Ludena PROTOCOL

Gamified Social Platform for Worldwide Gamers

Whitepaper

ENG Ver 1.1

Last updated December 2019

White Paper

Ludena Protocol provides a gamified social platform for worldwide gamers

The LDN token rewards users for platform engagement with fellow participants. Our 3 million strong community boasts the ultimate gamer-focused social ecosystem and offers the three major segments of the gaming industry exclusive benefits:

Players

Discover or upload helpful game strategies, hints and tricks and receive fair rewards for all kinds of engagement; Can easily find or sell rare and special game items in the world's first fee-free virtual goods marketplace; Get matched with new friends to play fun and simple games with on Ludena's 1:1 hyper casual gaming platform.

Game Publishers

Marketing dollars are targeted, no longer wasted, and result in real ROI effectiveness, through in-game purchases and driven player growth, due to our accumulated 1TB+ of user analytics and our 7 years of proven marketing successes.

Indie Game Developers

Our platform is an ideal solution for indie game developers, who want to reach a large audience, without paying exuberant commission fees, and who want to drive in-game spend, as our token economy design encourages.

ludenaprotocol.io | Copyright©2019. All rights reserved.

Executive Summary

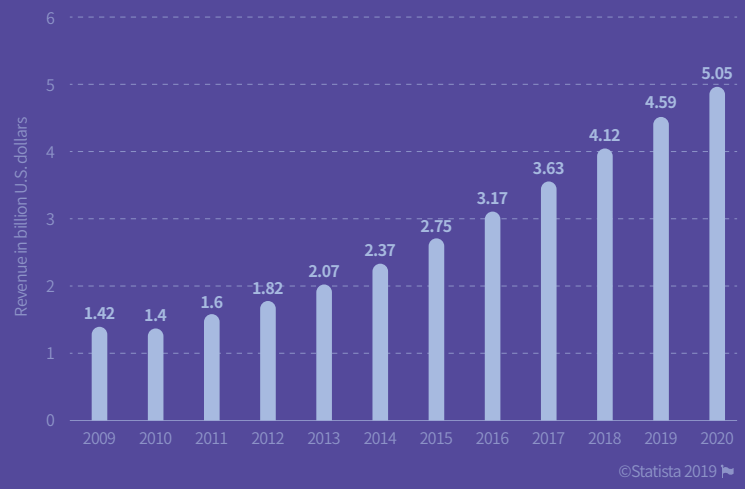
Ludena Protocol is the first comprehensive gamified social platform, connecting gamers, from around the world, to a single application where they can play, trade and share all things gaming with one another.

The Ludena Protocol team is made up of a group of professionals, who have been operating the 3 million user strong gaming social media application, 'GameTalkTalk,' for 7 years. During their history, they have made a significant number of partnerships with influential stakeholders in the gaming industry. The team has discovered the market challenges faced by all players in the industry, including gamers, publishers, and indie game developers. To solve these problems, they have identified an advantageous method of changing the gaming industry's paradigm by introducing blockchain.

The total number of game players around the world is growing explosively. In 2019, the average number of users in the gaming market reached 2.4B, an increase of 8% per annum. Not only do people enjoy playing games themselves, but they also enjoy sharing their experiences with various games on multiple social media platforms. While this user-generated content is a central pillar of the game industry's growth, users do not receive as much compensation as the value they add to the market through their produced content.

At present, the worldwide gamer community totals 2.4B and is growing by 8% each year.

Game publishing also requires a marketing solution to bring an increasing number of game users towards their game offerings. Organic user content is becoming more and more influential and to marketers, but it can mean good or bad news. Undoubtedly, game publishers welcome and enjoy the benefits from free, word-of-mouth marketing efforts made by their advocates. On the other hand, with the uptick in massively available information, marketing methods have become much more complex and tedious, in turn, driving the costs up extraordinarily with disappointing results in terms of reach.



Video game ad spend is up **500%** in the last 10 years and increasing.

ludenaprotocol.io | Copyright©2019. All rights reserved.

For indie gaming companies, this costly fact has become overwhelming to their bottom lines. They have failed to keep up with the marketing efforts of larger developers due to low capital and lower brand equity. One option to overcome this difficulty, is for smaller firms to latch on to industry giants, who take on the marketing task, usually, at a 12-30% commission for platform distribution fees. Although this method is not very attractive for indie developers' return, many times there is no alternative.

For the gamers they do reach, enjoying such games with others can prove challenging to its initial userbase. Some people even find it difficult finding teams to join that allow them to enjoy much more popular online games. Others are simply looking to meet new people with similar interests in a fresh, lighthearted setting. All of these are examples of the pain points faced by gamers in present day.

The Ludena protocol is based on three business values (decentralization, opportunity, and interdependence) to ensure that any gaming-related activities are fairly compensated, that game publishers' games are effectively marketed and that favourable development environments are being offered to indie game developers.

Decentralization	Automatic and fair compensation for social engagement, with a structure not managed by any specific entity.
Opportunity	Gamers will be rewarded for all their gaming activities & developers have the ability to access a massive community to target their marketing efforts efficiently.
Reciprocity	Data obtained from members in the gaming ecosystem leads to gaming content production, which benefits all levels of platform users.

Until now, many blockchain projects had solid ideas, but failed to acquire a sizeable number of users to maintain their project's attractiveness. Ludena Protocol has an established community of over 3 million gamers and will expand this community's global reach, increasing its appeal across all industry stakeholders.

ludenaprotocol.io | Copyright©2019. All rights reserved.

TABLE OF CONTENTS

— Whitepaper

— Executive Summary

01 Industry Dynamics

02 The Game Changer

03 Ecosystem Makeup

04 Business Model & Strategy

05 Technology

06 LDN Token

07 Company Results

08 Community Support

09 Roadmap

10 Team Overview

11 Token Details & Distribution

12 Disclaimer

ludenaprotocol.io | Copyright©2019. All rights reserved.

1. Industry Dynamics

 | Copyright©2019. All rights reserved.

1. Industry Dynamics

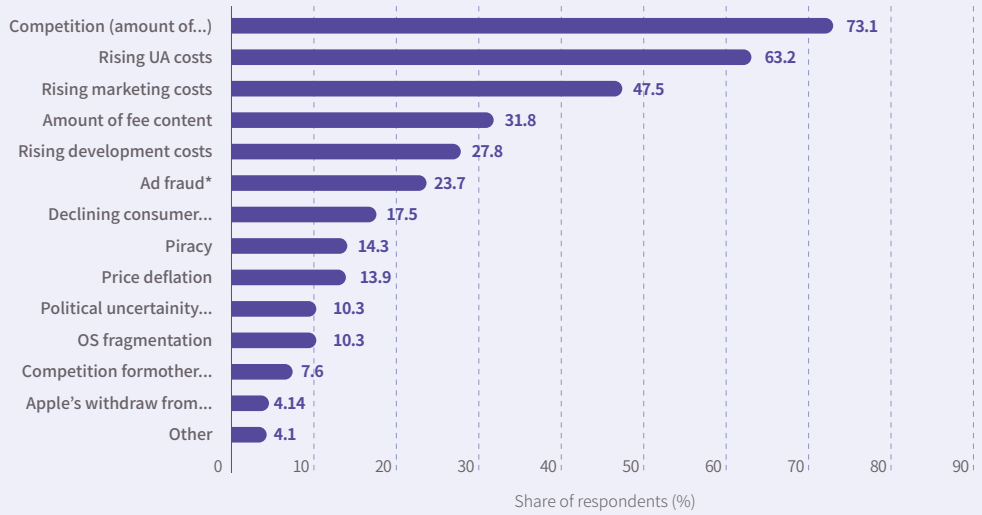
Gaming has, somewhat surprisingly, become one of the most consumed forms of entertainment present day. As of 2019, one-third of the global population play video games on at least one platform, a massive increase from 2003, where less than 8% of the population made up that figure. The industry shows no sign of stopping, as estimations show upward trends in consumption rates for the next five years, at minimum. The main driver of this trend is the increase in smartphone adoption, which offers a potential handheld gaming device to its owners.

1.1 Game Developers

In 2016, mobile gaming revenues surpassed both PC and console.

Mobile gaming is a $65.8B industry and revenue increases 25% year over year. These facts have created an oversaturation of game choices in the market. Due to this steep competition, traditional marketing channels are overflowing with advertisements for these games in an effort to attract organic users. In short, too many developers are spending a fortune in the hopes to make a fortune from their mobile games. Despite their efforts, however, many game publishers see their marketing dollars wasted through multiple channels, as it becomes increasingly difficult to target specific gamers.

The Challenges of Mobile Games Business According to Game Developers Around the World (as of fall 2017)



Sources: mobyaffiliates; Movista;PocketGamer.biz

Created by WePC.com

ludenaprotocol.io | Copyright©2019. All rights reserved.

Mobile gaming has risen in tandem with social media use. More and more people not only like playing mobile games, but they enjoy telling their followers about them as well. With so many new influential mediums disrupting traditional marketing avenues, efforts to reach organic audiences and build or maintain brand reputation have become even more tedious.

In the past, game developers were able to achieve some organic growth from simply posting their game in the Google Play or App store. Due to the influx of game availability, this is no longer a viable option, meaning that indie game developers need to come up with a workable ad spend budget for their That leaves indie developers with little choice but to offer up their creations to large publishers who take a hefty percentage of generated revenues.

1.2 Game Item Trading Market

In 2016, mobile gaming revenues surpassed both PC and console.

If the game takes off, however, it may all be worth it. The mobile virtual trading market is a $55B industry in itself and this figure is expected to grow to $189B by 2025. There is still no solution available to counter the risk associated with these virtual item purchases. Many exchanges continue to be riddled with fraudulent or fake items, in addition to imposing high fees to the participating buyers and sellers. With the introduction of blockchain technology, many of these issues can be eradicated, but these exchanges continue to charge transaction fees and failed to reach significant user levels.

