

EML PROTOCOL BLOCKCHAIN

WHITE PAPER

CONTENTS

INTRODUCTION	3p
01_PROLOGUE	4p
02_BACKGROUND	5p
03_MISSION	8p
04_SOLUTION	11p
EML PROTOCOL BLOCKCHAIN	14p
01_OVERVIEW	15p
02_SYSTEM COMPOSITION	20p
03_DEVELOPMENT	23p
EML PLATFORM ECOSYSTEM	26p
01_FOOD PAY	28p
02_A/S PLATFORM	30p
03_ETC.	32p
TOKEN ECONOMY	43p
EML TOKEN DISTRIBUTION	45p
PARTNERS	49p
ROADMAP	51p
DISCLAIMER	53p

INTRODUCTION

01. PROROGUE

The annals of human history have been marked by a ceaseless procession of inventions and discoveries. However, the emergence and ongoing growth of information and communication technology (ICT) have been widely recognized for their unprecedented ability to catalyze innovation, profoundly affecting every industry within households, corporations, and governments.

Initially regarded as Social Overhead Capital (SOC), these IT-based technologies have now evolved into essential software platforms that bolster overall productivity and facilitate the realization of global business objectives.

Trailblazers of internet innovation, such as Google, Amazon, Facebook, and Apple, are known as the preeminent technology companies vying for the pinnacle of global market capitalization. Although they operate in diverse sectors, including search engines, online commerce, social media, and computer hardware, the unifying element that binds these corporations together is their status as platform-based enterprises. Google's Chairman, Eric Schmidt, has highlighted that the key to their success lies in their distinctive and powerful platforms.



Trailblazers of internet innovation, (Gang of Four)

As we entered the 21st century, global big tech companies have come to rely on platform-based economies. In 2021, seven of the top ten companies worldwide were platform enterprises. Among them are American companies such as Apple, Microsoft, Google, Amazon, and Meta, as well as Chinese companies Alibaba and Tencent. In South Korea, platform companies like Naver, Kakao, and Coupang also exist.

By 2025, it is projected that the revenue of these digital platform companies will reach \$60 trillion, accounting for one-third of the total global corporate revenue. In a decade, this ratio is expected to approach 70%, indicating the continued growth and expansion of platform-based businesses.

02. BACKGROUND

In the Fourth Industrial Revolution, the establishment of hyperconnectivity and the utilization of superintelligence are embodied through the platform. Ultimately, the protagonist of the Fourth Industrial Revolution is the platform. Analogous to a passenger boarding and alighting from an elevator, platform companies provide a marketplace or plaza where suppliers and consumers meet. Traditional gatekeepers vanish within platform companies, and an automated market control is achieved as suppliers and consumers directly exchange feedback. For example, with Amazon's Kindle platform, anyone can publish a book, and the popularity of the book is determined by the consumers' reactions. As such, platforms have emerged as the pivotal factor in a company's success or failure, and interest in platforms continues to grow.



The interest in platforms is explosively increasing for several reasons.

Firstly, leading ICT companies are expanding their profits or experiencing rapid growth into large corporations through the use of platforms. This phenomenon is becoming increasingly apparent.

Secondly, the revolutionary evolution of ICT has enabled the easier construction and utilization of platforms.

Thirdly, as global competition intensifies, customer needs diversify, and technological innovations accelerate, product life cycles are shortening. This necessitates minimizing cost increases while adopting low-volume, multi-product production strategies.

Lastly, the blurring of boundaries across various academic and industrial fields has enabled interdisciplinary convergence. This allows for the combination and activation of disparate industries through platforms, further fueling their importance.



Efficient platforms provide value to businesses.

The value of a platform is proportional to its significance within a company's business structure or system. If a platform encompasses as many essential functions as possible within the overall system, its value will be substantial. When developing a system, it is more efficient to reuse or improve previously developed core functionalities rather than creating new ones each time. Hence, platforms that perform core functions or solve business problems within a system, and are designed for various purposes, are considered valuable.

Firstly, the value of a platform depends on whether it performs core and essential functions in a business or only provides functionalities for customer service.

Secondly, platforms enable the use of a single framework repeatedly, leading to cost-saving effects due to economies of scope. Consequently, the repetitive use and sharing of platforms generate economic value.

