers' or 'client games without game servers,' to provide a fair and trusted game competition system and give value to the players' gameplay. Also, the unique digital assets of the game users will be recorded on a public blockchain, user's personal wallet, instead of being located only on a centralized server, which will make them more valuable and unique. This will allow the game user to have true ownership of the digital assets and enable secure trading with other users.

ITAM will also provide game developers with a rational, mutually beneficial blockchain store platform. Game developers will be able to take advantage of faster, more profitable settlements and free solutions that makes it easier to implement blockchain technology into games.

ITAM will continue to improve so that game developers can create more original blockchain games, and players can enjoy more games, ultimately creating a transparent and evolving game ecosystem.

To this end, ITAM has developed and is in the process of developing the following services and products:

2.2 Multi Blockchain service

ITAM is a blockchain gaming platform that utilizes blockchain technology to give true ownership of digital assets to users. As a service provider, we believe that it is important to give users the choice of which blockchain protocol they would like to store their hard-earned digital assets and achievements.

ITAM believe each protocol has its own unique advantages as a chain, and as service provider, we believe it is a great time to experiment with different chains and let the users themselves decide which protocol they prefer. Currently, we have chosen the EOS MainNet to be the first public blockchain protocol to be connected to the ITAM Store, but throughout the service's lifetime we will be implementing different protocols for our users.
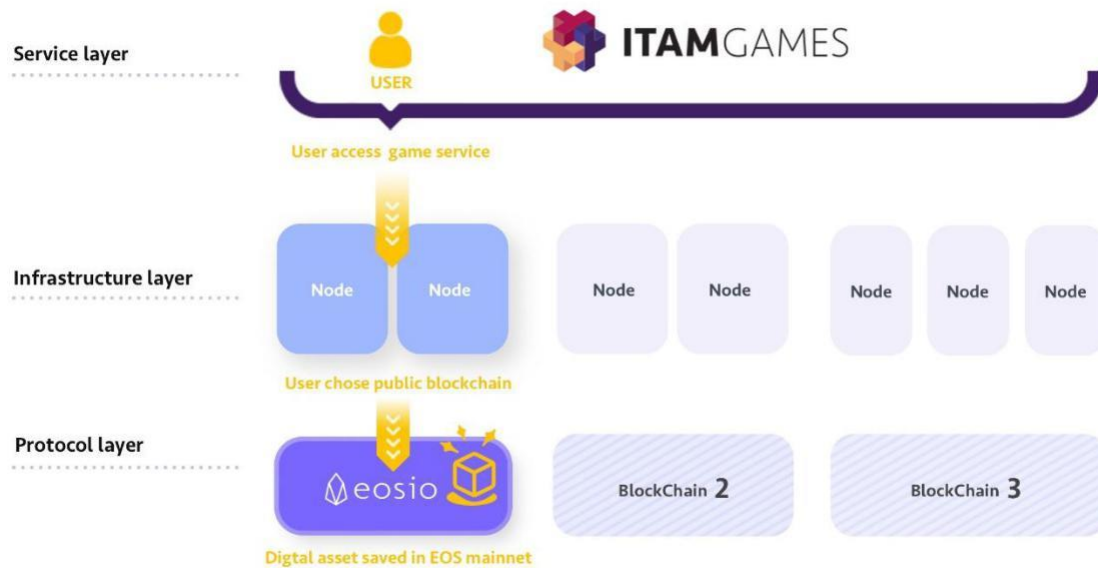
Figure 3. ITAM multiprotocol layer

2.3 ITAM Store

The ITAM Store is an app with similar UI and UX as the Google Play Store and the Apple App Store that allows users to view and access a list of mobile games that are participating on ITAM. On the ITAM Store, users can acquire and show their rankings (leaderboard), achievements, and more, acquire ITAM Non-Fungible Tokens ("ITAM NFT")s, which are in-game digital assets, for true ownership and can also exchange these digital assets.

