



**ZK-Rollups, Scalability and dApps**

CARMIN LABS

Last Updated on August 24, 2022



A detailed 3D rendering of a blood vessel. The vessel walls are shown as a textured, reddish-pink surface with fine ridges and grooves. Several red blood cells are visible, appearing as biconcave discs with a darker red center and a lighter red outer rim. They are scattered throughout the vessel, some in the foreground and some further away, creating a sense of depth. The overall color palette is dominated by various shades of red, from deep crimson to bright, almost white highlights on the vessel walls.

Blood is

## Essential to life

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**Blood circulates through our body and delivers essential substances like oxygen and nutrients to the body's cells. It also transports metabolic waste products away from those same cells. There is no substitute for blood. It can't be made or manufactured.**

**Generous blood donors are the only source of blood for patients in need of a blood transfusion.**





[Carmine: A Rich and Vivid Red]

Carmine means a rich and vivid red color and is regarded as a blood color.

Like a blood, we believe CARMIN will be 1) VITAL, 2) IRREPALCEABLE, and  
3) THE ONLY SOURCE OF BLOCKCHAIN beyond a Mainnet.



## **Market Trend**

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## Landscape of Mainnet Project in Korea

- ❑ No Company in Korea has Original Technology of Blockchain
  - ❑ Klaytn, Lamda 256: Ethereum-based Mainnet
  - ❑ Samsung Nexledger, LG Monachain, KT Gigachain: Hyperledger Fabric-based Mainnet
  - ❑ CARMIN Has Our Own Consensus Algorithm and Original Blockchain Technology
- 
- **CARMIN Mainnet 1.0 Meets Most of ETRI's Nine Solutions To Be Resolved**
  - **Considering International Expansion with More dApps and Alliance**

## Mainnet Comparison Chart

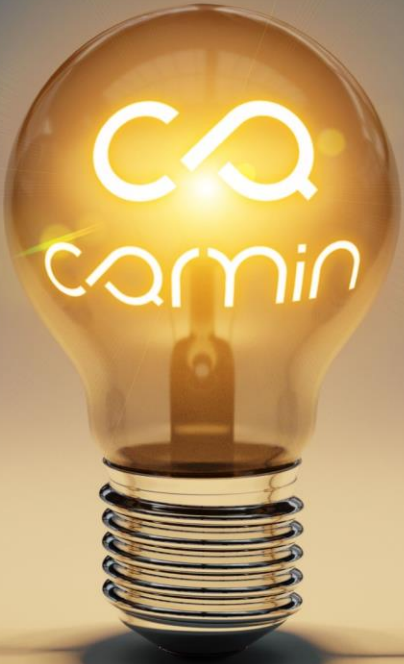
OS	Finality	Speed	Consensus	Virtual Machine	Demonstration	Architecture
CARMIN	1~5 sec	<ul style="list-style-type: none"> <li>1,000 TPS(Global)</li> <li>3,000 TPS(Asia Pacific)</li> <li>8,000 TPS(Local)</li> </ul>	PoS	CARMIN Commit Engine	Mainnet	Layer2-Blockchain
Ethereum	1.5 min ~	15 TPS	PoW	EVM	Mainnet	Single-Blockchain
COSMOS	3~7 sec	1,000 ~ 3,000 TPS	Tendermint(PoS)	-	Mainnet	Cosmos Hub
HYPERLEDGER	N/A	N/A	PoET(Elapsed Time)	Various	No public use case	Modular complex architecture
EOS	Less than 1 sec	<ul style="list-style-type: none"> <li>100,000 TPS</li> <li>3,800 TPS(Proven)</li> </ul>	dPoS	EOS VM	Mainnet	Parallel processing
Klaytn	1 sec	8,000 tps(In Cloud)	PoW	EVM	Klaytn	Based on Ethereum
Nexledger	3~7 sec	800~1,500 tps	PoA	Hyperledger VM	Nexledger Universal	Based on Hyperledger
GIGACHAIN	3~7 sec	400~1,000 tps	PoA	Hyperledger VM	GiGACHAINBaaS	Based on Hyperledger
Monachain	3~7 sec	N/A	N/A	N/A	LG CNS Blockchain Platform	N/A
Lambda256	1 sec	~2,000 tps	PoA	EVM Hyperledger VM	Luniverse Platform	Based on Ethereum & Hyperledger



# **Vision & Mission Statements**

# World's Dominant OS by Platform

Blockchain



Desktop

Mobile



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## Mission Statements

# 2022

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Go For Global Top 10

## CARMIN Mainnet, dAPPs and DEX

● **Launching Blockchain Mainnet 3.0 and Its Optimization** (First Half of 2022)

● **Enhancing CARMIN Mainnet with dApps** (Second Half of 2022)

- **Launching Five Powerful dApps by 2022**
- **Providing Low Tech Companies with Low-Cost but Highly Effective Blockchain Solutions**
- **Expanding CARMIN Ecosystem and Proving Competitiveness of CARMIN**
- **Capturing Fan & User Base by dApp Alliance**
- **Establishing High TPS with Highly Effective Nodes**

● **CARMIN's Digital Asset Exchange Services (2023)**

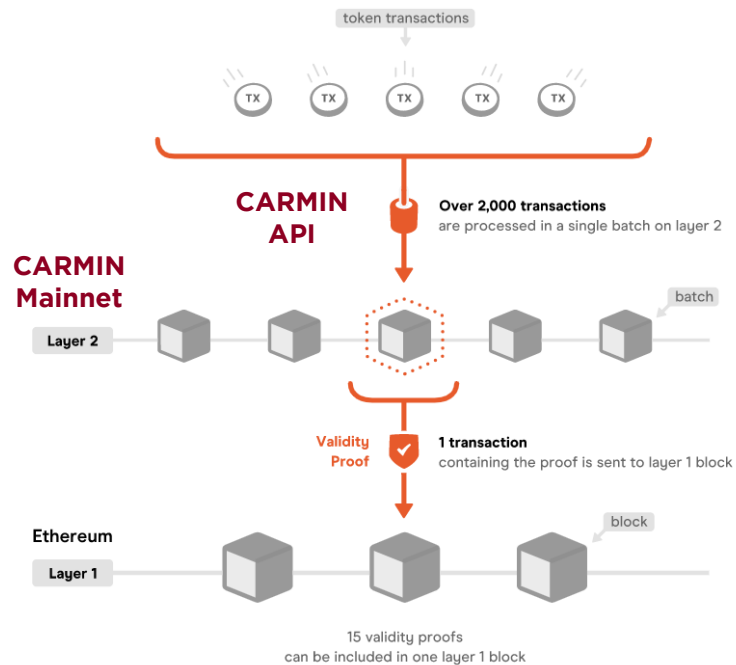
- **Offering Security, Ease of Use, and Privacy with CARMIN's Original Solutions**
- **CARMIN's Easy, Open, and Decentralized Crypto Exchange (DEX)**