Thirdly, as the number of participants on a platform increases, network effects emerge, maximizing the value generated by these effects.

There are indisputable reasons why platform businesses are bound to grow.

Firstly, they offer high returns on investment in a short period through a leveraged role.

Platforms operate akin to levers, allowing for the lifting of heavy objects with minimal force, creating a leverage effect. By constructing a robust product platform centered around components that can be shared throughout product development and production processes, a company's efficiency will be significantly enhanced. This is because various products can be produced by making slight modifications on the platform according to customer needs. The leverage effect of platforms transcends merely reducing investment for identical outcomes. When combined with the network effects previously mentioned, it offers the potential to gain a competitive edge in industry leadership battles through customer retention and power expansion.

Secondly, they become lucrative business models by engaging numerous stakeholders.

Valuable platforms connect relevant suppliers and demanders, thus attracting a multitude of stakeholders. Such platforms that draw in people effectively facilitate the creation of new and valuable business models.

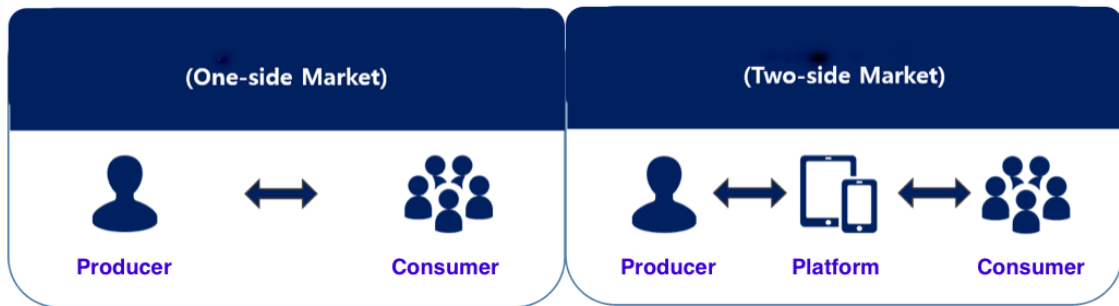
Thirdly, they can serve as the driving force of a service-based economy.

Services embody the pay-to-use concept, where individuals pay according to their usage. If a service delivers resources in the desired manner, at the desired moment, and to the desired extent, it aligns well with platform characteristics. Ultimately, the broad application of platforms will stimulate the growth of a customized service industry.

Lastly, they determine strategic positioning. Platforms fundamentally represent markets that constitute network-based economies, characterized by a widening gap between early entrants and latecomers as the network size grows. Platforms evolve through the connections and interactions of participants, creating a symbiotic ecosystem that provides new value and benefits to all involved. This fosters an environment in which businesses cannot help but flourish.

03. MISSION

The rapid growth of the platform economy, driven by factors such as the COVID-19 pandemic and the transition to a contactless paradigm, has given rise to numerous platform businesses worldwide. However, the swift emergence of these businesses has also led to various issues becoming social concerns.



Firstly, there is the issue of centralized platform monopolies due to network effects.

Since the structure is more advantageous with increased platform participants, a winner-takes-all phenomenon arises for large platform companies. These dominant companies undermine competitive systems, imposing their own arbitrarily determined services and rules. The moment a network is established, lock-in occurs, rendering switching impossible.

Secondly, the distribution of profits is inequitable.

Platform operators monopolize almost all the profits generated on the platform. In reality, the users who participate in content creation or contribute to the platform's growth are hardly sharing in the profits.

Thirdly, low-quality services result from inexpensive costs.

Most marketing platforms today tout low prices, and as a consequence, businesses excessively pursue cost advantages. This leads to a lack of understanding and interest in companies from the customer's perspective. By offering large quantities of design and basic marketing materials at below-average prices, the service primarily attracts undercapitalized businesses. The most significant drawback of this approach is the unsatisfactory output for those who sought high-quality results. This undermines the brand image of content marketers and performance marketers who should stand out with unique ideas, strategies, and differentiated marketing skills.

Fourthly, the proliferation of short-term workers.

With the increased activity of platforms, the labor market has seen a shift from permanent jobs to short-term, temporary ones, leading to the casualization of labor. Workers now exert more effort than before, but the results they can achieve have become more uncertain. While the development of platforms creates new jobs, it has also resulted in low-wage, low-skilled, or short-term jobs for workers who lack capital and technology.