1.3 Blockchain/Crypto Gaming Market

Blockchain gaming really took off in 2017, although it was always around in one form or another, since cryptocurrencies were first introduced. Most projects focused on gambling games, encouraging players to place bets from their own reserves or play rudimentary games to earn increments of Bitcoin, etc. themselves. Although many blockchain game developers have since tried to learn from the mistakes of their predecessors, many games have slowly died out due to concerns with lack of scalability, speed and usership.

This has not stopped developers from around the world try and create the next big hit in crypto or blockchain gaming. In answer to the uptick in blockchain game developers, several blockchain gaming publishing platforms such as Enjin and Arcadeum. The underlying problem, as with most blockchain projects and as the gaming market is generally afflicted with, is the difficulties with user acquisition.

ludenaprotocol.io | Copyright©2019. All rights reserved.

2. The Game Changer

 | Copyright©2019. All rights reserved.

2. The Game Changer

2.1 The Ludena Protocol Solution

Ludena Protocol is a gamified social platform for worldwide gamers. It will provide multiple solutions for today's gaming industry inefficiencies. There are three parties who can receive unprecedented benefits from the platform: Game players, game publishers and indie game developers.

2.11 Game Players

Ludena Protocol's established mobile application GameTalkTalk has 3 million users who, for the past 7 years, have been sharing massive amounts of gaming information amongst themselves and being rewarded for such activity with in-app stars. These stars can be exchanged for either virtual items such as Google play store gifts cards or in-game items or tangible items, including convenience store goods or products from well-known, global brands such as Dominos Pizza. There are also leaderboards to encourage increased engagement in order to move up in the ranks and feel its prestige.

Additionally, game developers currently offer in-game missions or quests to GameTalkTalk users where, once completed, they are rewarded with GameTalkTalk stars. Daily activity is in the 10's of thousands, with a surge in usership on weekends and holidays in particular.

GameTalkTalk will seamlessly carryover these users to Ludena Protocol's global, DApp version of the app, but there will be added features, such as a P2P digital item exchange platform and a 1:1 hyper casual gaming platform in order to increase userbase, engagement and user satisfaction levels for all ecosystem participants.

Ludena Protocol discovered a need in the gaming industry for a virtual gaming goods marketplace free of transaction fees and free of worry from fraudulent exchanges. Harnessing blockchain technology and smart contracts, it is able to ensure that users' ownership of items are authentic and users can trade amongst one another without paying any fees whatsoever.

One of the pains for many gamers today, as global societies move to more individualistic ones, is finding fellow gamers to play with. Ludena Protocol will offer a gaming platform that matches gamers with a real-life opponent to play exciting, addicting, hyper-casual games. Every time the user enters a new match, they will be automatically pitted against a new opponent. This opponent will, by default, be a member of the opposite sex, from anywhere around the world, not necessarily someone from the same country. Settings can be changed to select gender and country to match with. This platform will allow users to speak to each other while they play and will automatically add each opponent to a historical friends list. Although rematch

ludenaprotocol.io | Copyright©2019. All rights reserved.

options will be available, users will have the option to message anyone from their friends list through a chat system equipped with emoticons and virtual gifts that can be purchased with Ludena Protocol's LDN coin. Whether it be to find a team to play with for a popular console game or even finding an opponent for a super simple mobile game, playing against or with a real person is always more interesting than interacting with a robot and Ludena Protocol is confident that this will drive global user adoption.

2.12 Game Publishers

As the gaming population continues to rise, so does the amount of available gaming options. That being said, the most convenient option has become mobile games, since over two thirds of the globe owns at least one smartphone. With a potential gaming console in many people's pockets, game publishers have been competing with one another fiercely to make the next big mobile hit. Once a new game is launched, however, these game publishers face their most difficult task, finding organic players.

Ludena Protocol is the answer to publishers' pain points. With already over 1TB of user big data, publishers can analyze and market specifically to their game's demographic. GameTalkTalk already has proven track record of success with this business model. Massive global brands such as Blizzard Entertainment and SEGA use the application to promote their games and grow their usership in Korea. Ludena Protocol wishes to scale this business model to a global userbase, helping match gaming companies to high quality gamers, meaning gamers that will actually increase in-game spend and have high daily play times. When publishers promote incentives through challenging and fun quests on the platform, this can greatly increase their chances of this and marketing dollars are not wasted, as is often the case this day and age.

2.13 Indie Game Developers

With so many avenues available to easily develop games, developers flooded the app stores. However, time and effort were more often that not unrewarded and, so, many developers have lost the incentive to move forward with their ideas. For those who did push on, if they wanted to reach users, they were faced with either massive marketing costs or unfair commission fees from larger publishers. Ludena Protocol will provide solutions for the high marketing costs, high publishing fees and difficulties in finding high quality users to indie game developers.

ludenaprotocol.io | Copyright©2019. All rights reserved.

Ludena Protocol will offer indie game developers the opportunity to publish their hyper casual mobile games on its 1:1 gaming platform. Upon launch of its global version, developers will potentially have 3 million users playing their games. The commission rate will be significantly more affordable as well 3-5%. Promotions on the platform to incentivize users to drive growth can also be much more beneficial to these indie developers than wasting marketing budgets on traditional mediums.

2.2 Blockchain Gaming Platform Solution

There are currently several gaming platforms available in the blockchain space. The following is a table of how Ludena Protocol's solution stacks up in offering comparison

	Ludena Protocol	Engine	MixMarvel	Refereum
Symbol	Ludena PROTOCOL	ENJ	MIXMARVEL	Refereum
Vision	Comprehensive Gaming Platform	Gaming Community Creation Platform	Game Publishing	Game Marketing (Referral)
Token Ticker	LDN	ENJ	MIX	RFR
Platform (Smart Contract)	Luniverse (Mainnet)	Ethereum (ERC-1155)	Ethereum	Ethereum
Target Game	All Game	Blockchain Game	Blockchain Game	All Game
Initial Acquisition User	3M in Korea	X	X	X
Contents Creating Incentive	O	X	X	X
Gamify Reward	O	X	X	X
Indie Game Support	O	O	X	X
SDK/API	O	O	X	O (SDK, Unity)
Wallet	O	O	O	O
Item Trading	O	O	O	O

ludenaprotocol.io | Copyright©2019. All rights reserved.

3. Ecosystem Makeup

 | Copyright©2019. All rights reserved.

3. Ecosystem Makeup

Ludena Protocol's influence structure is a decentralized automatic algorithm based on level achievements that rewards gamers for creating platform content and playing games. Level variation is based on xp acquired through content creation or from providing feedback, playing hyper casual games on the gaming platform or participating in events put on by game publishers. Each gamer can receive tokens equivalent to their level as compensation.

3.1 Decentralization

Incentives paid to users under the Ludena Protocol are not managed by any specific organization and aim to provide an automatic and fair reward system for ecosystem participation. The Ludena protocol allows users to trust that their content will be rewarded with tokens through automated algorithms that measure level structure, xp rewards, up & down voting content and level up boosting.

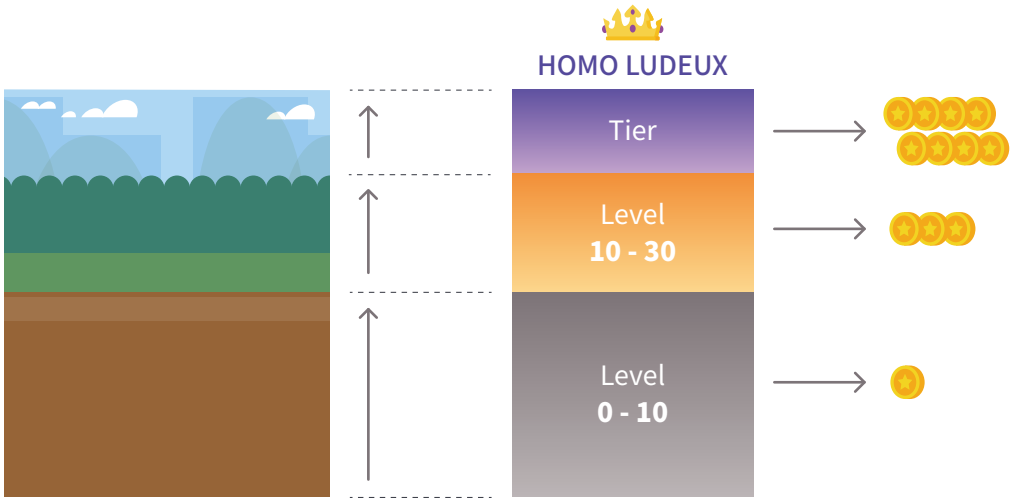
3.11 Level Structure

Levels in the Ludena Protocol ecosystem are divided into two stages: Normal and tier stage. The normal stage level starts from 0 all the way up to level 30. Before reaching level 30, users will not be rewarded with Ludena tokens for any activities in the ecosystem. After a user reaches level 30 from earning xp, they then move to what we call 'Tiered levels.' There are five tiers, the top being called: Tier 5. Each tier will receive an assigned value of Ludena token rewards on an ascending scale. In order to level up in the tier level, it will require a certain amount of xp, which will vary at each stage, similar to leveling up in the normal stage.