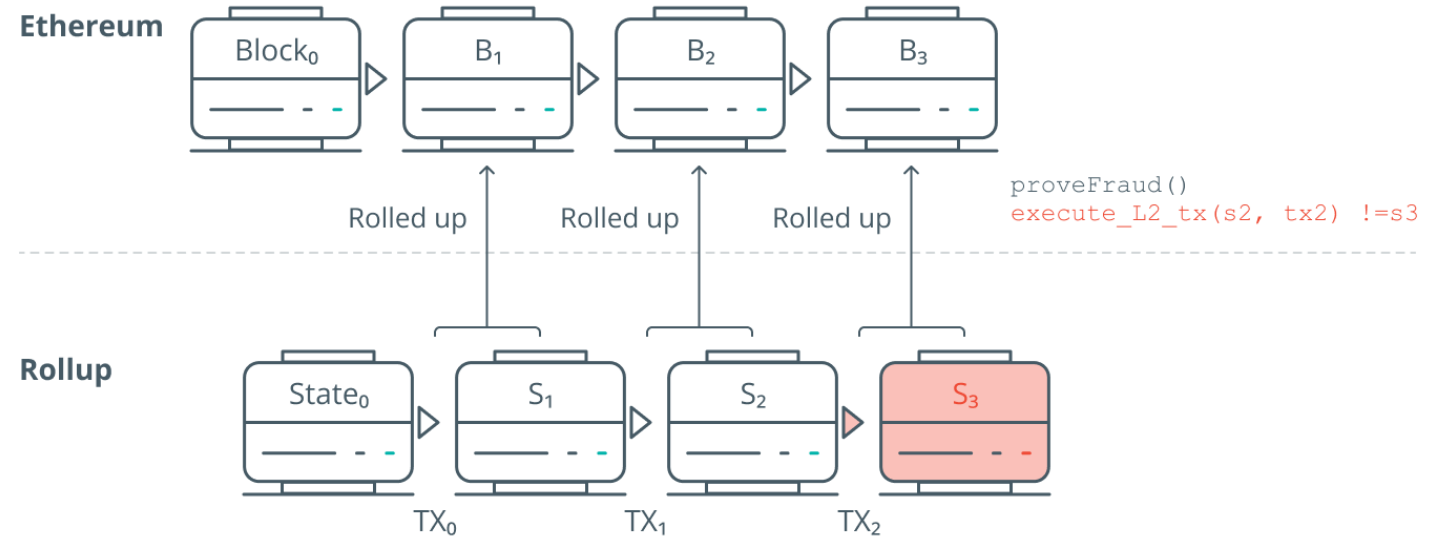
# **Technology Summary**

# ZK-Rollups

- Zero-Knowledge Rollups are Layer 2 Scaling Solutions
- Increase Throughput on Ethereum Mainnet by Removing Computation and State-Storage Off-Chain
- Process Thousands of Transactions In A Batch and Only Post Minimal Summary Data to Mainnet



## How do rollups work



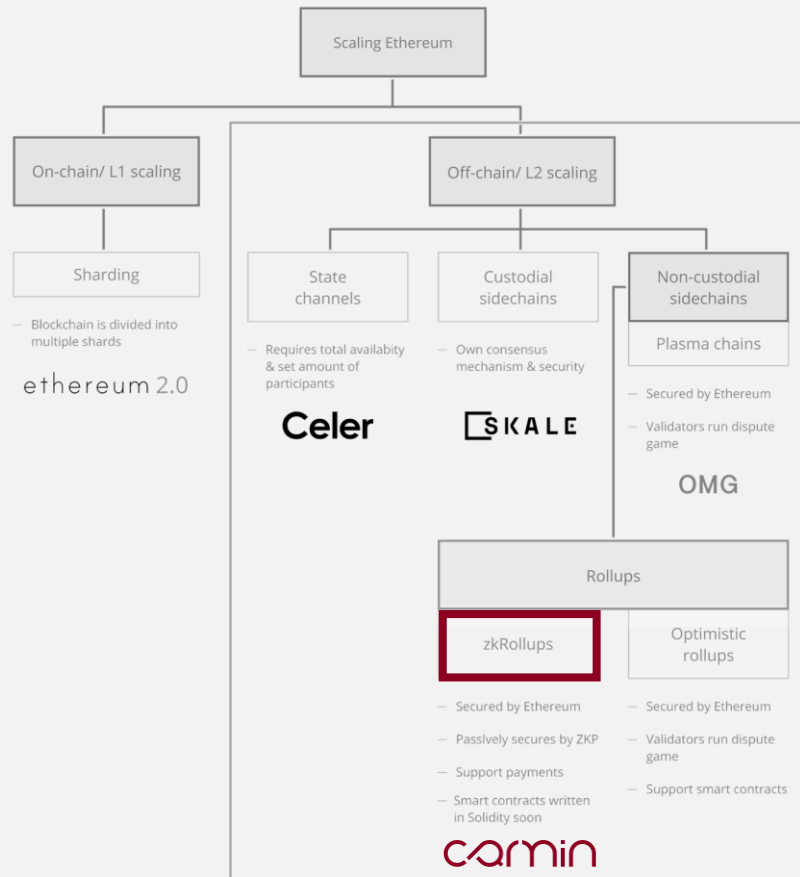
# ZK-Rollups vs. Others

	Withdrawal Time	Required Trust	Privacy	Throughput	Gas Fee	Cross-chain interoperability
Channels	Instant withdrawal	High	High	Very High	Very Low	No
Plasma	7 Days	Medium	Medium	High	Low	Yes
Optimistic Rollup	7 Days	Medium	Medium	Medium	Low	Yes
ZK-Rollup	Instant withdrawal	Low	High	High	Medium	Yes