https://itam.store
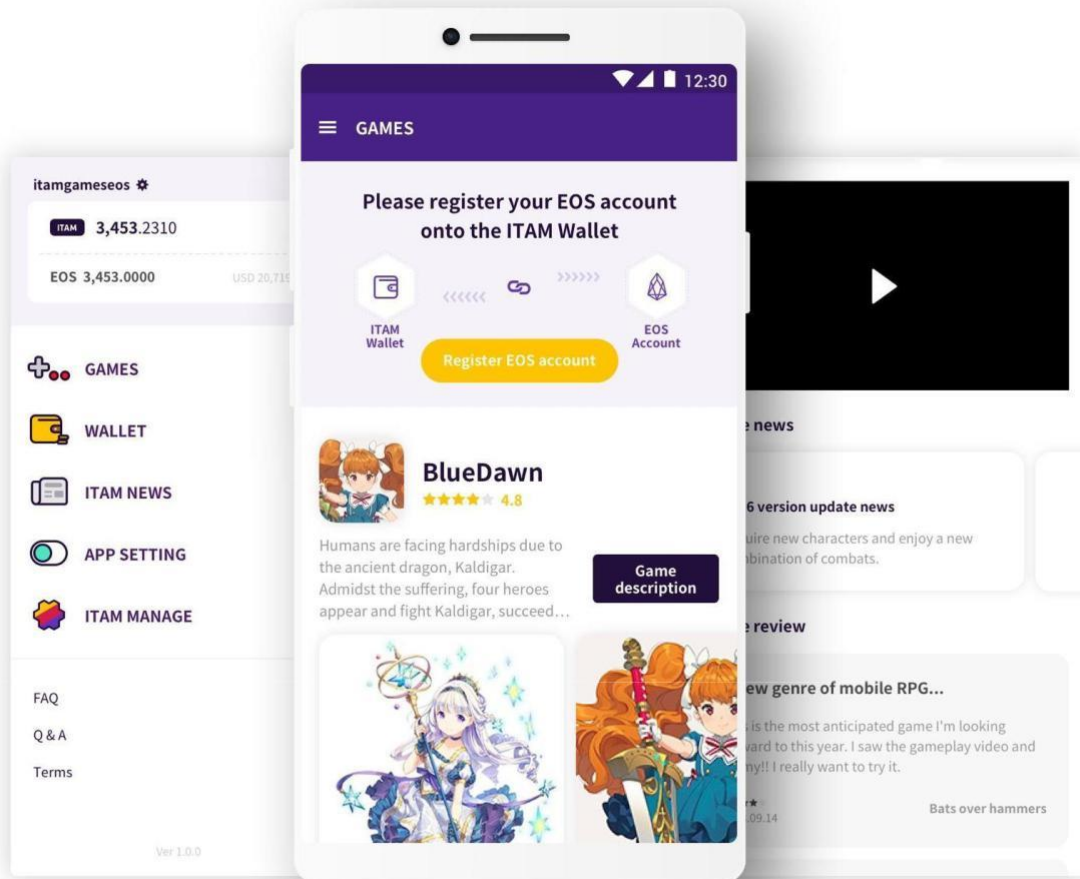
Figure 4. ITAM Store

2.4 ITAM Wallet

The ITAM Store has a built-in blockchain wallet called ITAM Wallet specialized for ITAM, which will be in a personalized area for the users. With the ITAM Wallet, users can easily access user authentication, and access proprietary information such as tokens (ITAM Tokens) and unique digital assets (ITAM NFT), user can easily login into the games without putting their private key and make transaction of cryptocurrency. For the avoidance of doubt, ITAM Wallet will not hold any fiat currencies. Using user authentication, such as fingerprint or password authentication, the ITAM Wallet includes features such as game content in-app purchase and transmission of cryptocurrencies, staking of blockchain resources and/or ITAM Tokens, and viewing/buying/selling of acquired unique digital assets.
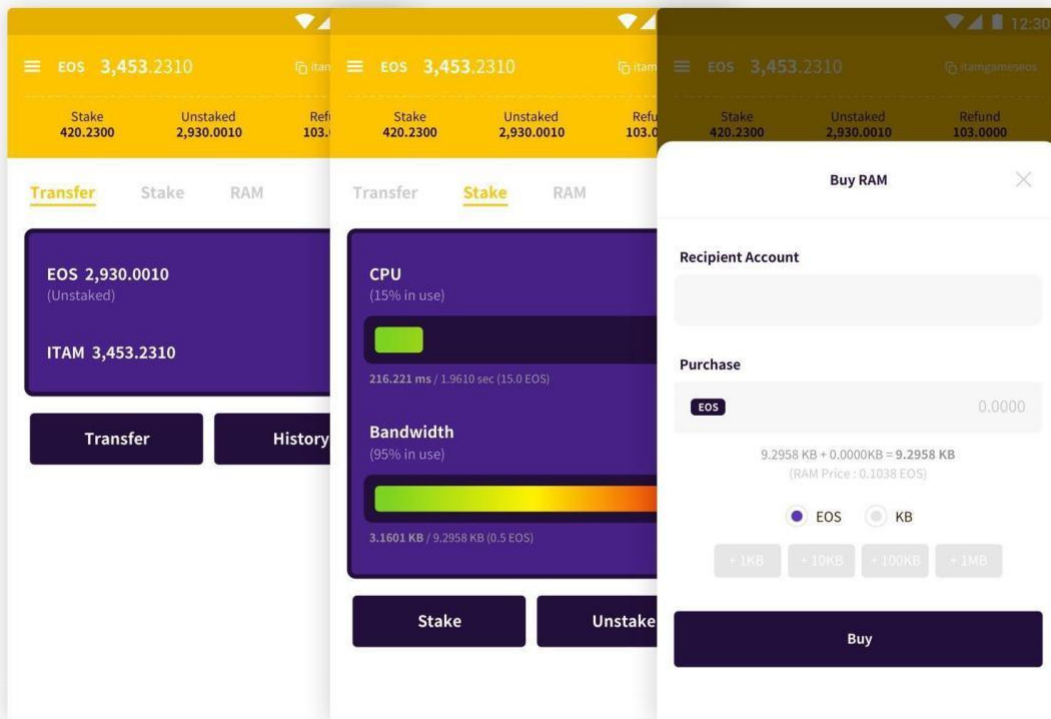
Figure 5. ITAM Wallet

2.5 ITAM NFT

As mentioned above, ITAM NFT is a non-fungible token standard for games on the ITAM Store, and tokenizes unique digital assets users acquire in-game, such as items, characters, achievements, rankings, etc. The unique digital assets are simultaneously created as ITAM NFT through the ITAM Software Development Kit ("ITAM SDK") at the time of its creation, and the history of it, such as its registration, modification, and deletion, are all recorded on the blockchain, providing users with immutability and true ownership. The ITAM NFT contract allows game developers to create 'N' number of digital assets in their games or apps. ITAM NFT allows symbol unique keys of games and/or apps, and multiple digital assets can be created under one symbol.

*More info: https://github.com/itamgames/itamgames

2.6 ITAM DADEX (Digital Asset Decentralized Exchange)

ITAM DADEX is a decentralized service that allows user to trade their acquired ITAM NFTs. Blockchain technology ensures the reliability, transparency, and integrity of trading on ITAM NFTs. ITAM DADEX will provide user-friendly UI/UX services through filter functions that sort according to the game developer's genre, price, rarity, etc. The seller may also select between a Designated Value System or an Auction System where the highest bidder for a certain duration wins the sale. Once a trading is made, the transfer of the unique digital asset and the transfer of the ITAM Token used in the trading are simultaneously and automatically placed into the appropriate mailbox/bag of the game. However, games classified as gambling are planned to be blocked on the ITAM DADEX by policy.
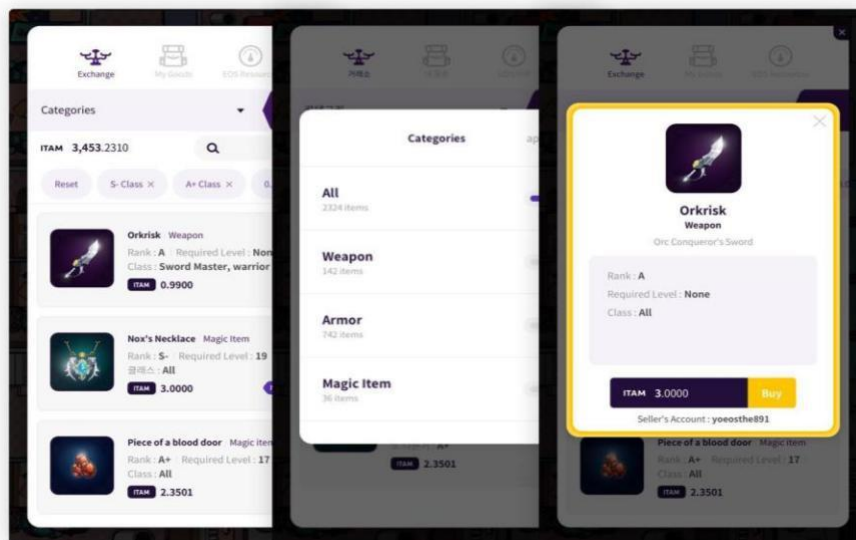
Figure 6. ITAM Digital Asset Decentralized Exchange

2.7 ITAM Market (Block Explorer)

Currently, the ITAM Team has established and is operating an EOS Full Node in order to provide better service for our user. Moreover, EOStock.io and EOScanner.io, which include essential functions needed for ITAM, have already been developed and are currently available for use. With the foundation of the block explorer EOScanner.io, ITAM.MARKET will allow anyone to easily and transparently view in-game achievements, challenges, rankings, etc. as well as the trading history, smart contract, and more of the unique digital assets in ITAM NFT form.
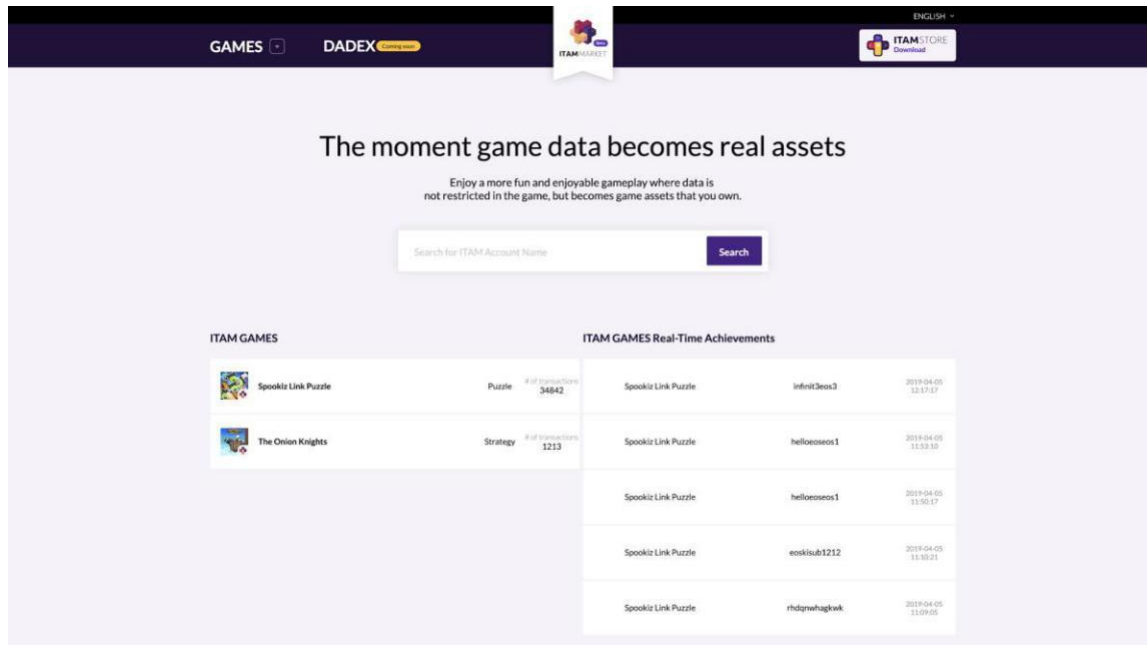
https://itam.market