Homo Ludeus, is a Latin term for God-like and is a level that is unattainable for most in the ecosystem as it is higher than tier 5. There will be an unfixed number of users at this level, who received the title by an election process in the ecosystem. Users at the tier 5 level, the top tier, can be elected to Homo Ludeus through votes from other users in the ecosystem. Once voted to be "Homo Ludeus" level, these users can organize and vote on key rules regarding the operation of the ecosystem. The benefits of achieving this level are the monetary rewards associated with it. Homo Ludeus users are responsible for creating blocks in the chain, by adding data related to social activities onto it. Upon completion of these actions, a certain level of mining compensation must be provided to such users. The specific percentage of the token they mined is immediately given to the miner, and the rest is transferred to the pool for compensation purposes.

ludenaprotocol.io | Copyright©2019. All rights reserved.

Levelling-down is also possible in two ways, after users achieve the tier stage. First, a certain amount of xp is deducted daily, after the user does not have any in-app activity for one week. Second, the accumulation of negative feedback on content created can result in a deduction in xp. Content created that receives this negative feedback resulting in losing xp, can have been uploaded while the user was in either the normal or tier stages



3.12 Xp Reward System

Performing a variety of fun activities within the Ludena Protocol ecosystem will result in the granting of xp or experience points. The following are the activities that will give users these points.

Decentralization — Uploading content such as videos or written information (strategies, hints, etc.) within the platform will grant users a certain amount of xp.

Opportunity — Any engagement on fellow users' posts (i.e. liking, sharing or commenting, etc.) will also result in an allotment of xp. However, the amount of xp will depend on how much engagement a post has already received. For example, if a user adds " likes," "shares" or "comments" to a post that already has 700 likes, they will not receive as high of an xp reward as a user who liked a post with 14 likes.

3.13 Up & Down Voting Posts

If the user just wants to be active in the community through simple engagement, it may be more tedious to move up in the ranks. In order to level up they should post information or post comments on other users' content. After reaching level 10, they will have the ability to upvote or downvote posts.

ludenaprotocol.io | Copyright©2019. All rights reserved.

Upvoting Structure:

Every level has different power of voting capability. For example, tier 1 level users have a power of 40. This means that they will be able to upvote community content a total of 40 times each 72 minutes. After that 72-minute period, their power refreshes by 1%.

Downvoting Structure:

The total ability or power to thumbs-down or downvote content is granted to users at level 10 or higher. This means that, for example, they will be able to down vote community content a total of 10-30 times each 72 minutes. After that 72-minute period, their power refreshes by 1%.

Once the tier level is reached, tier 1 level users have a power of 60, and so on. This means that they will be able to downvote community content a total of 60 times each 72 minutes. After that 72-minute period, their power refreshes by 1%, as with other levels.

For any single post, a user can only up or downvote once, however the vote can be changed from down to up or vice versa. At the Homo Ludeus level, users have unlimited power or instances to downvote, in order to manage the ecosystem's content.

ludenaprotocol.io | Copyright©2019. All rights reserved.

3.14 Boosting

For those users who wish to level up faster, there is a “Boosting” function to do just so. That function is powered by purchasing xp with LDN. Users are able to boost their levels up between levels 1 and 30, but not to reach a higher level than 30. LDN consumed to take advantage of the boosting function will be accumulated in the reserve and compensation pools and can be used for future rewards.

3.15 Token Reward

Level Reward

If the user is at the tier stage, they can receive increased or extra rewards. Five percent of the social compensation pool will be divided into six at the end of each month and paid out equally to each level stage. These rewards are paid out at the end of each month and will be subject to the users’ level at that time, regardless of their level at the start of the month.

Formula:
The amount of tokens that each tier's users receive is:
(number of tokens assigned to each tier)/ (number of gamers at said tier)

※ The higher the tier, the lower the number of users, resulting in a higher amount of tokens distributed to a single high level gamer.

Social Reward

Content Creation and feedback are eligible for Token Rewards independently of XP Rewards. Social Rewards' Variable Factor consists of posts in units.

$$\text{Social Reward} = \text{Social reward token per Period} * \frac{\#\text{ of recommendations given to the corresponding post}}{\text{Sum of the number of recommendations for all posts}}$$

Users who receive rewards for creating content on the social platform will receive 75% of the total social reward and users who gave feedback will receive 25%.

ludenaprotocol.io | Copyright©2019. All rights reserved.

3.2 Opportunity

Both gamers and indie game developers have the opportunity to earn compensation for their activities in the decentralized Ludena Protocol, based on its influence structure. Gamers can accept a publisher's gameplay offer and in return they can earn rewards for acting out whichever mission or quest was laid out for them. Indie game developers can follow the marketing strategy that advertisers perform with a certain number of LDN, based on Ludena's compensation pool. Through Ludena Protocol's platform, indie game developers have an opportunistic chance to expose their game to many potential users.

User Compensation: Game Play

Game publishers can offer LDN to users as compensation for completing in-game missions or quests or even pre-registering for an unreleased game. These entities have full control over the compensation structure and the details of the steps required to receive said compensation. Once users successfully complete the instructions laid out for them by the publishers, the game developers are required to compensate completed missions as advertised.

Indie Game Developer

Device	Platform	Commission (%)
PC	STEAM	30%
	EPIC Store	12%
	Humble Bundel	25%
	ITCH.io	Developer choice
Console	GOG	30%
	Microsoft Store	30%
	Xbox Games Store	30%
	Nintendo eStore	30%
Mobile	Apple	30%
	Google Play Store	30%
Other	Mart	30%

Indie game developers can offer game rewards to users on a similar condition as game publishers, without having to endure the high costs of traditional publishing platforms through the Ludena Ecosystem.

ludenaprotocol.io | Copyright©2019. All rights reserved.

LDN accumulated in the compensation pool of the ecosystem are paid out to cover the rewards offered to users who play published indie games on the Ludena Protocol platform. LDN provided to such game developers in the compensation pool is calculated by summing the number of users, number of recommendations, and amount of activities during the period of the indie game's availability on the platform. The developer withholds the rights to design its own LDN compensation structure and is required to follow through with the amounts it promised to participants.

3.3 Reciprocity

Among the data generated from the Ludena ecosystem, transaction-related data is recorded in the Luniverse main chain in the form of Tx, and other less important data is recorded on the side-chain. All inputted data is disclosed transparently due to the nature of the blockchain. Gamers and developers participating in the Ludena ecosystem can view this data and use it for decision making, etc.

In addition, items are essential during gamers' game play activities. Even though the said item's transaction is public, the acquisition of the item, based on the probability of each game, is uncertain, and for some items it takes a lot of effort to acquire it. Supporting gamers' transactions in line with their respective circumstances is an act of increasing the effectiveness of both sellers and buyers.

Within the escrow system, users can easily trade amongst one another. Easy access to the in-game item marketplace can bring sufficient liquidity and will play an important role in understanding the economic scale of the Ludena Protocol ecosystem.

User Database

Records derived from content creation, feedback, game play or item trading are stored revealing only the level of personal information that can identify a user. In fact, the data stored in the blockchain is not large-capacity, such as images, videos or long text. Those items are stored in a corresponding database. Data stored in the blockchain is data related to key activities.

ludenaprotocol.io | Copyright©2019. All rights reserved.

3.4 Virtual Item Trading

P2P Escrow System

Ludena Protocol will initially offer the same escrow system. In the future, however, escrow will be provided using smart contracts, a blockchain platform technology. Ludena Protocol's escrow comes with no complex procedures and at a lower cost than traditional centralized methods(free of charge on Luniverse).

Subjects that can be traded with escrow can also be used to broker transactions of other items used in games, including games that can be played on the Ludena Protocol, unless there are special trade sanctions imposed by game developers. This is a low cost compared to the service fees imposed by the companies that broker the transaction of other similar items in Korea. Low transaction fees facilitate trade and make it easier for gamers to reveal their consumption activities without any distortion of fees.

If this is linked to a social media service, information from its rich origin can be used to help negotiate the appropriate price.

Non-Fungible Token (NFT)

Ludena Protocol plans to support escrow service using non-fungible tokens in the future. While each LDN token will be homogenous, as is the nature of utility tokens, the non-fungible tokens will be completely heterogeneous from one another, with even the slightest different in information to make it unique.

While fungible tokens are simply a medium of trade, so it can be useful for " Counting," but it is difficult to include special data on the token itself. In contrast, non-fungible tokens set up the array and stores data at specific coordinates on the array. If the contents created on the platform tokenize into non fungible tokens, then smart contract can allow users to easily trade assets.

Derivative Data Trade

Ludena Protocol's trade volume data, along with other transaction details are lucrative sales statistics, expected to be sought after by game companies. The scale of transactions within the ecosystem demonstrates its purchasing power. This information can give potential new clients the incentive to enter the ecosystem as well, thereby contributing to the enlargement of the ecosystem and its benefits to all participants. In addition, this critical collection can be used as a basis for decision making for Ludena Protocol's management strategy.

ludenaprotocol.io | Copyright©2019. All rights reserved.

4. Business Model & Strategy

 | Copyright©2019. All rights reserved.