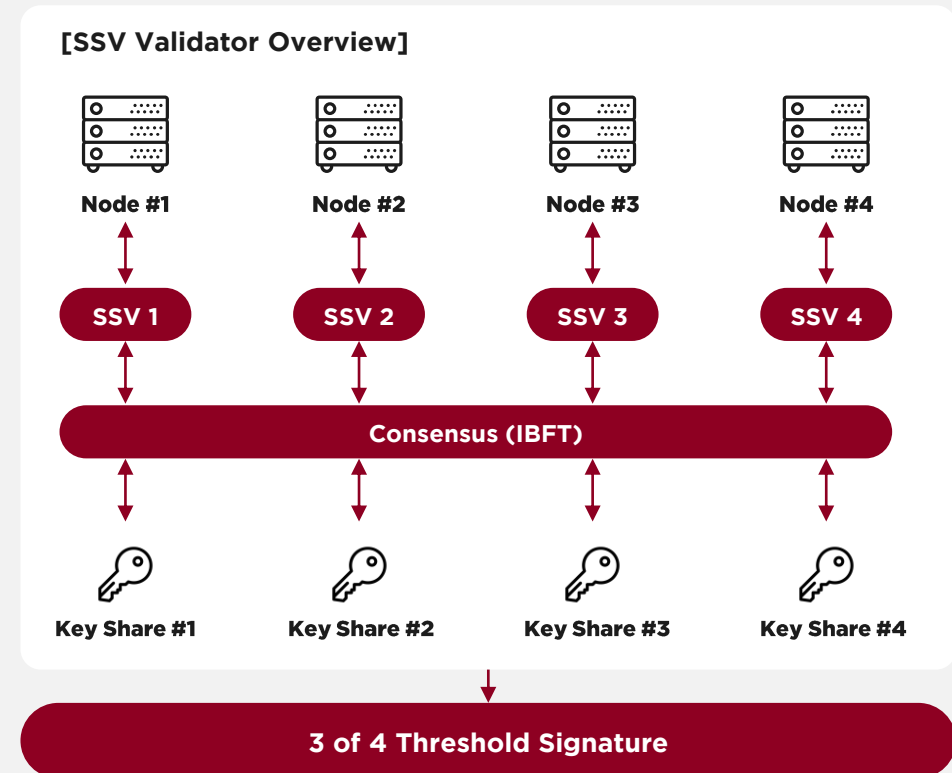
where are we in Q4 2021  
↓

Technology Complicacy	Easy	Hard		
Description	State Channels Payment channel is the most obvious form of state channel.	Plasma Ethereum's native child-chain secured by the Ethereum mainnet but operate on its own consensus mechanism and its own token. Plasma	Rollups Rollups scale Ethereum by executing transactions on a separate EVM-compatible chain before batching, compressing, and posting to Ethereum Mainnet. <del>There are 2 types of rollups Optimistic Rollup and Zero Knowledge proof rollup.</del>	
Main Technology	Smart contract	Smart contract Merkle Tree	Smart contract Merkle Tree Zero-knowledge proof cryptography	
Limitation	<ol style="list-style-type: none"> <li><b>Don't support open participation</b> (Need to know the participants ex ante and can only perform transfer with another party which is in the channel already, changes of participants requires a change of the smart contract code)</li> <li><b>Application purpose</b> (cannot run all type of smart contract like EVM, smart contract)</li> <li>Someone <b>must stay online to keep the channel alive</b> and monitor the transaction within the channel</li> <li><b>Must have a logical owner</b> (cannot be used in AMM e.g. Uniswap)</li> <li>Can transfer ETH directly</li> </ol>	<p><b>Solved</b> (can send fund to people who are not in the plasma chain)</p> <p><b>Application purpose</b></p> <p><b>Require plasma operators to stay online</b> and send hash to Ethereum root-chain at regular interval</p> <p><b>Must have a logical owner</b></p> <p>Require to use a ERC-20 token to perform the transaction not ETH e.g. wrapped ETH (WETH)</p>	<p><b>Solved</b></p> <p><b>Solved - Support general purpose smart contract</b> (can run most of the smart contract like EVM on Ethereum)</p> <p><b>Require rollup sequencer to stay online</b> to monitor rollup block to prevent fraud</p> <p><b>Solved - DeFi-friendly solution</b></p> <p>- Optimism use WETH - Arbitrum can transfer ETH directly</p>	<p><b>Solved</b></p> <p><b>not yet fully support general purpose</b> (StarkWare is working on general purpose EVM for ZK rollups in Cairo, will explore further in the next post)</p> <p><b>Solved</b> (less downtime risk if sequencer is not operating properly)</p> <p><b>Solved - DeFi-friendly solution</b></p> <p>Can transfer ETH directly</p>

# Rollup Position & How IBFT 2.0 Works



## CARMIN IBFT 2.0의 구현 방식

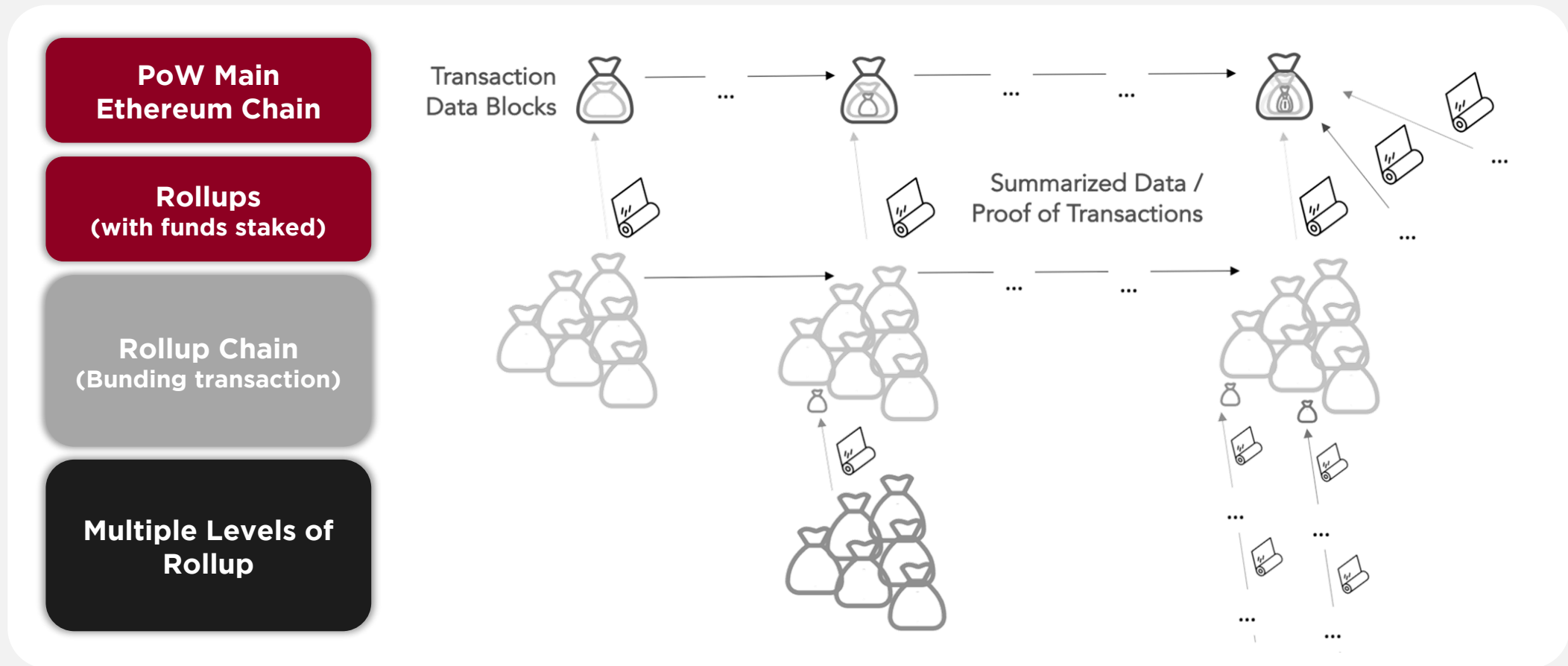




# Multi-chain For Processing Mass Data

## Generation-Rollup For Data Security

- Dynamic Data Block for Processing Mass Data
- Scaling Side Chain for Storing Generation Block
- Scaling Cross Chain & Data Block by Additional Layers





# **Go-To-Market Strategy**

## Three Pillars of CARMIN

01



### Exchange & Payments Public DEX

- ❑ Blockchain-based DEX
- ❑ Posting all transactions and deposits/withdrawals on blockchain
- ❑ Only pay with CARMIN
- ❑ Customer data are managed on blockchain to comply with KYC/AML

02



### Trading NFTs NFTs

- ❑ NFT Market for trading digital arts, content, and IPs
- ❑ CARMIN's 1<sup>st</sup> dApp "NFT MOA"
- ❑ Co-working with BITMIC Gallery
- ❑ Released NFT MOA Service (July 14, 202)

03



### dApps P2E / M2E

- ❑ Partnered with move to earn platform "LetsMove"
- ❑ Partnered with play to earn game "Puzzle Fantasy"
- ❑ Token-enabled WEB3 payment services
- ❑ Mainnet Services & NFT Minting
- ❑ dAPPs for B2B