Figure 7. ITAM Market

2.8 ITAM NFT Leasing Amongst Game Users

ITAM NFT, the in-game digital assets, can be lent or borrowed amongst game users. The lending user sets the period of lease and the desired fee in ITAM Token on the ITAM Store, and other users can check and borrow for the designated period to use in-game. This is protected by the smart contract and is returned to the original owner once the period is reached.

2.9 ITAM Community

The Game Community is a space that provides users to socialize among other user in addition to gameplay. A culture in which users voluntarily create and share content, such as game strategy articles, game tips, bug reports, and game operation suggestions, and fan art of specific characters, exists in the gaming realm. The ITAM Community will trigger and expand the game community by adding reward programs to game users' voluntary game content creation and sharing. This will be an important factor in maintaining the growth and health of the ITAM' ecosystem. ITAM Community is largely divided into three communities.

2.9.1 ITAM Main Community

This is a community space that aggregates platform-wide features such as news, pre-orders, game voting, etc. The Main Community will focus on information delivery, and "pre-order" and "game voting" will be structured as follows. With the "pre-order" feature, users can participate in the upcoming game launches and/or large updates on a first come, first served basis or without limitations. Users can receive rewards of ITAM tokens and/or digital assets of the pre-ordered games by agreeing to receive notifications of game releases and completing certain tasks set out by the game developer. With the "game voting" feature, the games that have democratically been recommended will be announced on a space called ITAM Featured. The voting power is designed in proportion to factors such as the activity index on ITAM and staking of ITAM Token.

2.9.2 Official Game Community

The Official Game Community is a place that provides game information to the game users, such as announcements, events, developer's notes, and scheduled updates. In addition to the basic information provided for each game, the "User Voting System" encourages active participation in the games, and also provides a democratic voice to the users. The "User Voting System" algorithm follows corresponding game contributions, and the factors that affect its power will be measured in various ways.

2.9.3 Open Community for Game Users

The game community is crucial in the long-term success of a game from a business perspective. A well-established and self-sustaining gaming community enables the gamer to engage in constant and zealous gameplay, leading to positive revenues for game developers and publishers.

Each participant in these communities is a creator and consumer of various types of content, but the creators, more specifically, have a greater role in the community and are the driving forces of action. However, although they have high contributions to the community, they do not receive compensation other than mere popularity or reputation within the community. Thus, ITAM' Open Community provides direct/indirect and actual/symbolic rewards and rights based on the user's continuous active contribution to the game and community. In addition, we aim to maximize the effects of participant-led, collective intelligence, which are the core attributes of communities.

In implementing this, we will have a community formation policy that's voluntarily created and managed by the game users, rather than a single or few community policies designated and managed by the game developers. As of now, it can be thought that there will be as many communities created as the number of users. However, the quality of the content produced and shared on a specific community will lead to the shift and movement of users onto that community, and these high-quality content and communities will be rewarded.

In operating a community, it takes time and effort to manage the various disputes, profanities, and advertisements within the community, as well as the creation and sharing of content. Thus, well-established communities can be operated as an independent community without having to rely on external sponsors such as ads or support from the game developer. Moreover, game developers can expect an ecosystem in which the cost of human labor in managing a community is mitigated and every participant benefit.

3. ITAM for Developers

3.1 ITAM SDK

ITAM SDK and the plug-in package will be provided for mobile games to easily join ITAM. By applying the ITAM SDK to their games, game developers do not have to spend development resources on technical know-how of blockchain technology. In addition, with the package, they have access to ITAM Wallet for developer linkage, registration of digital assets that can be traded in-game, marketing support tools, user analytics system, and more.

- Single Sign-on Authentication
- EOS Account Management
- Transaction/Action Whitelisting
- Bio-Authentication
- ITAM In-App Purchase
- Leaderboard, Achievement
- Digital Asset Tokenization
- Stake, RAM Interface
- PVP Tokenization
- Random generation
- Ranking, Event
- In-App Analytics Tool

Game developers can register and manage partner developers and applications through the developer's page. In addition to management tools such as registration of unique digital assets that can be traded/purchased in-app, the in-app purchase history of users can also be found on the developer's page. However, the subscription-type automatic purchase products cannot be set as a purchasable item due to the security of the user's private key; guidance will be provided. 80% of purchases by the players will be allocated to the developer, and automatically paid to the developer's ITAM Wallet once the refund protection period expires.

3.2 ITAM SDK for Platforms Other than ITAM Store

We will also distribute SDKs for mobile games on other platforms, such as the Google Play Store, and the Apple Store, to support inter-user trading of unique digital assets. Games that incorporate this SDK can provide users with 'Unique Digital Asset Registration and Trading services. The trading pair for digital assets will be in ITAM Tokens, with DADEX function it will become a catalyst service to onboard new users and combining ITAM token will attract large blockbuster games to collaborate with ITAM.

3.3 Marketing Support Tools for Game Developers

3.3.1 Ad Network

An Ad Network for ITAM' ecosystem will be operated. An advertiser can analyze the Ad ID and browser cookies provided for each game user's mobile device in ITAM and advertise to a suitable target for the advertiser's product. The advertiser pays advertising costs with ITAM Tokens through bids based on factors such as ad impressions and conversions. Users who view the ad will be incentivized with a portion of the ITAM Tokens paid by the advertiser, and the game developer will also receive a portion of the ITAM Token as ad revenue. This feature can be selected by the game developer.
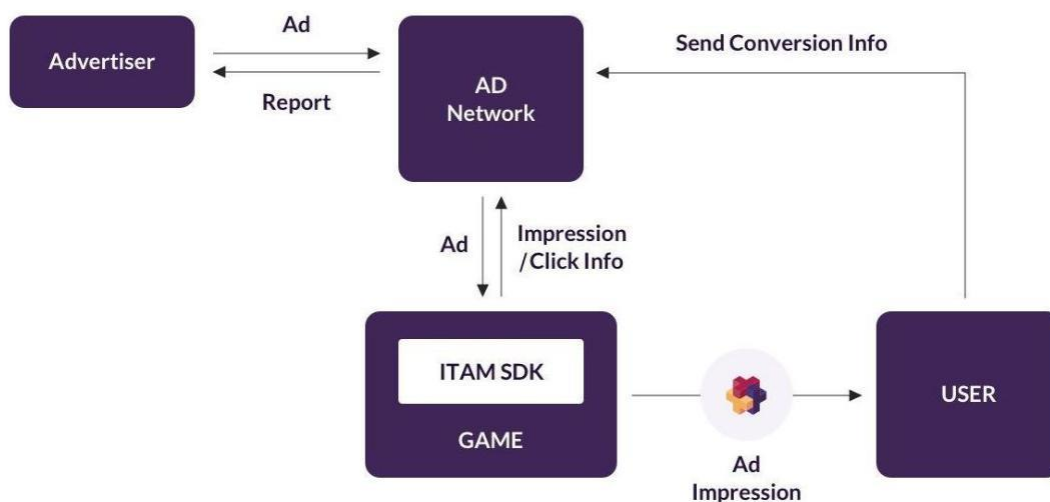
Figure 8. ITAM Ad Network Flow Chart

3.3.2 ITAM Analytics System

Measuring and analyzing the behaviors of game users is critical for game developers when operating their games. Analysis of the acquisition funnel, stage clearances of the gamers, and insight on event participation are important factors for improving the user experience and for proper marketing activities. ITAM will include and provide an analytics system in the ITAM SDK to assist game developers in these analyses. However, the ITAM Analytics System requires user agreement for each game.