4. Business Model & Strategy

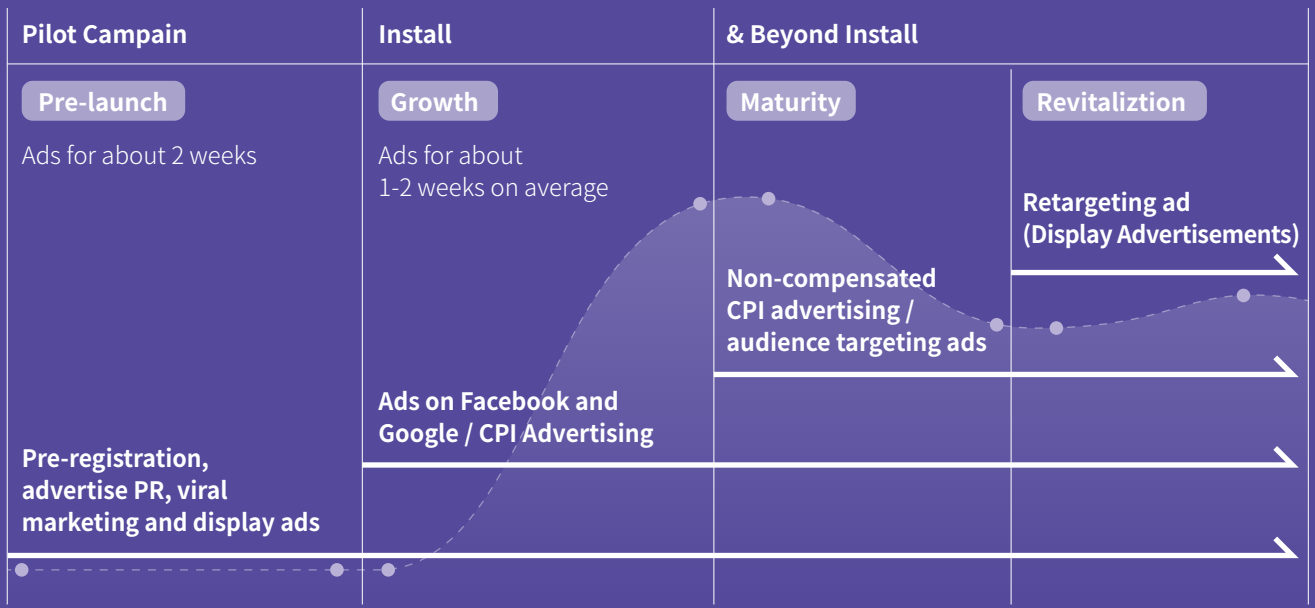
Ludena Protocol's ecosystem is comprised of three separate business models: Mobile advertising (B2C), game marketing packages (B2B) and digital item sales (B2C). During the immediate stage after launch, these three business models will focus first on the Korean market, fitting to the established user base. Eventually, these business models will scale to other new, international markets, on a country by country approach.

4.1 Business Models

After playing a hyper casual game on the Ludena Protocol gaming platform, matched users will be able to contact one another on the platform through the provided chat service embedded in the system. Within that service, there will be options to gift other users virtual items, which cost users 'x' amount of LDN to purchase. These purchases result in 100% profit model structure for Ludena Protocol.

Within the games themselves, indie game developers have the option of selling boosts or items. Those virtual items will need to be purchased using LDN token. Ludena Protocol will take 3-5% of these sales from the game developers.

4.12 Ad revenue



Average game life cycle and corresponding marketing strategy - IGAWorks

ludenaprotocol.io | Copyright©2019. All rights reserved.

The figure above shows a table of the average game's lifecycle, which is divided into four stages: Pre-launch, growth, maturity, and revitalization. At the bottom of the graphic, it depicts optimal marketing strategies which correspond to each stage of the lifecycle. The strategies to be used for Ludena Protocol are the "Pre-registration" and "Banner display advertising."

4.11 1:1 Gaming Platform

Banner display advertising

Ludena Protocol's mobile application will include banner ads, open to all advertisers, using services by Google and Facebook. In addition to in-app banner ads, Ludena Protocol will display lock-screen ads. Even if the app is not open, this service will be running in the background of users' smartphones. At regular intervals, the users' lock screens will display an advertisement instead of their original lock-screen wallpaper. Users have the option to opt-out of the lock-screen type of advertisement should they choose. For users who autonomously allow lock-screen ads to run on their phones, once they successfully "see" an ad by simply unlocking their phone, they will be rewarded with xp in return.

4.12 Game Marketing Packages

Pre-registration

Game publishers offer incentives to users who pre-register to download their new game in the Google Play or App store before launch. This is a common practice in the industry to build hype for an unknown game. Typically, users who sign up to " pre-download" a mobile game will get a coupon to use for special game items, etc. Game publishers pay Ludena Protocol to have these incentives on display to its userbase. Upon Ludena Protocol's ecosystem's successful establishment, it will provide opportunistic incentives to its userbase through, by not exclusive to, the aforementioned methods. However, to reiterate, Ludena Protocol does not directly control gamers' activities or intervene in derived compensation activities.

Pre-registration or game pre-order incentives from publishers are to be marketed to Ludena Protocol's user base in a dedicated tab within the app and additionally through banner display or lock-screen ads. Interested game publishers will need to pay Ludena Protocol directly in LDN tokens to market to the user base and showcase their new games to them, with the intention of acquiring organic users. Gamers autonomously make the decision to accept such incentives. When users complete

ludenaprotocol.io | Copyright©2019. All rights reserved.

the activities outlined for them by the game publishers, they receive their reward in LDN tokens. Considering the initial user base of the ecosystem, it is expected that this will create synergy between the users and publishers participating on the platform.

4.13 Digital Items

1:1 Games Within the games that will be offered on Ludena Protocol's gaming platform, indie game developers have the option of selling in-game boosts or items. Those virtual items will need to be purchased using LDN token. Ludena Protocol will take 10% of these sales from the game developers.

Chatting Feature After playing a hyper casual game on the Ludena Protocol gaming platform, matched users will be able to contact one another on the platform through the provided chat service. Within that service, there will be options to gift one another virtual items, which cost users 'x' amount of LDN to purchase. These purchases result in a 100% profit model structure for Ludena Protocol.

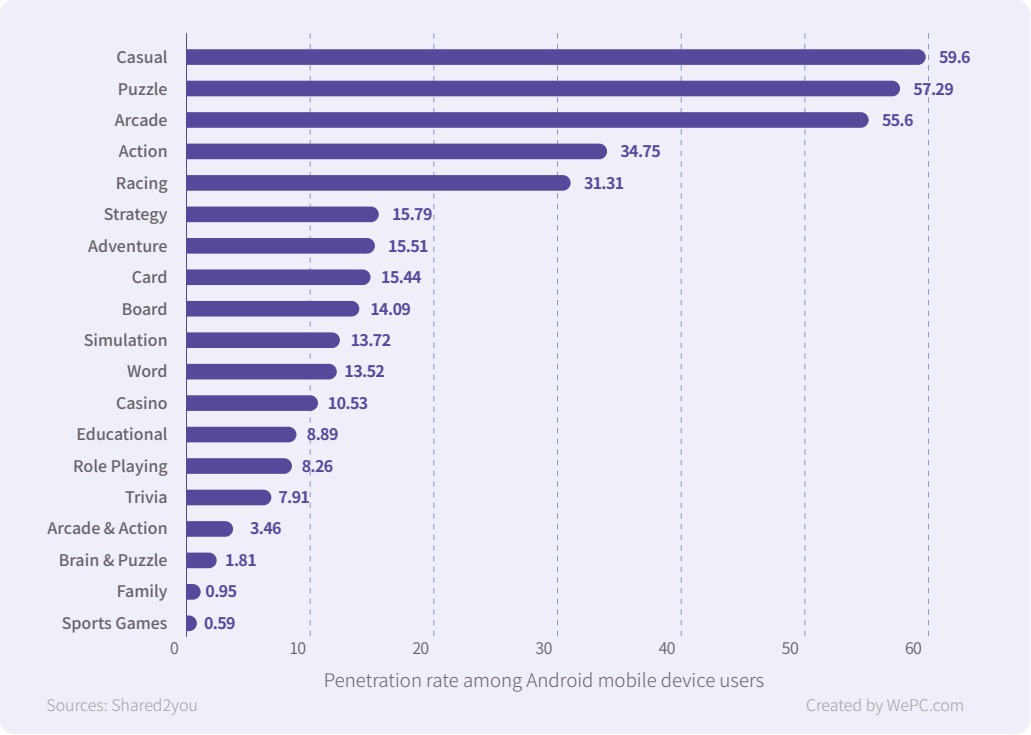
4.2 Growth Strategies

4.21 Hyper Casual Game Platform

Ludena Protocol's plan to incorporate an HTML5 gaming platform into its ecosystem is all in the hopes of driving up usership and creating a new vertical for existing users to improve their levels of satisfaction. The ultimate goal of Ludena Protocol, for its users, is to link gamers to fellow gamers and provide a platform to ultimately have fun while finding friends! Many people want to make new connections in a way that feels organic and not forced. The hope is that even light gamers will see this as an opportunity to make new friends from around the world in a lighthearted way, and Ludena Protocol can benefit indirectly from these new connections from the sales of virtual gifts and overall increased engagement.

ludenaprotocol.io | Copyright©2019. All rights reserved.

Worldwide Market Reach of the Most Popular Android Gaming App (September 2017)



4.22 YouTube Channel

Ludena Protocol's initial DApp, GameTalkTalk, has a Korean language YouTube channel, which it began in late 2016. The channel has grown to over 90,000 subscribers and has a 200% year over year growth rate. This channel provides promotional content for games that user GameTalkTalk for marketing purposes. Ludena Protocol is making efforts to grow this channel by increasing the content it pushes out onto the platform and by reviewing analytics to make more appealing videos. The YouTube channel is a secondary strategy to drive viewers to download the app.