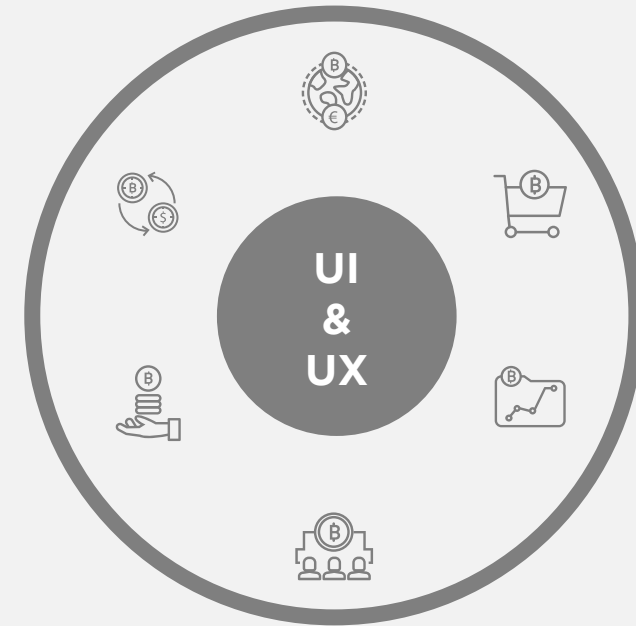
## CARMIN's DEX

- Solved DEX's Problems: No Reference Price / Slippage Fees/ Low Liquidity
- Payment Module Services and DID
- Preparing DEX Service
- Supporting Open API for other DEXs
- Processing A Crypto DEX License in Dubai and Abu Dhabi

Provide Diverse Service Solutions



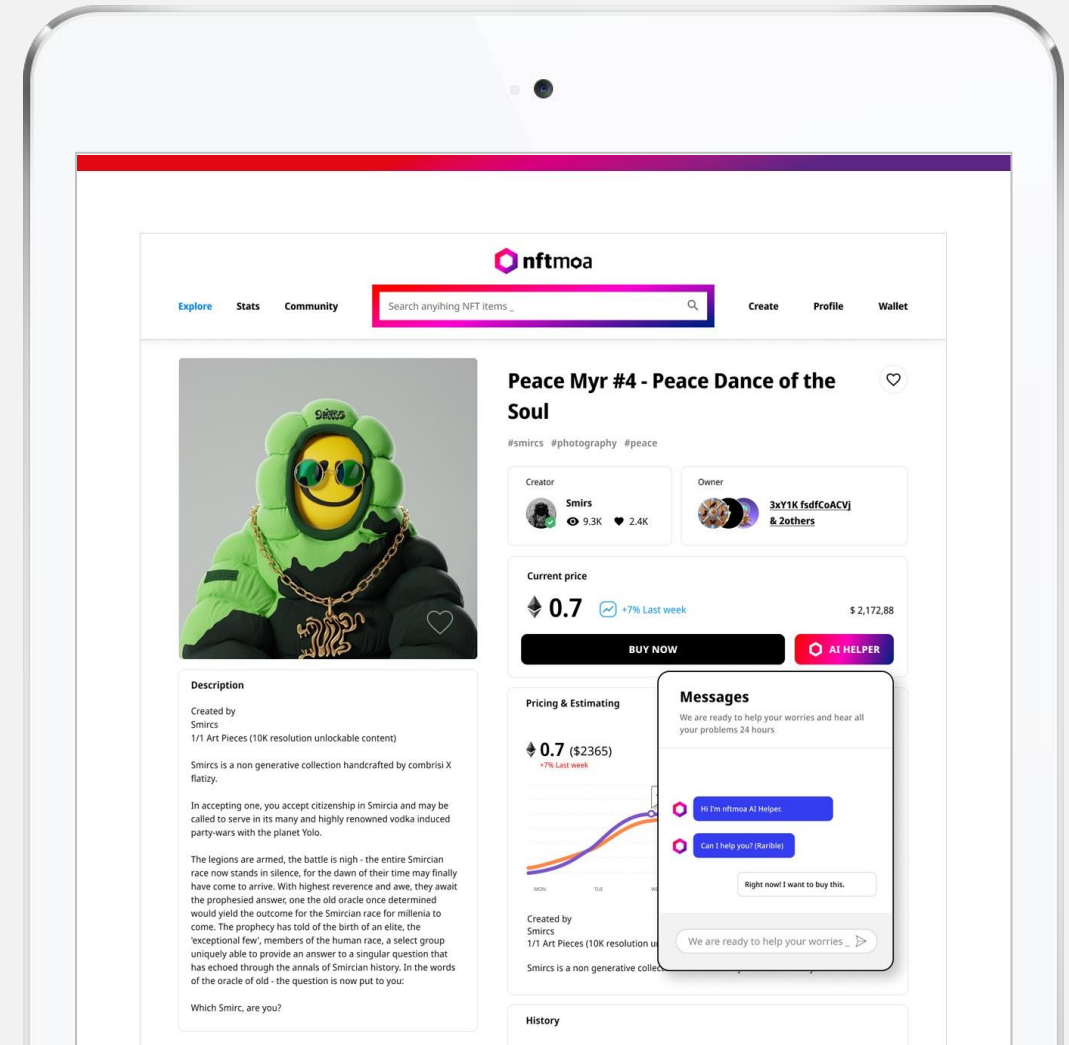
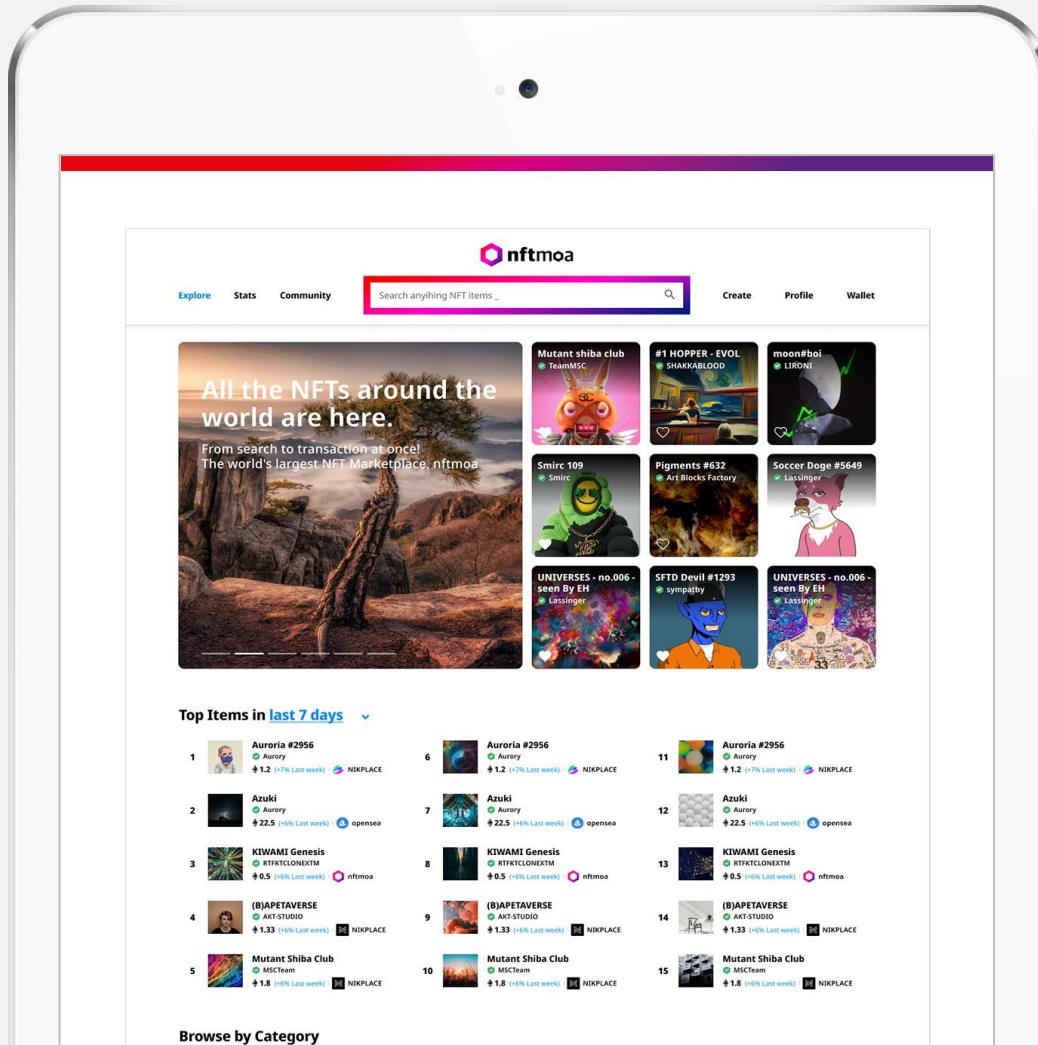
Same UI UX with Centralized  
Crypto Exchanges