3.3.3 Acquisition Analysis

In order to generate game revenue, acquiring new users is imperative. This is why game developers carry out various marketing activities. However, due to these various marketing activities, the number of acquisition channels increases, leading to difficulties in tracking down which users flowed through which channels. The ITAM Analytics System will provide a campaign-specific tracking link for game

installation, which enables measurement of the entire process, from [Tracking Link] → [Installation] → [Run] → [In-App Event] → [Revenue]. Through this measured data, the game developer can measure the

ROI for each influx channel and utilize it to optimize their marketing expenses. In addition, analysis of retention rate and revenue becomes possible for each acquisition channel.

3.3.4 In-App Event Tracking

Based on the events provided by the ITAM Analytics system and the custom events that can be set up directly, it is possible to measure and understand the behavior of the users, and it is possible to measure KPIs set by the game developer. Events consist of event names and parameters. By measuring users' funnel, retention rates, and bounce rates, the data can be used for game operations or for retargeting ads on the ITAM Ad Network.

3.3.5 Push Notifications

Push alert campaigns, one of the most powerful marketing tools of mobile games, can be easily applied through the ITAM SDK. By using the segments of the users' events, funnels, etc. created with the ITAM Analytics System, push notifications can be sent entirely or selectively. Moreover, it's possible to send push notifications only to specific user segment groups, and the transfer rate and open rate of the transmitted push notifications can be seen through the analytics feature. The segmentation feature of the ITAM Analytics System can increase the game's retention, as well as contribute to an increase in sales.

3.3.6 Sales Analysis

The sales report provided by the ITAM Analytics System can be used to understand the purchasing behavior of game users. Through the funnel analysis, the events prior to purchasing behavior can also be analyzed, and in addition to in-game purchases, sales reports on factors such as revenue from advertising inventory and digital asset trading fees from ITAM DADEX are available to help analyze the overall game sales. Sales Analysis can provide insights from various perspectives, such as analysis by acquisition channels, analysis by period, analysis by in-app events, etc., and segment creation based on purchasing behavior is also possible. Through the Sales Analysis, game developers can check the points that affect user experience, and also see the impact of user experience improvements immediately with the Sales Analysis.
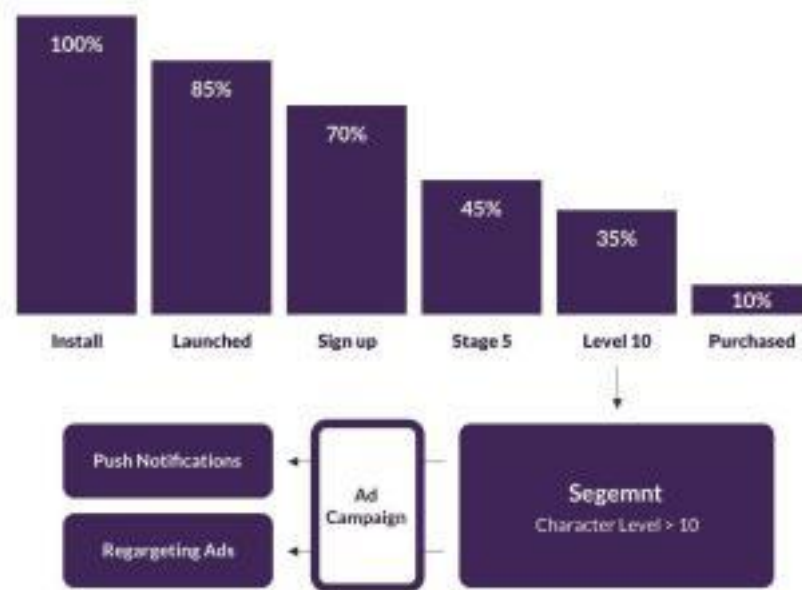
Figure 9. Example of Customer Segment Creation and Marketing Utilization Using the Analytics Tool

4. ITAM Ecosystem and Token Economy

4.1 ITAM Ecosystem

ITAM is designed to provide fair and reasonable benefits to all ecosystem participants through blockchain technology. ITAM Token will be used to accelerate the ITAM ecosystem, and can be used in a variety of forms such as in-app purchases on the ITAM Store, settlement for game developers, trading of unique digital assets (ITAM NFT), rewards for participation on ITAM and events, fee for leasing ITAM NFT, and more.

In addition, a broad range of diverse cryptocurrencies, such as EOS and Dai, will be usable on ITAM for the purchase of paid content, settlements for game developers, trading of in unique digital assets (ITAM NFT), and more, with the purpose of having more active purchases from the game users and for the settlements of game developers.

However, for the growth of the ITAM ecosystem and for its contributors, discounted trading fees and other means of certain functions will be limited to only ITAM Tokens, and in order to further stimulate the ITAM ecosystem, ITAM Tokens will be gradually burned.

Figure 9 shows a simple illustration of how the ITAM ecosystem works, and the main components and members are as follows.
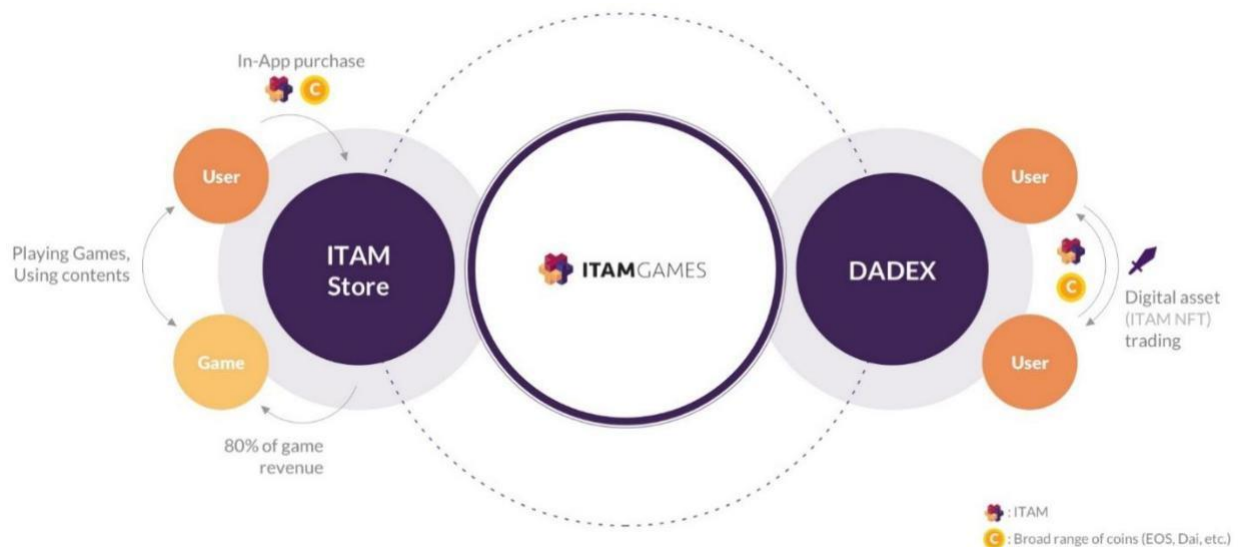
Figure 10. ITAM Ecosystem

4.1.1 ITAM Store

ITAM Store and ITAM DADEX are commission-based model. Game users purchase paid content in the ITAM Store with the ITAM Token and/or cryptocurrencies partnered to be usable on ITAM, and game developers receive 80% of their payouts after 15 days. The ITAM Store and the ITAM SDK for game developers are all free.