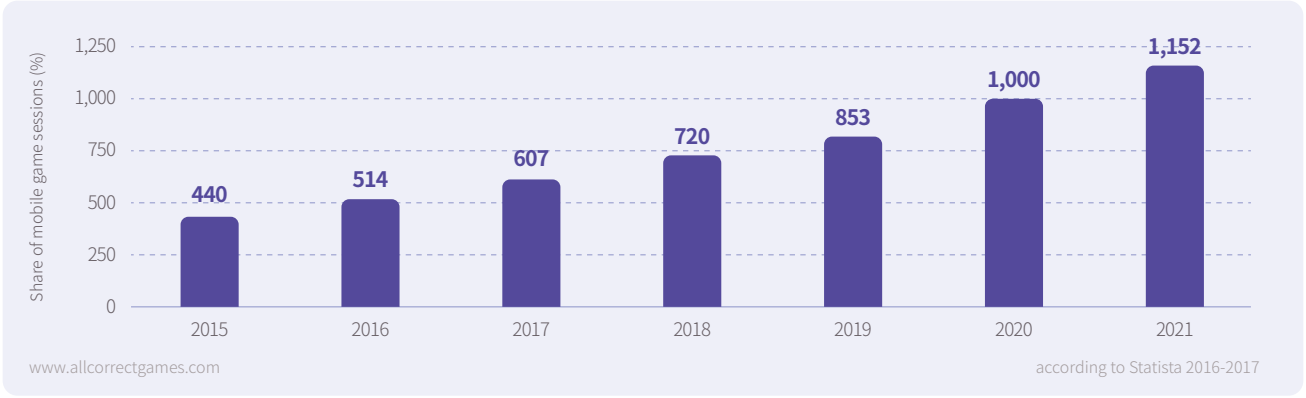
4.23 Overseas Expansion Strategy

The 3 million users already using GameTalkTalk will be seamlessly carried over to the DApp's global version, integrated into Ludena Protocol's ecosystem. Currently, the GameTalkTalk platform is only available in the Korean language and has therefore created a barrier for itself to exclude any users outside of the Korean market. The global, DApp version of the app will be available in multiple languages. However, expansion into foreign nations successfully requires a heavy investment in marketing. That being said, Ludena Protocol has formed some massive local partnerships in the countries they wish to launch in.

ludenaprotocol.io | Copyright©2019. All rights reserved.

One of the initial target markets is Indonesia, due to a strategic partnership formed with ABCC (Asia Business Convention Center), a fintech solution mobile application with a network of 170 million members.. This entity is connected with the country's government-backed banks, government-backed telecom operators and is widely trusted nationwide. Ludena Protocol will be featured prominently on the app through banner ads, displaying various sign-up or download incentives. Any profits received from users that originated from the ABCC application will be shared with the entity.

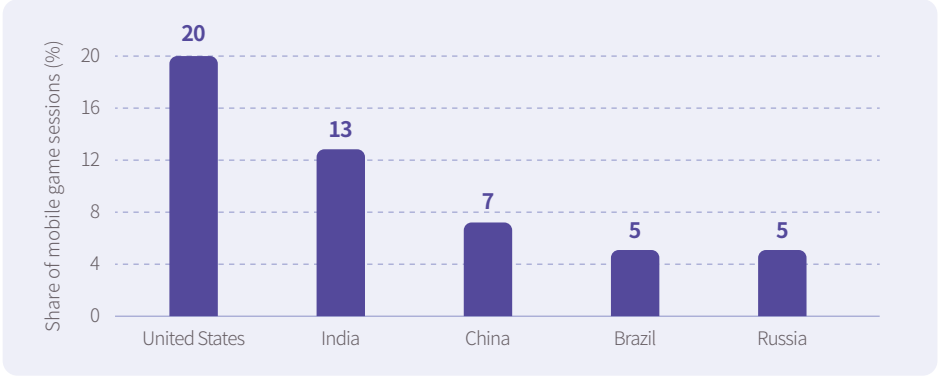
Reveneue in the Mobile Games market, million USD



Forecasted revenue for mobile gaming market in Indonesia

Another initial market is India, through an exciting partnership with telecom giant Reliance Jio. The entity's nearly 350 million users can access Jio's mobile portal for important billing information, etc. Similar to the partnership with ABCC, Ludena Protocol advertisements will be displayed on the telecom firm's portal and any generated revenues from Jio originated users will be shared with Jio itself. This partnership is expected to be very lucrative for both parties, considering the massive appeal of mobile games in the Indian market.

Worldwide Leading Mobile Gaming markets based on Share of Mobile Game Sessions (April 2017)



ludenaprotocol.io | Copyright©2019. All rights reserved.

5. Technology

 | Copyright©2019. All rights reserved.

5. Technology

Ludena Protocol is currently in its technological development stage. The application will consist of a HTML 5 gaming platform, an embedded crypto currency wallet and will run using the Luniverse blockchain.

5.1 Present Day Technical Issues

The following will illustrate some technical issues associated with the operation of large scale blockchain networks and will justify Ludena Protocol's choice in technical support systems.

Bloating

The blockchain links every new block to the previously created one to form a chain. For consensus algorithms, all nodes must store data for every block that is created. At network launch, the amount of data that each node must store is incremental, but over time, the amount of data that builds up on each node increases exponentially. This requires additional auxiliary memory to be installed on existing nodes, and new nodes will require significant initial input costs. This acts as a load to the network and increases the cost of maintenance.

Throughput (Scaling)

Essential to a public-facing network with a server-client structure is computation/processing/response rates. When a client sends a request, the slower it takes for the client (customer) to commit to the request and to respond to the commitment, the more inconvenience the client (customer) will experience in using the service.

The response and commitment rate in a blockchain network is called TPS or transactions per second. TPS is the number of transactions that can be processed per second. Bitcoin consensus is roughly 7TPS, whereas Ethereum is around 15-20TPS. If the number of transactions per second is only between 7 and 20 on a platform with tens of thousands of concurrent users, the bottleneck of multiple concurrent users can paralyze the network for a long time. Therefore, high TPS is essential for reliable service operation.

Realization

Most importantly, is the time needed to complete the development of that blockchain network. If you've raised funds, but it takes years to actually implement, it's too late for the trend, and it's not cost-effective. Blockchain projects need to be able to quickly implement the detailed services of their intended blockchain network.

ludenaprotocol.io | Copyright©2019. All rights reserved.

5.2 Ludena Protocol's Blockchain Service Platform

Luniverse

Ludena Protocol has decided to harness the power of the Luniverse blockchain service platform (BaaS) developed by Lambda 256, the research arm of Upbit's parent company Dunamu. Luniverse uses the PoA (Proof of Authority) algorithm, which grants authority to 25 block creators and has speeds of up to 2000TPS with no gas fee.

Customers who want to use the Luniverse platform can create side chains based on several nodes provided by the entity, upon token issuance on its mainframe.

The following benefits arise from the usage of this platform:

i) All activities that gamers perform on the platform are recorded publicly as Transaction ("Tx"), providing reliable data for gamers to ensure that the Ludena Protocol is rewarding them fairly.

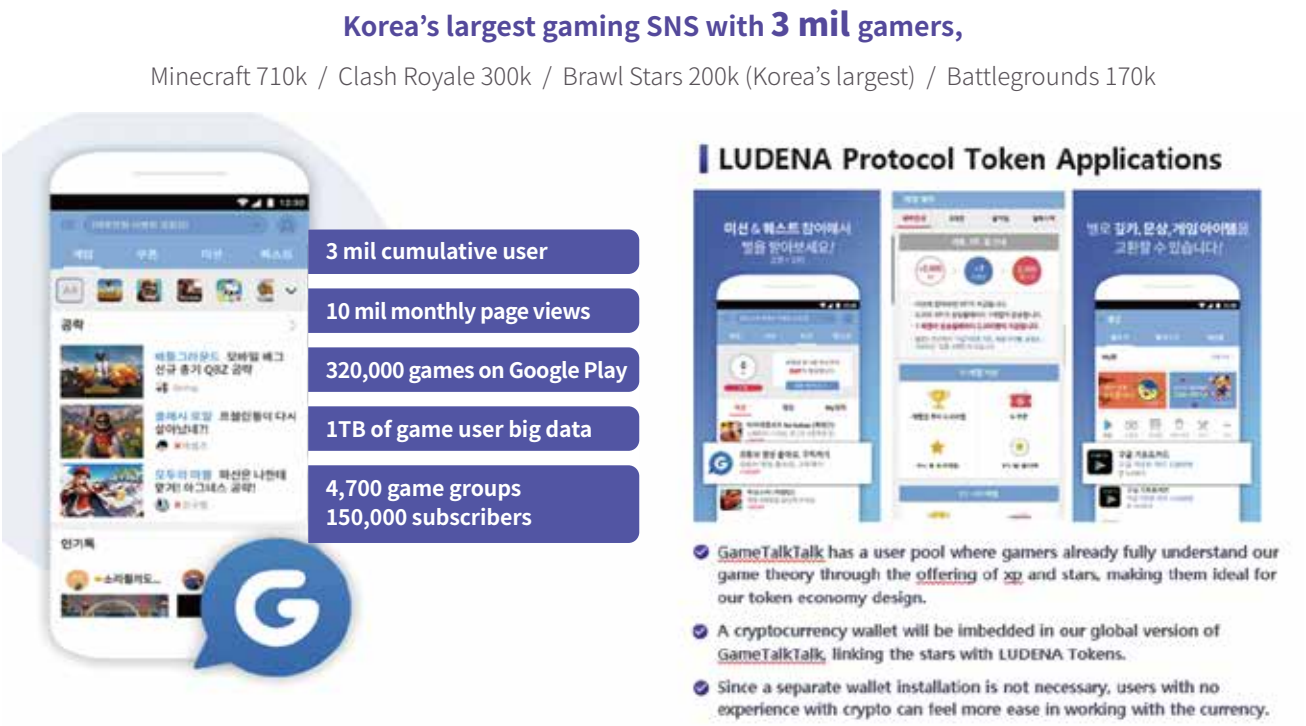
ii) Important Tx generated during the operation of the sidechain is recorded in the Ludena main chain, while additional information is stored in the sidechain. This allows efficient side-chain throughput to be maintained independently of the main chain's block generation performance, and solves some of the main chain's blotting issues and side-chain's sensitive information exposure.

iii) Engagement compensation, gameplay compensation, and item trading are all key features that will be implemented in the Ludena Protocol. These three result in a large amount of Tx. Gas commission fees in Tx may act as transaction costs, thereby hindering activities on the platform. However, when Tx occurs on the sidechain, there is no gas charge.

iv) The Luniverse platform comes with a ready-made crypto wallet from BitBerry. BitBerry's wallets are compatible with users' social media accounts, making it extremely simple for people unfamiliar with crypto. Additionally, easily-implemented, basic smart contract functions are achieved by configuring the wallets with APIs.

ludenaprotocol.io | Copyright©2019. All rights reserved.