# NFT MOA (NFT Portal Platform)

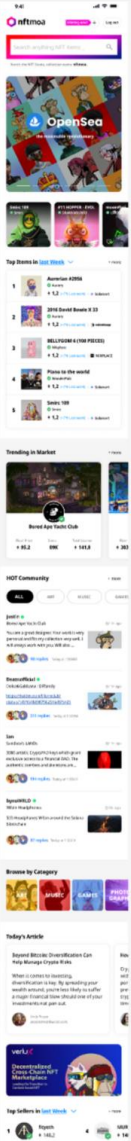
Trade all NFT collections around the world in the easiest, simplest and safest way on NFT MOA

(<https://nftmoa.io/>)

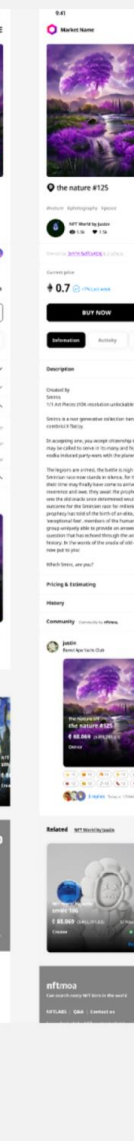
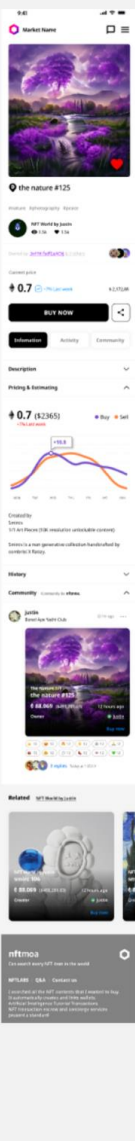
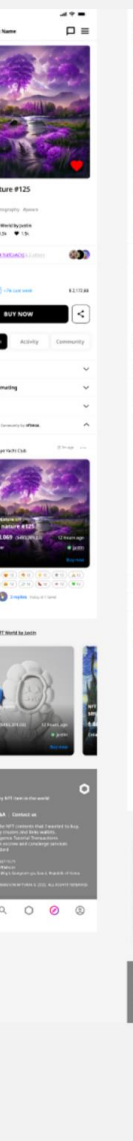
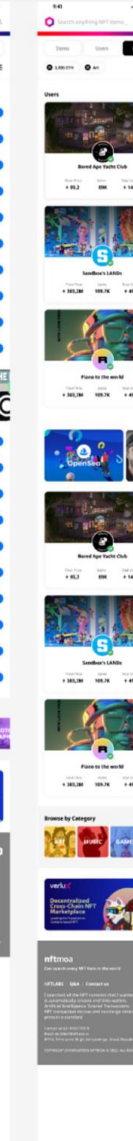
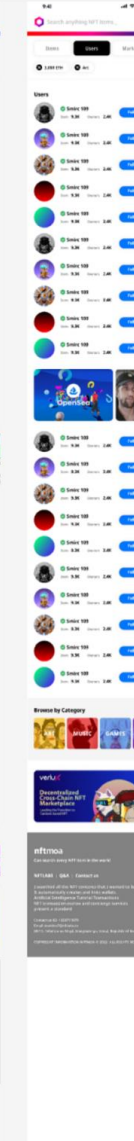
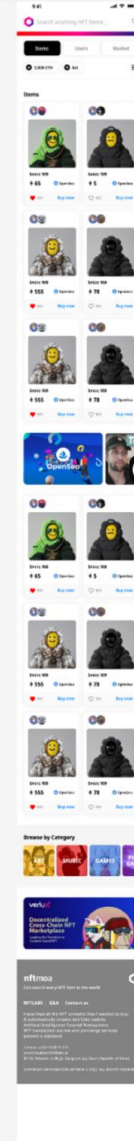
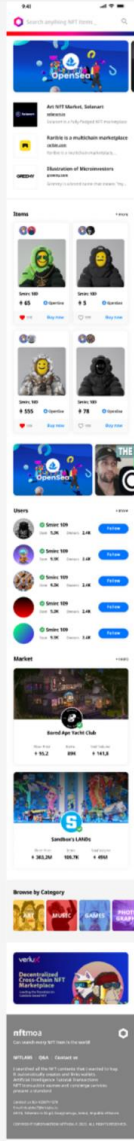




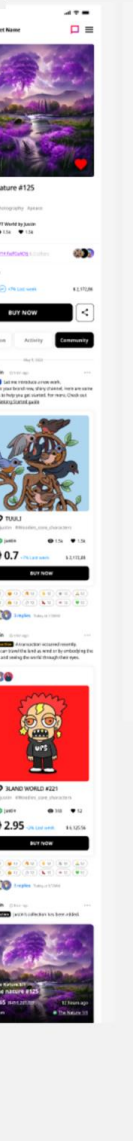
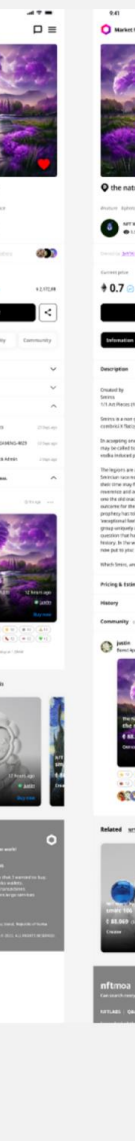
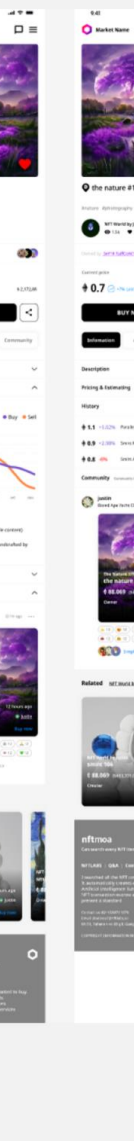
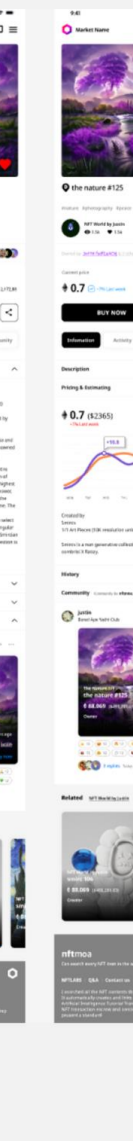
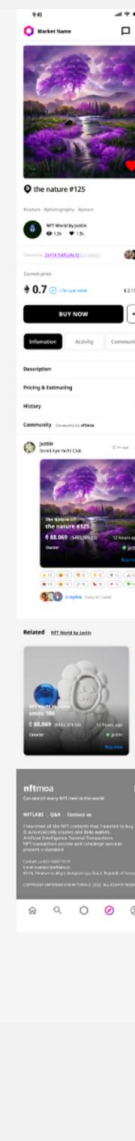
# 1.Home