Fifthly, the increase in cyber fraud due to the neglect of ecosystem management.

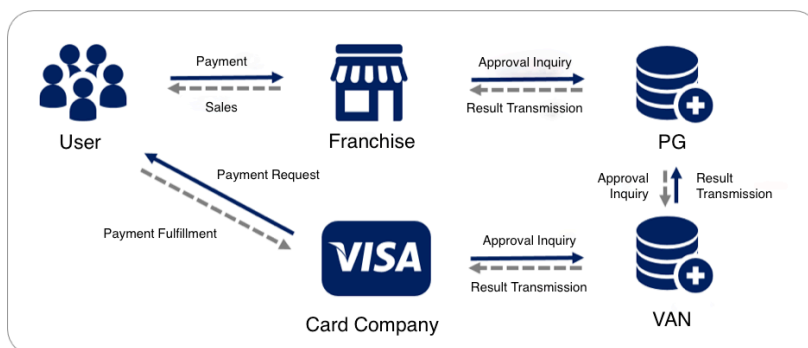
The domestic second-hand market, which is growing with the MZ generation at its core, has steadily expanded from a size of 4 trillion KRW in 2008 to around 20 trillion KRW last year. However, fraudulent transactions persist on platforms that neglect ecosystem management. According to data from the police, second-hand transaction fraud cases surged from 45,877 in 2014 to 123,168 in 2020, with an increasing variety of methods.

Sixthly, the shortcomings of existing payment solutions.

As the payment market rapidly restructures around online and mobile channels, consumer payment convenience has significantly increased. On the other hand, payment services are still utilizing systems that are ill-suited to the current digital economy, encompassing various costs, complex authentication procedures, expensive fees, lengthy settlement periods, and maintenance issues that have long been considered potential problems.

1. Complex payment processing procedures

From the advent of electronic payments to the recent rise of mobile simple payments, various payment methods have emerged. However, payment services operate with a complicated and inefficient structure involving a minimum of eight businesses and 13 processes, spanning from payment to settlement.



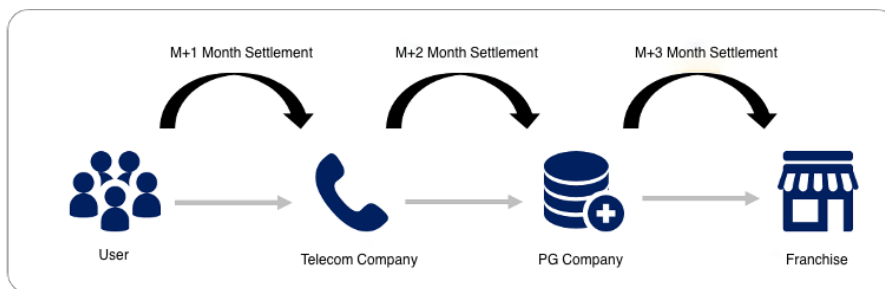
<The credit card payment and settlement process>

2. High payment fees

In reality, the fees that businesses pay in the payment process are approximately 2-3% for credit cards, about 2% for debit cards, and can reach a staggering 25% for prepaid cards. Particularly in regions such as Southeast Asia and South America, where payment services are not as active, businesses must bear extremely high fees of up to 50%. The reason for these high fees is the need to pay various intermediaries due to the complex payment processing procedures. This means that more than five fees are incurred for a single transaction. Additional fees arise for international transactions due to foreign currency transfers and exchanges.

3. Complex authentication procedures and lengthy settlement periods

Not only traditional payment processes but also simple and mobile payments are similarly complex. While simple payments provide convenience to consumers, they are far from simple when viewed from the payment structure perspective. They act as catalysts for a vicious cycle that further complicates the payment process, including authentication, settlement, payment, disbursement, and reconciliation, ultimately solidifying a high-cost system. Although products or services are paid for immediately upon transaction, electronic payments, which are not real-time cash transactions, have increasingly longer settlement periods as the number of intermediary steps grows. In the case of online payments using mobile phone payments, the payment is made to the merchant within a minimum of 3 days and a maximum of 90 days after the transaction.