5.3 GameTalkTalk



GameTalkTalk: Ludena Protocol's first Dapp

DApp Description

The first DAPP to be run on the Ludena Protocol is GameTalkTalk, which is a massive gaming social media application with more than 10 million monthly page views per month. It has more than 1TB of game users' data and can sync more 320,000 games published in the Google Play store. GameTalkTalk displays each users' gaming data because it syncs with the games downloaded to their mobile devices. Users can share achievements they've made in each game with their friends and the overall community. The Ludena Protocol DApp has a tab where users can find groups dedicated to specific games. At present, there are over 4,700 game groups and a combined 150,000 active users, sharing a great amount of content throughout.

Users, even those completely unfamiliar with crypto currencies, will be able to easily participate in the Ludena Protocol ecosystem, whose value runs on the Ludena token (LDN). As there is already an embedded, user-friendly crypto wallet available in the application upon download, it is expected that user anxiety due to the inclusion of crypto currency will be eliminated.

ludenaprotocol.io | Copyright©2019. All rights reserved.

6. LDN Token

 | Copyright©2019. All rights reserved.

6. LDN Token

6.1 LDN Benefits

Benefits of token incorporation on a blockchain platform are typical ones relating to the crypto currency space. For all participants in the ecosystem, the movement of value results in relatively low fees compared to traditional financial methods. Due to the transparency of transactions on the blockchain, all participants can feel reassured that the system is fair and unbiased. The benefits are outlined as follows:

	Token Inclusion	**Token Exclusion**
Transparency	High	Low
Currency Transfer Fees	Low	Relatively High
Incentives	Automated, action-based compensation	Customized to each company No clear standard
Governance	Decentralized	Developer choice

6.2 LDN Use Cases

The LDN token is a coin issued on the Luniverse blockchain. It has a variety of use cases, but the following 6 are considered its most beneficial ones:

01. Gamers can use LDN to purchase or sell virtual items in either the in-game item exchange platform or within Ludena Protocol's gaming platform.

02. Users can exchange their LDN for tangible items from convenience stores, etc.

03. Game publishers can use LDN to promote their games on the platform, and lock them up to reward gamers for playing their games.

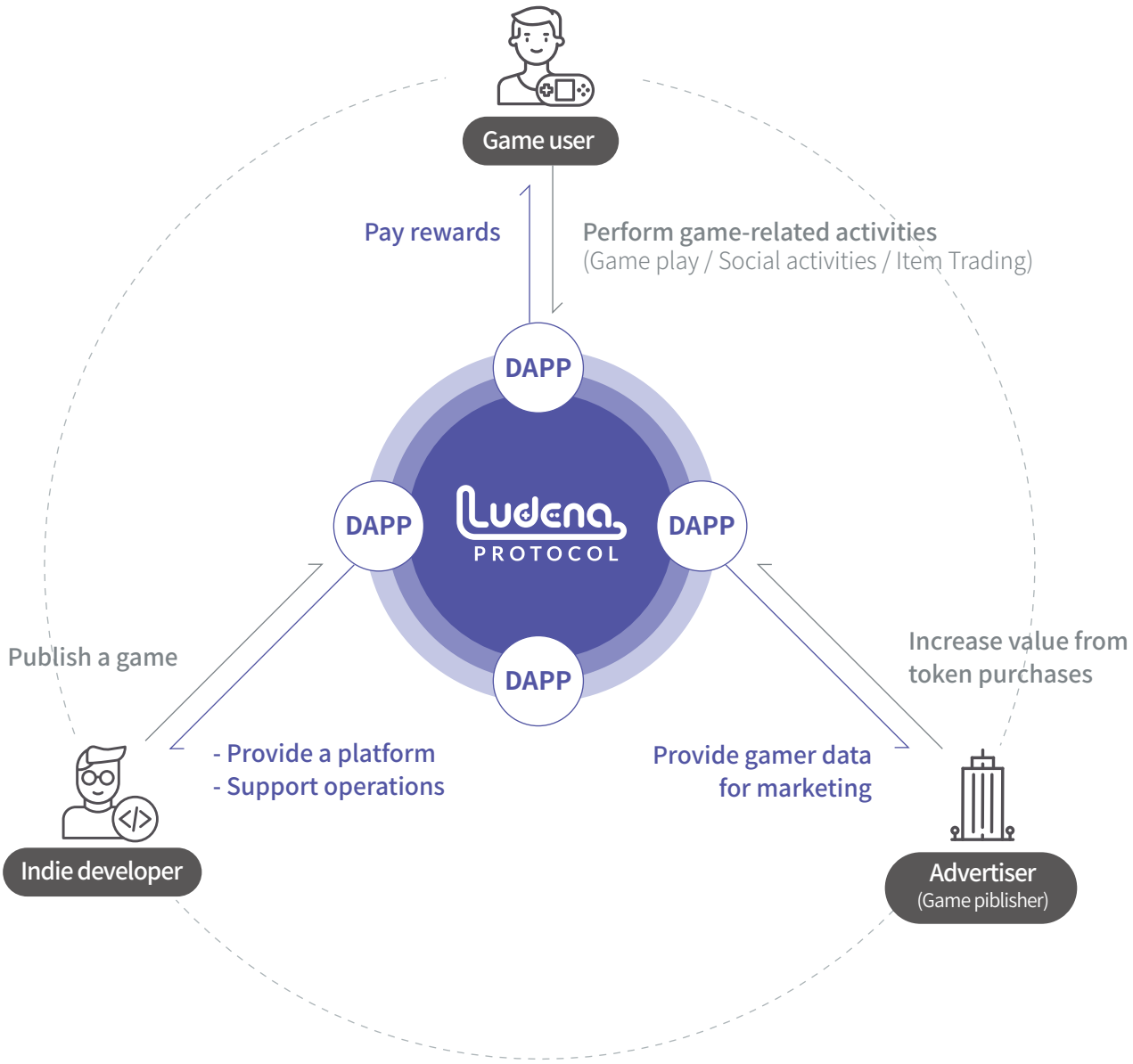
04. Indie Game Developers can use the LDN they receive from the compensation pool to provide rewards to gamers who play their games.

05. Gamers receive LDN as compensation for the value of their contents in the ecosystem and for playing games.

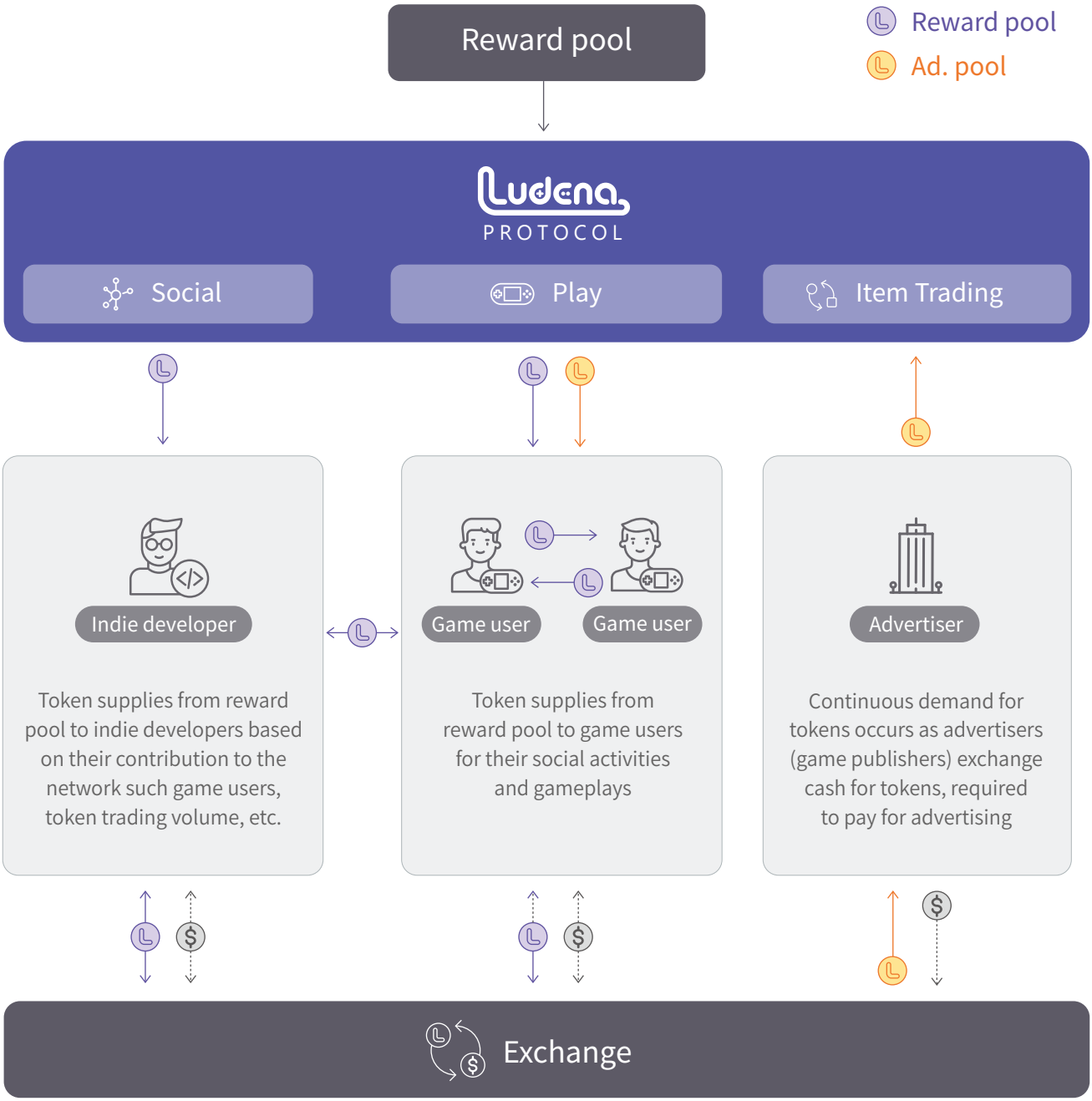
06. Gamers can use the level boosting function to quickly level up in the ecosystem using LDN.

ludenaprotocol.io | Copyright©2019. All rights reserved.