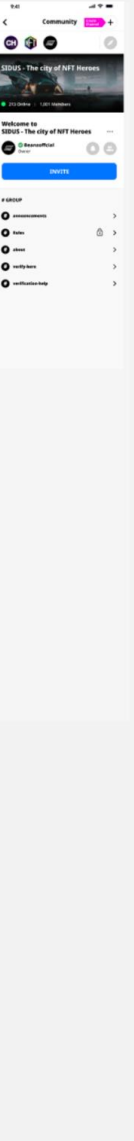
# 2.Search



# 6. Item Detail



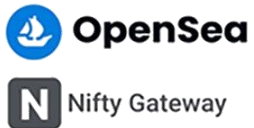
# 7.Community



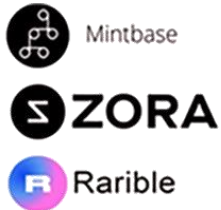
# NFT MOA's Expansion

## NFT MOA Supports Most Major NFT Platforms

### NFT Aggregator/Issuers



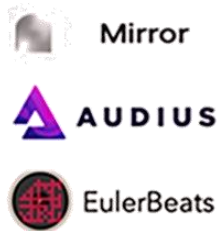
### Generalized & Issuance Protocols



### Art



### Niche NFT Contents



### Game



### Sports



## NFT MOA's Main Business





**CARMIN ONLY dApp "BITMIC"**



**One of highest grossing actors in South Korea, Ha Jung-Woo. We can now enjoy his NFTs ONLY on BITMIC, CARMIN dAPP**



**Opensea superstar "Supernormal" teamed up with BITMIC recently**



**A teen-idol rock star Jaejoong and a famous South Korean comedian Jo se-ho released their NFTs only on BITMIC**

## BITMIC Gallery & METAVERSE Service



BITMIC NFT Online Gallery ▶



## M2E Platform “Let’s Move”



Anyone can earn LEMO tokens by simply moving like running, biking, swimming, hiking and more



Start Moving and Make Money



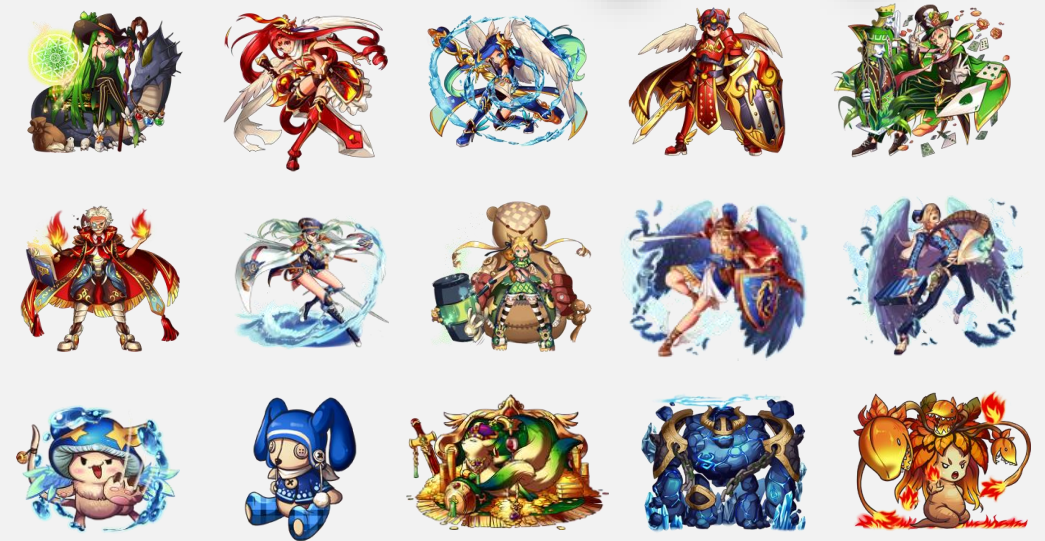
## P2E Platform “Puzzle Fantasy”

- <https://puzzlefantasy.io>
- <https://discord.gg/jJMYcv5qMQ>
- Partnership with Bitforex