4.1.2 ITAM DADEX

The fee (5~10%) of the digital asset (ITAM NFT) trading between game users is deducted and transferred to the NFT seller. 30% of this trading fee will be paid to the game developer. Trading fees for digital assets will encourage game developers to provide a more attractive and differentiated NFT design.

Category	Developer	ITAM Network
ITAM Store In-App Purchase	80%	20%
DADEX fee	30%	70%

Figure 11. Developer Revenue Distribution

4.1.3 Game User

Game users are a key people who installs and play games, as well as an important member of the platform. The game users are key members of the ecosystem that enjoy blockchain games through the ITAM Store, and they will be able to purchase paid content with the ITAM Token and/or from a broad range of cryptocurrencies partnered to be usable on ITAM, trade in-game digital assets with other users, participate in ITAM' promotional events, and other various activities on ITAM.

4.1.4 Game Developer

Game developers are also an important part of our ecosystem that provides the main content of ITAM. The game developer will receive 80% of the content purchase revenue of the game users and will receive it through the ITAM Wallet for Developers. It will be kept for a period of 14 days refund protection and will be automatically paid the next day. For games that have inter-user tradable ITAM NFTs, they can earn additional revenue equivalent to 30% of the trading fee.

4.1.5 External Parties, Advertisers and Promoters

As ITAM ecosystem expands, the number of players from all around the world will increase. Any sort of global platform will inevitably receive proposals and offers from advertisers, and game related promotion collaborations. Advertisers wishing to advertise within the ITAM platform, or in-game advertisements, should procure ITAM Tokens to make advertisement and collaboration. ITAM Tokens from these parties and advertisers will be used to reward event participant users and game developers.

Those that want ad inventory or in-game advertisement on ITAM can procure ITAM Tokens from outside and advertise within the platform. Most ITAM Tokens of external participants are rewarded to participating users and developers. Medium and large game developers and publishers can also collect game users from a specific inventory or pre-booked corner and provide ITAM Tokens as participation rewards.

4.2 ITAM Token Economy

ITAM will issue a token, called the ITAM Token. A strict limit of 2.5 billion ITAM Tokens will be created, never to be increased. ITAM Token will have the following functions on ITAM Game services:

- DADEX exchange fee discount

- ITAM Store in-app purchase discount

- P2P ITAM NFT rental fee

- Staking for game developers for decreased commission

- Special benefits and usage of the ITAM Token

- ITAM Token burn

4.2.1 DADEX Exchange Fee Discount

When using the ITAM Token to pay exchange fees, users will receive significant discounts.

	1st year	2nd year	3rd year	4th year	5th year
Discount Rate	50%	25%	12.5%	6.25%	No discount

Figure 12. Discount rate for DADEX

4.2.2 ITAM Store In-App Purchase Discount

When user makes in-app purchase with 20% with the ITAM Token, the user receives a 5% discount. No other payment system will allow the discount.

4.2.3 Peer-to-Peer ITAM NFT Rental Fee

ITAM NFT can be rented amongst users, and rental fee will be paid in ITAM Token. Lending user set the lease period and desired fee of the NFT rental, and smart contract allows lease fee moves to user lending from the leasing user in a trustless system.

4.2.4 Staking for Game Developers for Decreased Commission

As a platform policy, game developers take 80% of the revenue, but if game developers want to increase revenue, they can do so by staking the ITAM Token and increasing this percentage up to 90%.

ITAM Stake Rank	In-App Purchase Fee
Above 1.0%	50% Discount
Above 0.75% ~ Under 1.0%	30% Discount
Above 0.5% ~ Under 0.75%	10% Discount

Figure 13. Staking & Game developer Benefits

4.2.5 Special Benefits and Usage of ITAM Token

ITAM will allow certain content or access rights to be only purchased through ITAM Token. In the future, we will have the ITAM Token to have preferential use value such as voting power in the community, future pre-purchase game and NFT pre-sales.

4.2.6 ITAM Token Burn

ITAM will gradually burn ITAM Tokens to stimulate the ITAM ecosystem.

5. ITAM Technology and Environment

5.1 Blockchain protocol

We believe blockchain is the most safest and transparent data storage to store digital assets, and by utilizing trusted public ledgers and smart contracts digital assets can work in trustless system. Among many public blockchain ITAM has decided to implement on the EOS mainnet first and followings are reason for choosing it.

5.1.1 Stability and Scalability

EOS.IO generates a block every 0.5 seconds through the DPoS consensus algorithm, and not all nodes participate in block generation and verification. For this reason, higher TPS(Transaction per Second) and stability is guaranteed compared to other public blockchain protocols that use PoS and PoW consensus algorithm.

5.1.2 Zero Transaction Fee

Until now, most public blockchains were designed to charge users transaction fees to access the network, and there were no alternatives. However, through the ITAM infrastructure, users can access its game services without paying a blockchain access fee. Furthermore, EOS.IO allows ITAM infrastructures to leverage distributed storage, such as acquiring and trading in-game digital assets, without paying a fee.

5.1.3 Easy Account Usage

Every user account in EOS.IO is created with a human-readable combination of 12 alphanumeric characters. It improves user convenience compared to the address standard used in other blockchain platforms. In addition, EOS.IO provides a repository of database type for each user account, so that context data on the smart contract can be separately managed and inquired. Ultimately, improvement of application service configuration and performance can be expected.

5.2 Architecture of Intermediate Layer Between EOS and Game

With the current blockchain technology, it is impossible to decentralize all digital assets owned by game users. For this reason, it is wise to record and trade only the digital assets of unique assets with specific consumption value on the blockchain, instead of trading all existing digital assets in games. In this regard, profit and stability of application layer are insured, benefiting game users and gaming developers.

5.3 ITAM SDK and ITAM Smart Contract

5.3.1 ITAM SDK

To facilitate the connection between EOS.io protocol and games, ITAM will distribute the ITAM SDK and plug-in package. By these two implementation points of the intermediate layer, mobile games that want to participate in ITAM will easily be able to enter. When certain digital asset data is recorded on blockchain through the ITAM SDK, permanently recorded, meaning that a public copy is created and with both the value as data and transaction-able object. In addition, data integrity of the digital assets creation can be ensured through the blockchain technology, thereby eliminating integrity violation due to duplication, falsification, or malfunction of the digital asset.

In order to manage digital assets using blockchain and ITAM SDK, it is necessary to link data with the game developer server in order to process trading in the real game. To connect these data, ITAM linked server and game developer server will perform 1:1 communication with a security-ensured channel by utilizing the application of technologies such as VPN(Virtual Privacy Network).