6.3 LDN Token Flow

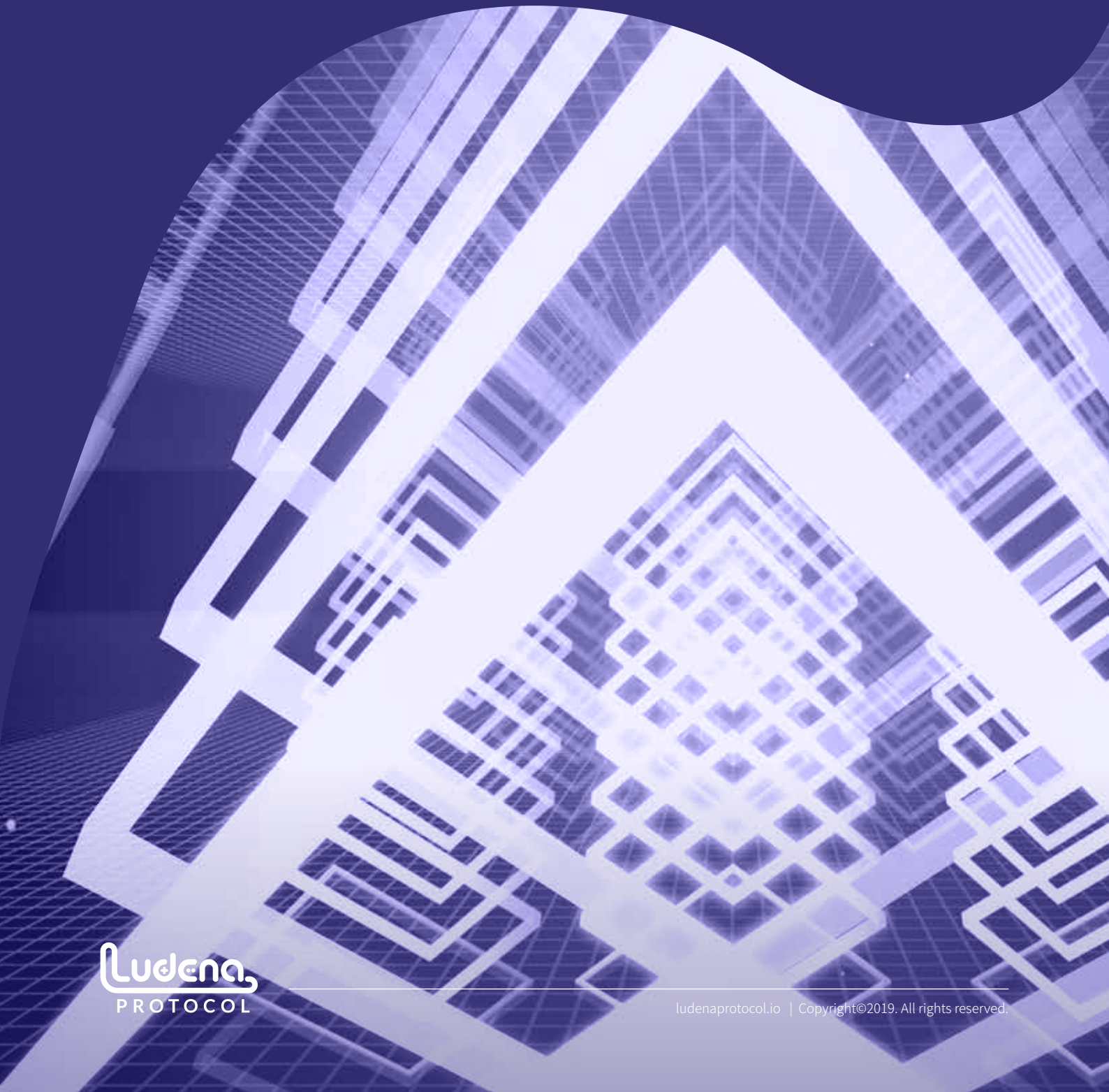


ludenaprotocol.io | Copyright©2019. All rights reserved.



ludenaprotocol.io | Copyright©2019. All rights reserved.

7. Company Results &
8. Community Support



 | Copyright©2019. All rights reserved.

7. Company Results

The Seven Deadly Sins

Company	Netmarble
Pre-registration	29,476 people
Note	The Seven Deadly Sins IP

Lineage2M

Company	NCSOFT
Pre-registration	92,212 people

V4

Company	NEXON
Pre-registration	43,683 people

ludenaprotocol.io | Copyright©2019. All rights reserved.

8. Community Support

After 7 successful years of GameTalkTalk's history, here's some of what the community had to say about their experience:

딸기오징이 & 황윤호tv 2019.09.14

★★★★★

I have to give a 'Like' to GameTalkTalk! There's a reason why GameTalkTalk is the best! It's really nice to get Brawlstars jewelry, gift cards and so on! GameTalkTalk is a must-install app. (Thank you!)

김주노 2019.08.15

★★★★★

(max55) It's the best app and it's improved a lot from when I first downloaded it. There's a constant effort from the development team. The design has become neat and you can easily see the features, but I don't think it's been promoted enough yet. I think we need to do more marketing, so I'd like to take on that task. I really want this app and its community to grow. We are the best!~

sil E 2019.09.14

★★★★☆

Great! I can communicate with other users and I can even buy gift cards with the stars I get just from texting. I'm really taking advantage of this app! It would be great if I could use a star to change my nickname.

The community, above all else, is taken very seriously and the company is always open to all suggestions. In the global, DApp version of GameTalkTalk, Ludena Protocol will take user "Sil E's" recommendation and ensure that users can change their nicknames through star usage.

ludenaprotocol.io | Copyright©2019. All rights reserved.

9. Roadmap

 | Copyright©2019. All rights reserved.

9. Roadmap

Ludena Protocol's team is currently working to launch the global version of its GameTalkTalk DApp. The LDN token is scheduled to be listed on major exchanges starting in Q1 2020 and after successful testing in the Korean market, plans to be expanded to a global audience, starting in the home countries of strategic partnership members such as: India and Indonesia. Ludena Protocol's userbase currently consists of 3 million members, however, by Q4 of 2020, they will strive to boost that figure to 20 million through successful partnerships, lucrative membership benefits and enjoyable, addicting mobile games.

Q1-Q4 2018
- Business model construction
- Token economy design

Q1-Q3 2019
- White paper Ver 1.0 preparation
- Prepare the Platform

Q4 2019
- White paper release
- Issue tokens
- **Private Sale**
- Build a cryptocurrency wallet payment solution

Q1 2020
- **Launch Beta GameTalkTalk Dapp**
- Complete global version development
- Publish P2P mini-games on the platform
- **Launch Game Screen**

Q2 2020
- Make the GameTalkTalk Dapp available on the Google Play store
- Start global service (Launching initially in target markets, such as; **Indonesia, India, Vietnam**)
- Enable in-game items trading

Q3-Q4 2020
- Expand global service **(Japan & Southeast Asian countries)**
- Goal: **3 mil** YouTube subscribers & **20 mil** global game users

Q1-Q4 2021
- Expand global service **(North America & China)**
- Goal: **5 mil** YouTube subscribers & **50 mil** global game users

ludenaprotocol.io | Copyright©2019. All rights reserved.

10. Team Overview

 | Copyright©2019. All rights reserved.

10. Team Overview

10.1 Ludena Protocol Core Team Bios

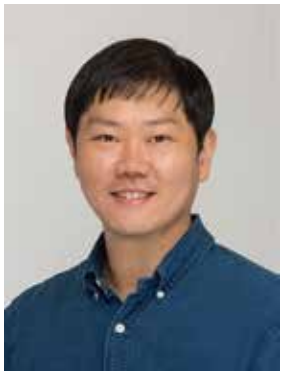
Ludena Protocol has a steadfast team with proven success working with mobile application business models. Additionally, they are industry veterans in both the game and digital advertising space. Get more information regarding team member's professional history, achievements and more, on ludenaprotocol.io.

Joshua Kim, CEO

Ludena Protocol's CEO was one of the first experts in wireless internet connection in South Korea. Taking this expertise, he served as CTO at PSYNET, a mobile service provider, and incubated businesses with SKT, KT, and Microsoft in fields including: mobile news, wireless portals, etc. In particular, social mobile apps launched by Joshua, such as 'Hi There' and 'LiveScore' have produced remarkable domestic results since their release. Our CEO has the knowhow and cultural acumen to proactively helm mid-sized companies and grow them to be great success stories.