### ▼ Puzzle Role Playing Game



Buy, Sell, and Trading  
NFTs on NFT Market ▶





## **Revenue Stream**

01



Exchange & Payments  
**Public DEX**

02

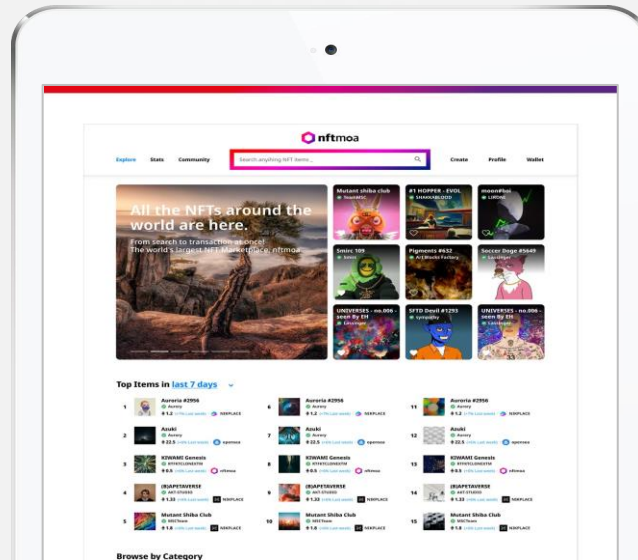


Trading NFTs  
**NFTs**

03



dApps  
**Play/Move to Earn**





**What Is So Special About CARMIN?**

**5nm Chipmaker for SHA-256**



**LK**convergence  
**Promotion & Marketing**

 **nftmoa**  
**Software Engineers**



**No Outsourcing!**

**CARMIN's established powerful  
IN-HOUSE Alliance.**

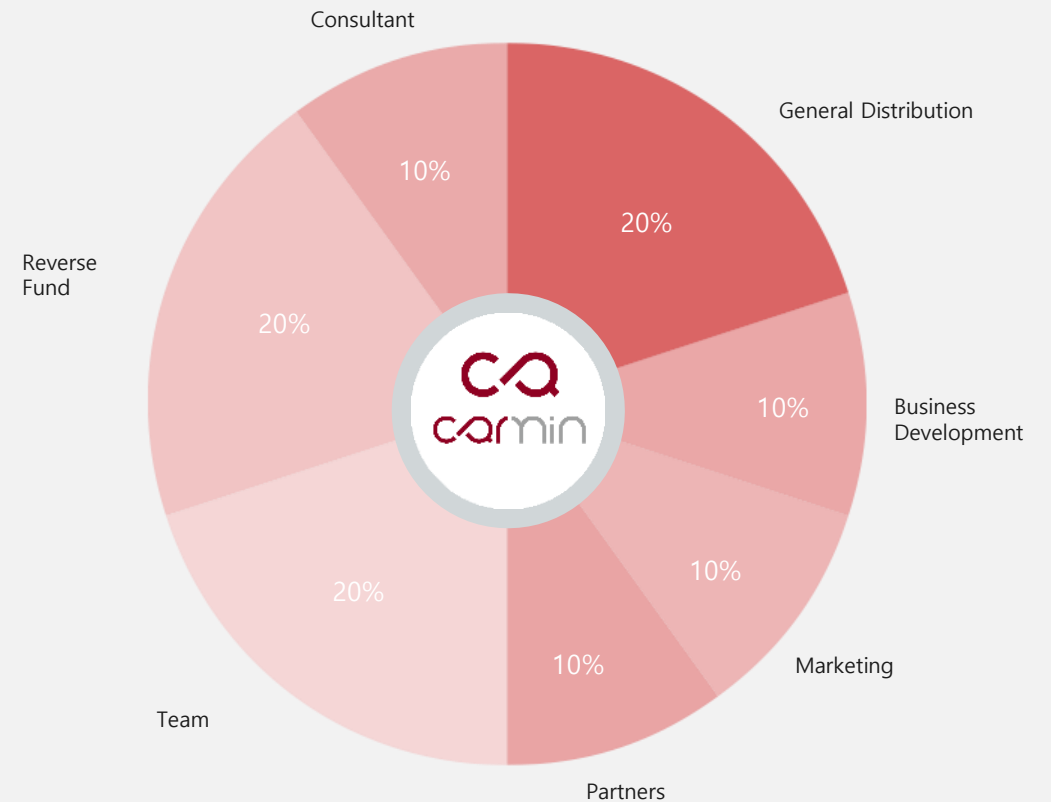


## **Token & Team**

## Token economy

CARMIN Token was developed based on various platforms such as BSC Chain, ETH, and Klay. In particular, the first circulating BSC Chain-based token will be the first public token. Token details are as follows.

Item	Amount	%
Total Coin Issued(Coin)	2,000,000,000	100%
Public(General Distribution)	400,000,000	20%
Market Development (Business Development)	200,000,000	10%
Marketing	200,000,000	10%
Business Partners	200,000,000	10%
Team	400,000,000	20%
CARMIN Fund(Reverse Fund)	400,000,000	20%
Advisor(Consultant)	200,000,000	10%



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# Roadmap

CARMIN will invest, provide technical support, and grow together to attract various dApp contents on its own platform. This CARMIN Platform will be opened in stages according to the service perfection and customer response.

2022. 04

- Token Build
- Mainnet Design

2022. 06

- NFTMOA Testbed open
- Mainnet Transaction Test

2022. 08

- Angel investment completed
- Completed the establishment of the head office

2022. 10

- Huobi listing complete
- Opened NFTMOA service

2022. 12

- Open NFT Metaverse Gallery
- Dedicated wallet service open

2023. 04

- 2<sup>nd</sup> Exchange Listing
- Global wallet service open
- dApp integration service open

2023. 07

- Global DEX Open
- Global NFT DEX Open

2024

- Q2 Layer2 Token Bridge Service open
- Q3 2024: CARMIN DEX & CARMIN Mainnet 2.0

# Management



**Stuart S. Lee**  
Co-Founder & CEO

- 스탠포드 출신 실리콘밸리 본사 대표
- CEO, CARMIN Labs
- COO, AIQ Blockchain
- Co-Founder & CEO, ALFA DLTA Inc.
- Co-Founder & CEO, Things Video
- Co-Founder & CEO, SPORANK Technology
- CEO, Posing Technology
- Stanford University



**Ryan Lee**  
Co-Founder & CSO

- 아시아 블록체인 개발총괄
- Supreme Finance CTO
- TONE Foundation & DEVISOFT, CEO
- Atomic Idea Singapore CTO.
- LK Convergence, CSO
- Korea Telecom & Samsung SDS Cloud Architecture
- Master of Engineering, Yonsei University



**Junseok Kang**  
cco

- 블록체인 마케팅 전문
- CARMIN CCO
- LKConvergence CEO
- DEVI Soft Contents Team
- KTH Paran ContentsTeam : Publisher (from Dec 2006 to present)
- YNK Contents Team : Consultant & Publisher(from May 2001 to Nov 2004)
- Crypto currency Mining & Analyst , Promoter



**Aiden Song**  
Co-Founder & COO

- 글로벌 거래소 리스팅 담당
- CoinBene VIETNAM, CEO
- Symverse Vietnam, Advisor
- Golden Pacific Vietnam, CEO
- IBK Investment & Securities Senior private banker
- Samsung Securities Senior private banker
- Graduated from Kyunghee University

# Management



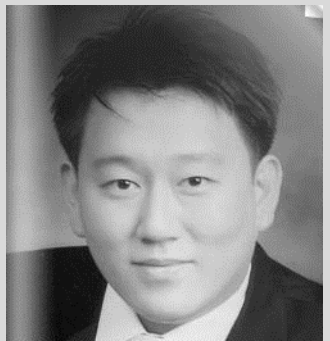
**Jina Park**  
CMO

- Global NFT 유통 및 마케팅 전문
- NFT Planner & Marketing (BITMIC ,BTSC)
- NFT Art curator (BITMIC, BTSC)
- Hana Financial NFT Art Director
- O2O Marketing expert
- Motorsports Marketing Planner
  - Audi R8 LMS Cup
  - Ferrari Challenge
  - Porsche Carrera Cup
  - Lamborghini Blancpain Super Trofeo
  - Asian Le Mans Series etc



**Cris Lee**  
Senior engineer

- 전자 지갑 및 클라우드 전문개발
- Neowiz enc Member : Contents Developer & Project Manager, Blockchain Mainnet developer
- KT Cloud, SDS : Cloud.com, Samsung S-Cloud Service PM
- International Database Analyst- Bigdata Database (Mongo), SQL DBA
- Hongkong & Veitnam International Exchange, crypto currency developer



**H. Peter Kim**  
Co-Founder & Chief Advisor

- AIQ 블록체인 칩 개발사 이사
- Co-Founder, CARMIN Labs
- CEO, AIQ Network
- CTO, AIQ Blockchain
- Washington University in St. Louis



**Owain Harris**  
dApp CTO

- **dApp Contents 개발 관리 팀장**
- CARMIN dApp Dev Team
- BITMIC dApp CTO
- Tangram Software Developer
- Ink Trendz Software Developer
- Smartsoftware Solutions Pty Senior Consultant
- Deltek Customer care analyst
- Sohmar Support Manager



## Software Engineers



**Seongsik Kim**  
CTO

- 빗썸 출신 블록체인 전문 CTO
- Dongguk Univ. Information Communication Engineering
- CEO & CTO, ST Unitas SLG
- CTO , FEELWAY
- CTO, Bithumb & Huobi Korea
- PMO, NAVER corp. & TMON corp.
- Development of SK Telink platform for payment and charging , calculation system
- Development of Backend for Shinsegae I&C