The ITAM linked server acts as an intermediary between the blockchain and actual gaming data, thereby enabling handling of large amounts of detailed data that are difficult to accommodate on the blockchain. Large data that are difficult to record on blockchain are separately indexed using a hash function and stored in the ITAM linked server, and the integrity of the data is maintained by recording the indexed hash value on blockchain. In this way, game clients can easily use the latest information of digital assets recorded on blockchain through the ITAM SDK. The ITAM Team will provide a mobile SDK and a server SDK for mobile gaming clients, which includes a smart contract in the blockchain.
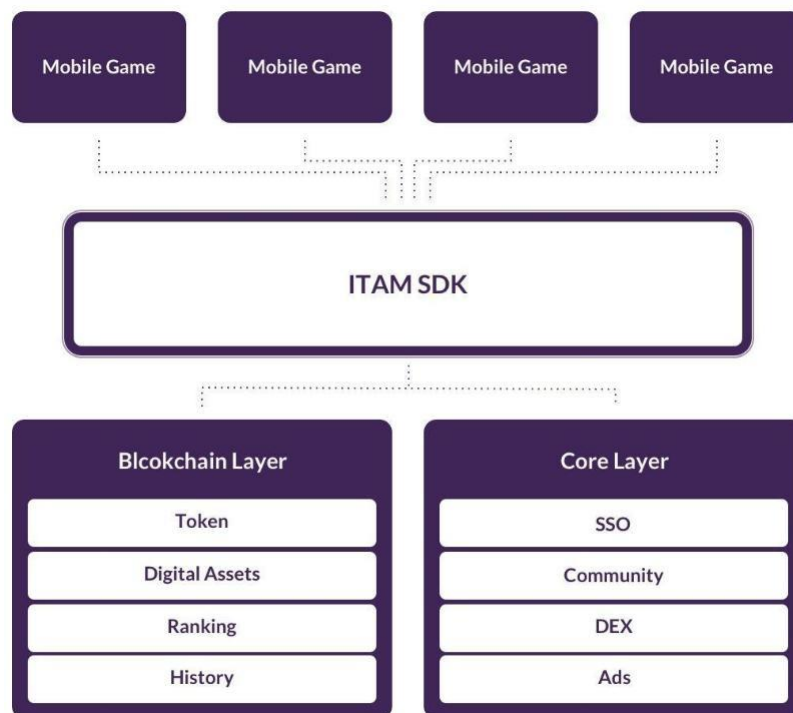
Figure 14. ITAM SDK Diagram
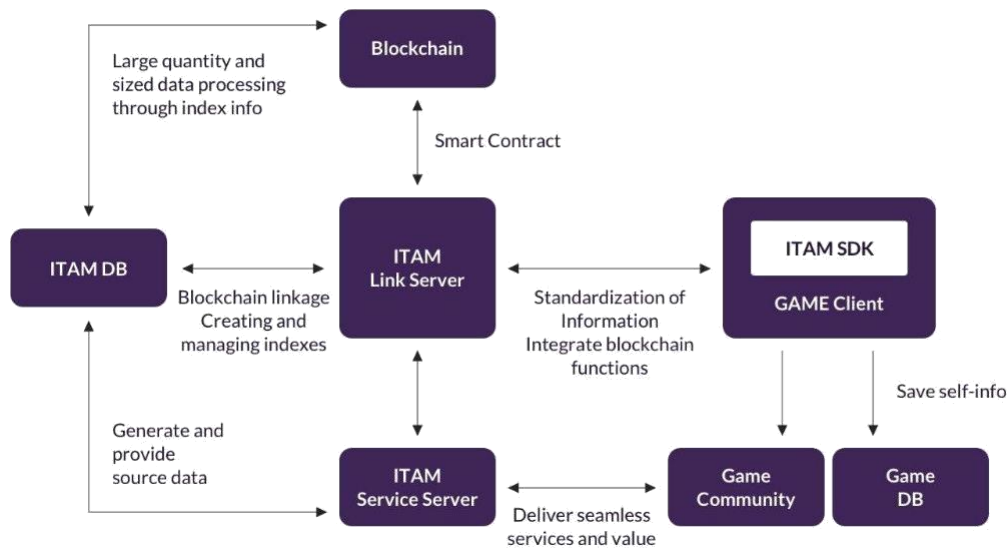
Figure 15. ITAM Infra Diagram

5.3.2 ITAM Smart Contract

ITAM' smart contract is used as a key element in the EOS.io protocol to record information about digital assets on the blockchain. Smart contracts will ensure the transaction, storage, and payment of digital assets. The smart contract consists of a contract that includes an action for recording game asset information, an action for digital asset trading, and a contract to issue and transfer ITAM Tokens. Each contract can be either a separate source code or a single source code, which is selected considering the operating environment of EOS.io.

Smart contracts are written in C ++ and are distributed by creating web assembly type binaries using libraries provided by EOS and uploading them to the blockchain. Distributed smart contract on blockchain is applied to each developer or SDK by utilizing RPC API that uses HTTP communication or HTTP. It will also include the Ricardian Contract, a component of the smart contract. It complements smart contracts by including opcodes and a small amount of human-readable data, providing more legitimate and more detailed information between traders.

While dealing with digital assets(ITAM NFT), sellers can initially choose sales method of their digital assets by named price method or minimum price method to make trade, immediate bid winning price and sell it to a person who bid the highest price within a certain period of time. With the chosen method, a seller can operate a smart contract to create a sales method. After the trading of unique digital assets, the results processed in the smart contract are used to automatically change the ownership of the digital assets on blockchain and move the ITAM tokens from the buyer to the seller.

5.4 ITAM Middleware and Full Node Implementation

ITAM built its own middleware between Linux (OS) and Full Node (APP) and also between Linux (OS) and MongoDB (APP) to apply blockchain data to services quickly and securely. Currently, blocks created in the node of the EOS protocol consists of P2P method file DB. This accumulated data is too much to analyze file DB and to apply it to dApp services.

Generally, to apply this data, a separate plug-in such as Mongo DB Plug-In is used. However, there are a lot of data in the transaction that occurs from many EOS dApps and the file DB, which occurs every 0.5 seconds. Due to this fact, OOM (Out Of Memory) is generated in the process of inserting into Mongo DB which causes frequent system downs. For this reason, we have built our own middleware to ensure stable operation essential for game services, and we are also building and running a full node of EOS mainnet, even though we are not a block producer. Currently, it has a higher than 170 ~ 180% stability and performance compared to the existing Mongo DB Plug-In. This is a step-ahead preparation for advanced blockchain game service, and we will be implemented full node for all the protocols used for services later on.

5.5 ITAM User Types and UX

On ITAM ecosystem, we foresee three types of game users.

- Type of game users who enjoy the game as a guest without going through a cumbersome login process.

- Type of general game users who want to keep their experience and activity data in the game and continue to play the game.

- Type of game users who owns an EOS account and who wants to record certain unique digital assets on the blockchain and receive ITAM Tokens as reward in the game.

The last type of user group will be the user layer that fully utilizes ITAM, but users who are still unfamiliar with blockchain technology and/or the EOS account that ID/private keys cannot be assigned by the users themselves is a major hurdle. Plug-ins such as guest login or social login are necessary, just like how one could easily access in existing games. Users can easily join ITAM as an associate member through social logins such as Google and Facebook, and this can induce them to become a regular member of ITAM via EOS authentication within the service. By EOS authentication, users can fully utilize the services of ITAM, such as trading of digital assets and compensation for community participation. The following figure is a supplementary explanation of the right to use services within ITAM by user type.

Activity	Guest	User	Main-net User
Game Usage	o	o	o
Game in-App Purchase	o	o	o
Game Data Storage	×	o	o
Community Creation	×	o	o
Rewards for Community Creation and Operation	×	×	o
Read on Communities	o	o	o
Write on Communities	×	o	o
ITAM Rewards	×	×	o
Acquire In-Game Digital Asset	△	o	o
In-Game Digital Asset Transactions	×	×	o

Figure 16. ITAM services and content availability by type

5.6 ITAM' In-house Game "BlueDawn"

One of the most important success factors for a platform is to have well-created content optimized for the platform's identity. In the short history of blockchain ecosystems, there have not been successful game content besides Ethereum-based CryptoKitties. In order to activate trading of unique digital assets, which is the core value of ITAM Game, the ITAM Team has decided to make killer contents and currently developing a mobile RPG game "BlueDawn" with its in-house studio.