Jack Lee, CSO

After founding his own ad agency, Flex, in 1999, Insun became a multimedia marketing heavy hitter, working with Korea's largest companies such as: Samsung Electronics, CJ and KT. He has been an online advertising and game expert who has served as a game lecturer at Hongik University's Graduate School of Film and Video Studies since 2007. He has won many awards including the 2005 Samsung Electronics Anycall Award.



Matthew Kim, CTO

With a passion for PC gaming, Matthew developed the TWIMNET client, the first Internet game relay server in Korea. Later, in 2002, he was a developer for the virtual machine division at PSYNET, where he is credited for the contribution of many features such as: Pantech, MMS, video call, etc. which earned him the title of #1 general assessment agency of AT&T for five consecutive years.

ludenaprotocol.io | Copyright©2019. All rights reserved.

Peter Kim, CFO

After graduating from Hanyang University's Department of Electronic Engineering, Peter worked for SHARP's strategic planning office and grew venture firm, PSYNET, to generate 10.4 billion won ($10M USD) in sales in 6 years, through strategic financial decision-making and investment. Peter is an expert in financial modeling and business financial analysis.

Amanda Marie Joki, Global Marketing Manager

With over 5 years of experience working in Marketing and Portfolio Management in the financial services industry in Canada, Amanda had an instant passion for crypto currencies. Since 2018 Amanda has been specializing in Marketing for blockchain projects and has a solid background in its technology and token economics. She has over 4 years of Korean business experience, working at household labels such as Hyundai Motors.

10.2 Project Advisors

SangRyul Choi, CEO, Tin Robot Studios

SangRyul has priceless global game launching insights through numerous game advertising marketing experiences, and serves as an advisor for the overall system of the Ludena global gaming platform. His expertise includes: Individual game production, pipeline configuration and video production for marketing purposes for an international audience.

DongKyun Kim, CEO, Dayamonz

He has experience in the success of popular mobile games such as "God of High School" and based on that, he is responsible for the playability and technical verification of the hyper casual games before they hit the platform and advise on the elements of the gaming platform's gimmicks.

ludenaprotocol.io | Copyright©2019. All rights reserved.

10.3 Strategic Partners

Through joint operation with i-Cash in Indonesia, ABCC has secured 170 million members, involved in over 400 million communities, 800 schools and 6,000 chains of I-Cash's infrastructure network. This project will be commercialized from January 2020, and be the pinnacle fintech solution in Indonesia.

IEOC is an international, e-Sports, 'Omnipotent' organizing committee established in the UK and is currently operated by the organizing committee in 70 countries.

The Atae Group was established to promote economic exchanges among Asia-Pacific countries (in the field of international economic exchanges) during the project of the Asia-Pacific Peace Fund, a foundation.

10.4 Blockchain Partners

Vestigium provides differentiated consulting services based on a wealth of in-depth start-up, venture capital, PEF, investment attraction, M&A, and business development experience. In addition to the growth of early start-ups, Vestigium is providing practical assistance to corporate customers seeking to expand by combining new areas such as blockchain with their existing businesses, and is committed to growing with them as partners.

In addition to its own high-performance blockchain, Luniverse provides all the necessary environment aspects crucial for successful DApp development, including a convenient and secure development tool, a blockchain infrastructure operating environment, and a variety of embedded crypto currency wallets to help users use blockchain services more conveniently.

BlockTree is a security, computing, IT technology, and multi-exchange development brand, creating blockchain-based IT networks and revitalizing existing infrastructure, particularly in media. BlockTree proposes various out-of-the-box blockchain solutions with a focus on capital preservation.

ludenaprotocol.io | Copyright©2019. All rights reserved.

10.5 GameTalkTalk DApp Clients

Over the past 7 years, GameTalkTalk has worked with over 200 clients to provide marketing solutions for their user acquisition pain points. These customers have been left satisfied with the results achieved within the GameTalkTalk platform and have been return patrons during its history.

Ludena Protocol looks forward to expanding this growing list as they partner with local gaming companies in relation to the future international markets they will launch in.

ludenaprotocol.io | Copyright©2019. All rights reserved.

11. Token Details & Distribution

ludenaprotocol.io | Copyright©2019. All rights reserved.

11. Token Details & Distribution

The LDN token will be available for purchase on major exchanges in Q1 of 2020. Tokens are required for the platform's key value propositions.

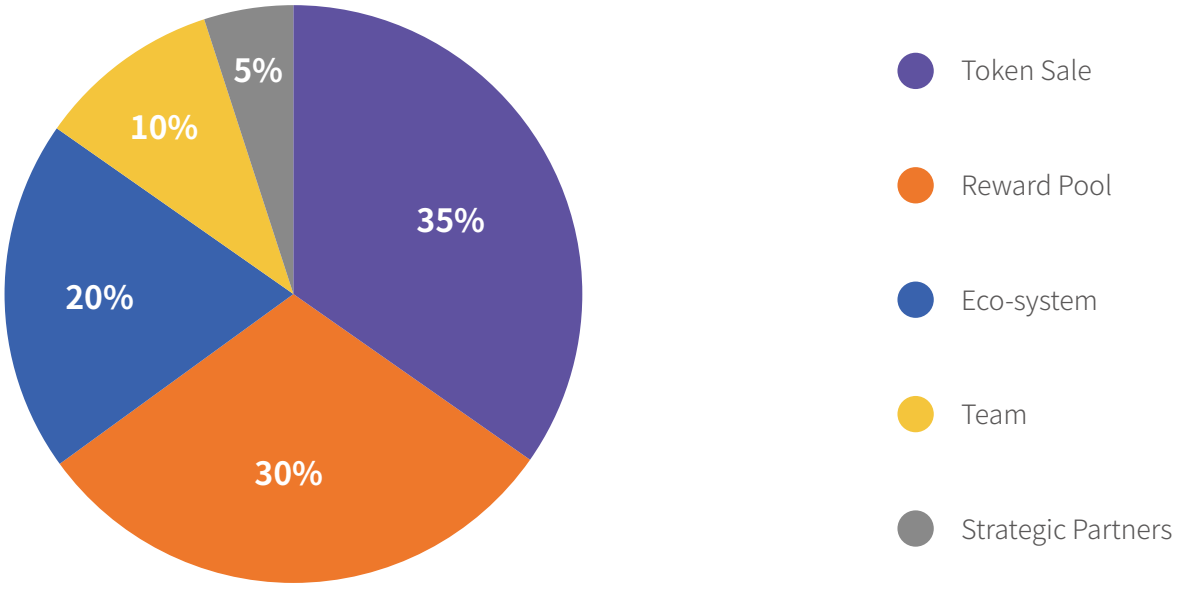
The total LDN supply will be 1.2 billion tokens. The total sale allocation of this portion is slated to be 35% or 0.42 billion token. 0.36 billion tokens, or 30% will be allocated to the reward pool, which will be used to recruit additional users and to incentivize platform users' active ecosystem participation through fair compensation.

Currency Code	LDN	
Currency Type	Utility Token	
Token Sale Allocation	420,000,000 LDN	
Hard Cap	$2,300,000 USD	
Total Supply	1,200,000,000 LDN	
Private Round Price	1 LUDE = $ 0.0067	
Bonus	20% discount	
Accepted Curreny	USDT / BTC / ETH	
Lock-up Terms	**Team** 2 years vesting	- After 6 months : 10% - 15% every 3 months thereafter
	Private Sale 6 months vesting	10% upon listing, 15% per month thereafter
	Public Sale	Entire amount is unlocked upon listed

*Lock-up release period begins after the first exchange listing

ludenaprotocol.io | Copyright©2019. All rights reserved.

Token Allocation



ludenaprotocol.io | Copyright©2019. All rights reserved.

12. Disclaimer

This whitepaper is for general information purposes only in relation to the Ludena Protocol project and the information herein is current as of the date on the cover page. This white paper is a continuous work in progress and subject to review and revision. We reserve the right to update the white paper at any time.

The goals set forth in this whitepaper are not guaranteed to be achieved or finalize in the specified desired result. Absolutely no future plans, goals, etc. outlined in this document for the Ludena Protocol project should not be regarded as fact.

Participation in a token sale can be highly speculative and risks include total loss. A prospective purchaser should thoroughly review the token sale memorandum and carefully consider all the risks involved. This whitepaper does not constitute the offering of a security. In many regions, token sales are still highly scrutinized and regulations are still not fully established. Furthermore, some entities view that token sales may qualify as a sale of investment contracts.

This white paper is not in any way a recommendation to purchase LDN tokens. There is a significant risk of participation in the purchase of LDN tokens and thorough consultation with legal and tax experts should be done beforehand, as regulations regarding crypto currencies are constantly changing around the world.

This whitepaper or any part hereof may not be reproduced, distributed or otherwise disseminated in any jurisdiction without explicit consent. The distribution or dissemination of this white paper or any part thereof may be prohibited or restricted by the laws or regulatory requirements of any jurisdiction. In the case where any restriction applies, you should obtain legal advice on any restriction which is applicable to your possession of this white paper or such part thereof (as the case may be) at your own expense.

Persons to whom a copy of this white paper has been distributed or disseminated, provided access to or who otherwise have the white paper in their possession shall not circulate it to any other persons, reproduce or otherwise distribute this white paper or any information contained herein for any purpose whatsoever not permit or cause the same to occur.

No regulatory authority has reviewed, examined or approved of any of the information set out in this white paper. No such action has been or will be taken in any jurisdiction.

The original version of this whitepaper is in English. Any discrepancies in translated versions will refer to the English language version, which serves as a precedence.

ludenaprotocol.io | Copyright©2019. All rights reserved.

Ludena PROTOCOL

Gamified Social Platform
for Worldwide Gamers

ludenaprotocol.io