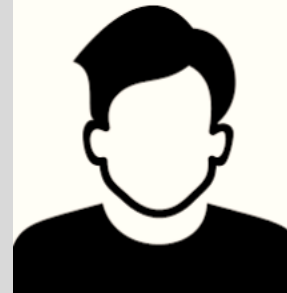
**Yeonseong Shin**

- **Layer2** 블록체인 총괄 개발팀장
- 18 years in Development for overall Blockchain
- Development for Multi(Cross) Chain & Contract Factory Scanning Engine
- Development for NFT Marketplace
- Development for mainnet of Ethereum L2 Hard Fork (ZK-rollup)
- Development for ERC integrated Payment system
- Development for Mobile Wallet Gateway



**Eojin Lee**

- ADA 메인넷 개발팀 출신
- 8 years in Development for Blockchain
- Development for Bridge Chain & Contract Factory Scanning Engine
- Development for NFT Marketplace
- Development for mainnet of ADA Cardano Hard Fork
- Development for ERC integrated Payment system
- Development for Mobile Wallet Gateway



**Myeongho Chou**

- **ADA 메인넷 개발팀** 출신
- 6 years in Development for Blockchain
- Development for Bridge Chain & Contract Factory Scanning Engine
- Development for NFT Marketplace
- Development for mainnet of ADA Cardano Hard Fork
- Development for ERC integrated Payment system
- Development for Mobile Wallet Gateway

## Software Engineers



**Seonghoon Park**

- 19 years in Development for AI & Searching
- Director of Megazone platform Development team
- Director of WITHInnovation Development team
- Director of BALAAN FrontEnd Development team
- Director for searching engine development of YAHOO Korea
- Director of Plus-MX Development team
- Director of Happyrising technical laboratory
- Director of INVENTURE Technology Development team



**Janghyuck Cho**

- 20 years in Development for overall Server
- Senior Developer in Bungaejangter platform laboratory
- Director of ST Unitas Development team
- Director of Megazonecloud Development team
- Director of WITHInnovation Service Development team
- Director of TMON Development team
- Director of NAVER PWE Development laboratory
- Director of NHN / NTS Development team
- Development for dictionary service of YAHOO Korea named information and future



**Youngjun Seo**

- 20 years in Development for payment and billing system
- Development for overall middleware in ST Unitas EDU-Tech laboratory
- Director of KT Pay Development team
- Director of Pay Letter Development team
- Director of Hanafos.com's Membership Development team
- Senior Developer in Microsoft Web Billing Development



**Jaehyun Kim**

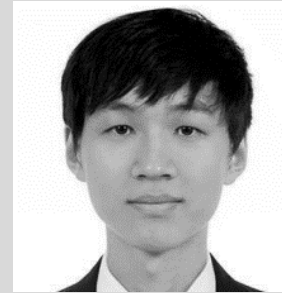
- 17 years in Development for overall E-Commerce
- Development for TMON and Bungaejangter platform
- Development for digital asset platform of KT Alpha
- Development for personal emoji marketplace utilized META engine
- Development for AI-based commerce optimization server distribution solution
- Development for virtual society-based Instagram mapping interworking

## Software Engineers



**Jaewook Jeong**

- 20 years in UI & UX overall Design
- Director for service planning and overall UI/UX design of "S" Company
- Director for UI/ UX design of Daum Communication-UX LAB (News & Mypage section)
- Director for service and mobile UI/UX design of Megastudy
- Director for overall UI/UX design of SkyEdu



**Junphil Hwang**

- 13 years in Development for overall FrontEnd
- Development for Frontend of FEELWAY
- Development for React of Huobi Korea
- Development for personal emoji marketplace utilized META engine
- Development for AI-based commerce optimization server distribution solution
- Development for virtual society-based Instagram mapping interworking



**Jeasun Lee**

- Director for Mecaverse platform service of UINetworks
- Director for service planning of ST Unitas SLG
- Director for service planning of Bithumb & Huobi Korea
- Director for service planning of NAVER corp. & TMON corp.
- Director for service planning of SK Telink platform
- Director for service planning of Shinsegae I&C and Shinsegae mall



**Wonseok Choi**

- 21 years in charge of Business Strategy
- CMO, Director for New business department of "N" Company
- CMO, Director for Marketing department of Bithumb
- Director of TMON Marketing and W/G Group
- Director for Marketing of Samsungwelstorymall
- Director for Marketing of Shinsegae online mall
- Director for online Marketing in charge of Lotte.com service renewal



**Company**

# Headquarters in Singapore

ACCOUNTING AND CORPORATE REGULATORY AUTHORITY (ACRA) **bizfile+**

**INFORMATION RESOURCES**

WHILST EVERY ENDEAVOR IS MADE TO ENSURE THAT INFORMATION PROVIDED IS UPDATED AND CORRECT. THE AUTHORITY DISCLAIMS ANY LIABILITY FOR ANY DAMAGE OR LOSS THAT MAY BE CAUSED AS A RESULT OF ANY ERROR OR OMISSION.

**Business Profile (Company) of CARMIN LABS PTE. LTD. (202222726W)** Date: 01/07/2022

The Following Are The Brief Particulars of :

UEN : 202222726W

Company Name : CARMIN LABS PTE. LTD.

Former Name if any :

Incorporation Date : 01/07/2022

Company Type : EXEMPT PRIVATE COMPANY LIMITED BY SHARES

Status : Live Company

Status Date : 01/07/2022

**Principal Activities**

Activities (I) : MANAGEMENT CONSULTANCY SERVICES (70201)

Description :

Activities (II) : INFORMATION TECHNOLOGY CYBERSECURITY CONSULTANCY (62022)

Description :

**Capital**

Issued Share Capital (AMOUNT)	Number of Shares *	Currency	Share Type
100000	10000	SINGAPORE, DOLLARS	ORDINARY

\* Number of Shares includes number of Treasury Shares

Paid-Up Capital (AMOUNT)	Number of Shares	Currency	Share Type

COMPANY HAS THE FOLLOWING ORDINARY SHARES HELD AS TREASURY SHARES

Number Of Shares	Currency

Authentication No. : 022517174K

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THE COMPANIES ACT (CHAPTER 50)  
A PRIVATE COMPANY LIMITED BY SHARES  
CONSTITUTION OF  
CARMIN LABS PTE. LTD.

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- The name of the company is CARMIN LABS PTE. LTD.
- The registered office of the company is situated in the Republic of Singapore.  
  
**111 SOMERSET ROAD #06-01C  
111 SOMERSET SINGAPORE  
238164**
- The liability of the members is limited.
- The share capital of the company is:
 

Currency	Amount of Issued Share Capital
SINGAPORE DOLLARS (SGD)	100,000
- We, the persons whose names and occupations are set out in this Constitution, desire to form a company in pursuance of this Constitution and we each agree to take the number of shares in the capital of the company set out against our respective names.
 

Name of Subscribers	Occupation of Subscribers	Number of Shares Allotted	Class of shares	Currency
KAT			Ordinary	SINGAPORE DOLLARS (SGD)
KIM			Ordinary	SINGAPORE DOLLARS (SGD)
LEE			Ordinary	SINGAPORE DOLLARS (SGD)
KIM PEI			Ordinary	SINGAPORE DOLLARS (SGD)

# Partners

## Investors



## Hardware / Chipmaker



AIQ Blockchain, Inc.



## Alliance



## Software Dev.

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## CARMIN Offices







Muchas Gracias!

[slee@carmin.inc](mailto:slee@carmin.inc)