Figure 17. BlueDawn Cover Image

As shown in the chart below, "BlueDawn" game users will be able to acquire material, and by using these materials and investing a certain amount of time and resources, users will be able to create unique game items. These will also be tradable with other users through the ITAM DADEX.
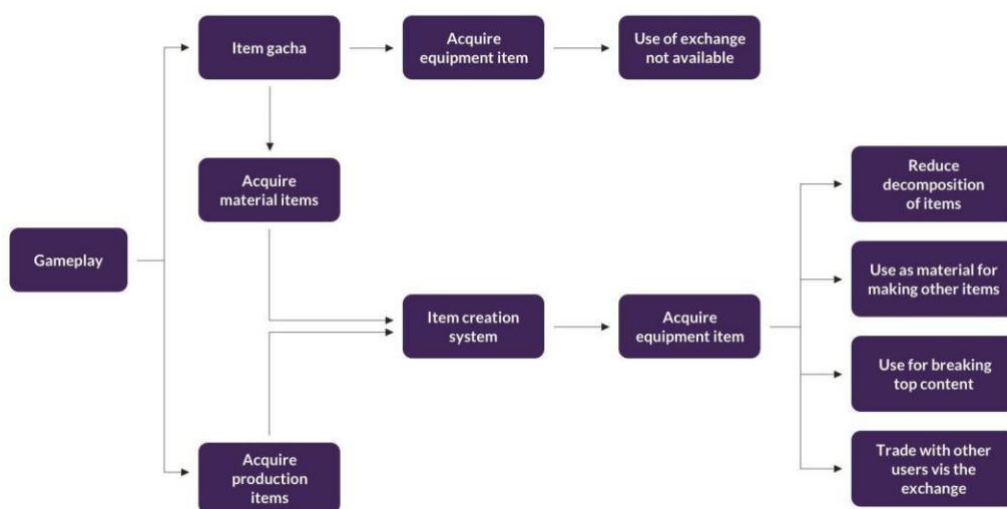

Figure 18. Generation flow of unique digital assets in BlueDawn

6. Roadmap

2018.3Q

EOStock
The World's First EOS Chrome Extension Wallet launch

EOScanner
EOS Development Focused Block Explorer Launch

ITAM SDK
Architecture design and features planning, start of development

ITAM Games In-house Blockchain Mobile RPG "BlueDawn"
game developer team setting, start development

EOS Fullnode
EOS full-node setup completion

2018.4Q

ITAM Store
Development of console, game application registration for game developers
Google chrome extension EOS wallet EOStock, Game store,
SDK connecting application Alpha Ver.
partnership with game developers and store enlistment contract

ITAM SDK
Record In-app purchase, leaderboard, achievement of user
history on blockchain

ITAM Games In-house Blockchain Mobile RPG "BlueDawn"
release of teaser trailer

Optimal Middleware for EOS Full Node
History API service test, independent plugin

2019.1Q

ITAM Store
v0.9 Open Beta launch
Release 2+ games onto the Store
ITAM Market open beta service

ITAM SDK
v0.9 development
simple login, digital asset (ITAM NFT) development

ITAM Games In-house Blockchain Mobile RPG "BlueDawn"
Completion of Alpha ver

2019.2Q

ITAM Store
v1.0 Release
System feature update
Launch 10+ games on the store
Digital assets(ITAM NFT)Exchange service

ITAM SDK
v1.0 release
Digital asset tokenization(ITAM NFT), transfer feature

ITAM Games In-house Blockchain Mobile RPG "BlueDawn"
beta version update

2019.3Q

ITAM Store
Store update and launch 20+ additional games on the store
Game community feature

ITAM SDK
ITAM NFT peer to peer rental feature

ITAM Games In-house Blockchain Mobile RPG "BlueDawn"
Open Beta ver1.0, Released in certain region

2019.4Q

ITAM Store
Release of ITAM AD service and pre-registration of new game

ITAM SDK
Marketing support tool for game developers
(revenue and acquisition analytics system, ads Games, etc.)

ITAM Games In-house Blockchain Mobile RPG "BlueDawn"
Global market launch, continuously update on game contents

7. Token Sales Plan

7.1 Token Creation and Distribution

The ITAM Token is the utility token used in ITAM service. A strict limit of 2.5 billion ITAM Tokens are expected to be created, never to be increased. The "Token Sale" portion on token distribution diagram will be sold to the users that want to enter the ITAM ecosystem early on. The "ITAM Ecosystem" portion will be distributed to the contributing members of the ecosystem. The tokens assigned towards the "Marketing" portion will be used for the marketing purposes of ITAM. Other than this, the "Team" tokens will be used as an incentive towards the ITAM Team and Founders. Furthermore, 5% of the tokens will be given to the supporters and advisors that helped in the early stages of the platform development.
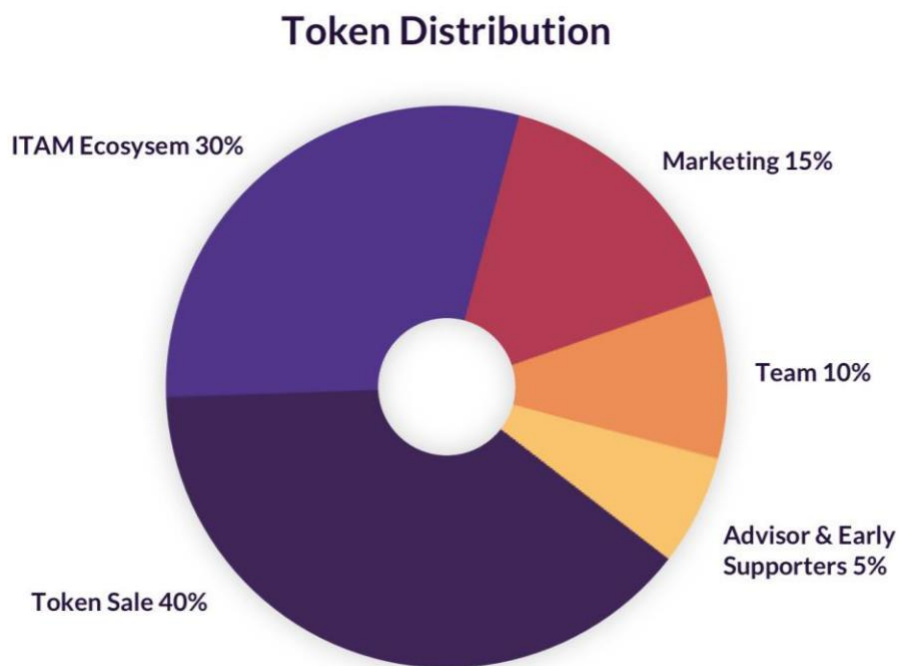

Figure 19. ITAM Token Distribution

7.2 Use of fund

All of the funds gathered through the Token Generation will be used for the development of ITAM and to create and maintain the ecosystem. 30% of the total fund will be allocated to support immigration of traditional games to ITAM Store, which will be used to support games language/geographical operations of the different areas around the world that ITAM will operate in. 25% of the fund will be used towards ITAM development, and 15% of the fund will be used for the marketing costs of ITAM. In addition, 8% will be for the infrastructure and other maintenance costs of ITAM, and 7% for tax and other legal issues. The remaining 15% will be allocated as a reserve. The above ratios are subject to change if it is deemed necessary to adjust for the future vitalization of ITAM.
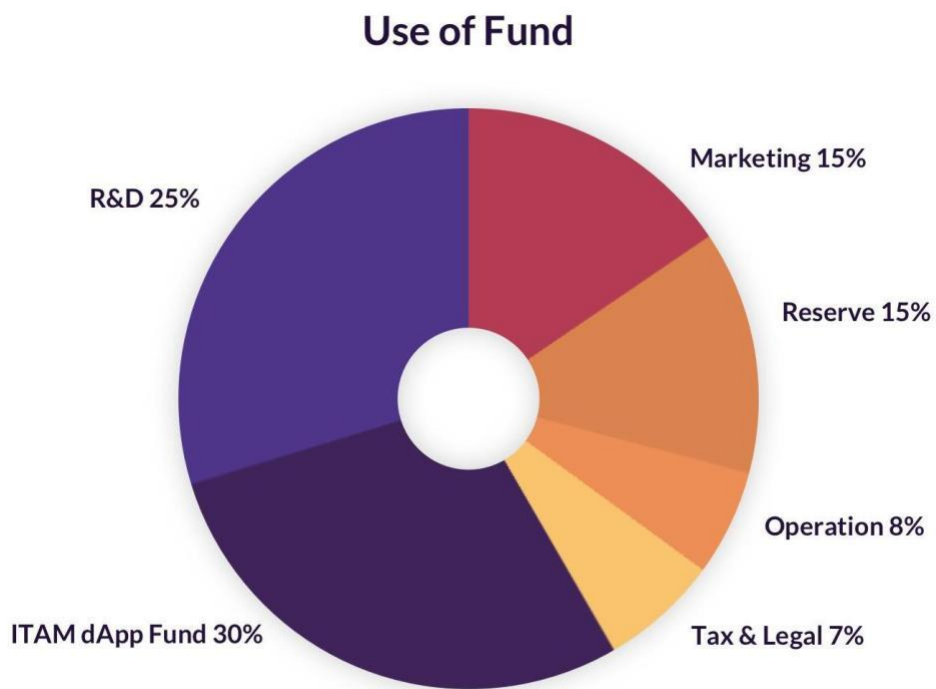

Figure 20. Use of Fund

8. Team

Asung Gill / CEO

Asung is a developer and executive who has led many large-scale development projects (SIs) for 13 years and has been a CEO and CTO of several companies. He was the first CTO of LeisureQ Co., Ltd, M & A to Yanolja, and has experience as an online platform service provider in the leisure activity market and CEO of media contents business company Tion Media. He also created a better game ecosystem and co-founded ITAM through blockchain technology as an experienced and enthusiastic game user.

Ha-Seop Jeong / Executive Vice President

Ha-Seop received his degree in Electrical Engineering(Master of Science) from Seoul National University in 1999. Thereafter, he spent 11 years in the game industry such as Neowiz Games, Aina, and Nexon Korea as a planning director and director of new game development division. With rich experience in BM of game, vision and strategy establishment and content portfolio design, he is responsible for designing contents, the business model of ITAM Store and gaming company alliance.

Byeong-Su Kim /Game Department Director

He majored in computer science at the Air Force Academy in Korea. After graduation, he had 18 years of experience in game development at NCSoft, XL Games, JCE, and leading games such as 'Blade and Soul', 'Archeage', and 'Freestyle Football' which had millions of users from China and Korea. Kim is leading ITAM's in-house game, BlueDawn.

Ho-Seok Yang / CSO

Ho-Seok is a serial entrepreneur who founded three startups and ex-vice-president of Fenox Venture Capital Korea. He coordinated incubation, investment enforcement and M&A for startups and co-founded ITAM to provide better opportunities and experience for game companies and game users through blockchain technology.

Dongjun Kwon / CTO

Kwon is a development expert with 12 years of various development and career experiences under his belt. With background in Compal, Traport, O2Palm, Tutto, and BankWare Global as a developer, project lead and management, he will be in charge of development at ITAM. Kwon has also worked as the lead of several government organization SI projects, and is an expert in front-end, back-end, Java, SQL, React, Vue, Node, and Angula. https://github.com/mayajuni

Damian Byeon / CCO

With a BA degree in Event Management and Advertising from Iowa State University, Byeon is a blockchain and EOS.IO specialist, having served as the Operation Director for the EOS Block Producer (BP) AcroEOS. Experience as a serial entrepreneur in Rise Again Inc., Krypto.kr, and more, as well as business as an EOS BP, Byeon possesses a strong, global network in the blockchain ecosystem.

Kyeong-Seok Oh / CMO

Kyeong-Seok is a digital marketing specialist. He has marketing experience in various industries including automobile, architecture, and AI such as Text Factory, Hello Car, and Aju Design Group. He is an analytical marketing instructor and co-founded ITAM to contribute to creating ecosystems that make it easier for the public to use blockchain technology.

Brandon Noh / Service Planning & Operations Director

Graduating from Konkuk University in Livestock Management and Distribution Economics, Noh is a serial entrepreneur and a service planning expert. He has experience as the CEO and Lead Planner/Operations of 'TASTY,' a local food curation service for travelers, as well as experience as the CSO of FindexChain, the blockchain financial service 'IONIA,' working on the strategies, planning, and operations. With his experience and know-how gained as the lead in Multi-Wallet Mobile App and Easy Payment Platform of 'IONIA,' Noh will plan and lead the ITAM Store and ITAM Wallet projects for the utmost convenience and experience for users.

Minsu Kim / Game Programming Director

Kim is an expert game-related programmer with 15 years of experience, with a degree in Multimedia from Dongguk University. Kim served as the development Part-Leader at Softmax, worked at Trinigy Korea, and was the Head Director of Development at Quadrux. As a member of the Korean branch of Trinigy, a specialized developer of game middlewares, Kim worked as a developer of the physical engine Havok, and is familiar with several game engines such as Unreal, Unity, and Cocos2d. He was also in charge of the game client and server development of the PC RPG 'The War of Genesis 4' and the mobile RPG 'Shinkou No Horizon.' At ITAM, Kim will lead the TF of the ITAM SDK for the mobile games that onboard ITAM Store, as well as the in-house game "BlueDawn" being developed at ITAM.

9. Disclaimer

This Whitepaper is for informational purposes only and does not constitute an offer or solicitation to sell shares or securities in ITAM or any related or associated entity of ITAM. Any such offer or solicitation would only be made by a confidential offering memorandum and in accordance with applicable securities and other laws. None of the information or analyses presented are intended to form the basis for any purchase decision, and no specific recommendations are intended. Accordingly, this Whitepaper does not constitute purchase advice or counsel or solicitation for purchase in any security. This Whitepaper does not constitute or form part of, and should not be construed as, any offer for sale or subscription of, or any invitation to offer to buy or subscribe for, any securities, nor should it or any part of it form the basis of, or be relied on in any connection with, any contract or commitment whatsoever. Any information included in this document, such as the ITAM ecosystem, should not be copied, modified, and distributed illegally without prior consent from the ITAM team.

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The risk of loss in trading or holding cryptocurrencies and tokens can be substantial. Therefore, you should carefully consider whether trading or holding cryptocurrencies is suitable for you in light of your financial condition. Forks and changes in relevant Games may result in significant and sudden changes to the value and/or usability of cryptocurrencies and tokens. The ITAM is not responsible for such loss of value of cryptocurrencies and tokens and bears no responsibility for any loss incurred by you while using the ITAM platform or in any direct or indirect connection to the ITAM platform. ITAM Tokens are issued on the Ethereum blockchain. In this regard, any failure or incorrect operation of the Ethereum Protocol may disrupt the transaction Games in unexpected ways.

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There is a risk that ITAM platform may unintentionally include weaknesses or bugs in the source code interfering with

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