<Mobile Carrier Payment Settlement Procedure>

04. SOLUTION

As the maturation of blockchain technology and the emergence of Web 3.0 introduce new value concepts, the focus is shifting towards protocol businesses. Blockchain enables decentralization by distributing data storage across multiple computers, thus preventing any individual or group from exerting control over services or businesses. This value philosophy has been applied to currency through virtual currencies like Bitcoin and expanded to digital value trading instruments such as Ethereum. The blockchain-driven innovations that began in the financial sector have continued with NFTs, DeFi, and the attention surrounding DAOs (Decentralized Autonomous Organizations) as a method of operating organizations that strive for decentralized values. Amidst this atmosphere, the metaverse has ignited a new internet paradigm, highlighting the importance of interoperability, digital asset ownership, and individual data sovereignty in a novel internet landscape.

This shift in value philosophy necessitates a corresponding change in business models. Traditional platform businesses do not align with such decentralized systems. Protocol businesses, instead, operate based on the commitments and trust of stakeholders rather than unilateral corporate policies.

Protocol businesses are ideally suited for use in trading virtual goods and content within an entirely virtual economy. By fossilizing crucial policies and rules in code to prevent arbitrary changes, protocol businesses can coordinate complex stakeholder relationships across multiple services and prevent dominant businesses from imposing and changing policies arbitrarily, thereby avoiding the pitfalls of monopolistic practices.

The value philosophy of protocol businesses differs from that of the traditional physical and internet economies. As a result, they are garnering attention as a fitting business structure for the emerging metaverse. The hot keywords in the ICT industry – metaverse, NFT, DeFi, and Web 3.0 – will inevitably bring about new business innovations in the process of generating revenue. Just as the growth of mobile technology in the 2010s drew attention to the sharing and subscription economies, new internet paradigms require novel business models.

In the not-too-distant future, protocol businesses will represent a participatory economic system that ensures fairness and transparency for all participants by harnessing blockchain-based technology. In this system, entities gathered on a platform reach consensus and create certain rules (protocols). Blockchain technology and smart contracts prove invaluable in this process, allowing the implementation of a fair compensation mechanism through coins for all participants.

For example, in a platform business, the company providing the platform takes a high commission fee. However, in a protocol business, it is possible to bypass the intermediary platform company and eliminate the commission by utilizing decentralized tokens. Coins containing pre-agreed protocols between stakeholders could potentially replace stocks in the future, ushering in a more equitable distribution of rewards for workers rather than shareholders in a protocol business. Additionally, smart contract coins could replace stocks by providing an appropriate compensation system for consumers who significantly contribute to corporate growth and local residents who assist in the company's development.

If platform economies are monopolistic, autocratic, and have issues with distribution, protocol economies represent economic ecosystems based on amicable pre-agreed arrangements among stakeholders to resolve conflicts and distribution problems.

Introducing platforms to users and creating value is generally a challenging and time-consuming task. We aim to create a market where all platforms can have their value and advantages evaluated. A platform that can easily and conveniently reach users is considered valuable. The most crucial aspect is proper circulation, legal usage, and accurate mutual cost settlement among participants. We regard an environment that fulfills these criteria as a value-rational platform market.

Our goal is to establish a value-rational platform market by addressing the issues of platform businesses and the structural problems of existing payment systems. By introducing fair compensation and suitable payment solutions, we aim to dismantle the structure of the traditional platform market, transparently disclose the distribution process, and ensure that participants receive reasonable rewards.

In order to establish a value-rational platform market, several key elements must be considered:

Firstly, a foundation of trust in the distribution process that everyone can acknowledge is essential. To secure trustworthiness, an absolute security management mediator, which is immutable and employs a consensus algorithm to verify and approve transaction records, is required.

Secondly, the ultimate decentralization and de-monopolization is necessary, contrasting with platforms where providers and operators exist. This involves a new form of open economic model in which multiple economic agents engage in transactions according to certain rules they have established. To achieve this, distributed storage technology is needed to disseminate information concentrated at the center and facilitate the exchange of data between individuals.

Thirdly, the fees imposed by platform companies must be reduced so that the cost savings can be distributed among suppliers and demanders. A fair and reasonable compensation and distribution mechanism for participants' labor and remuneration is necessary in a structure where a certain percentage of brokerage fees, arbitrarily determined by the provider of the transaction platform, are levied and fee rates increase or profits grow.

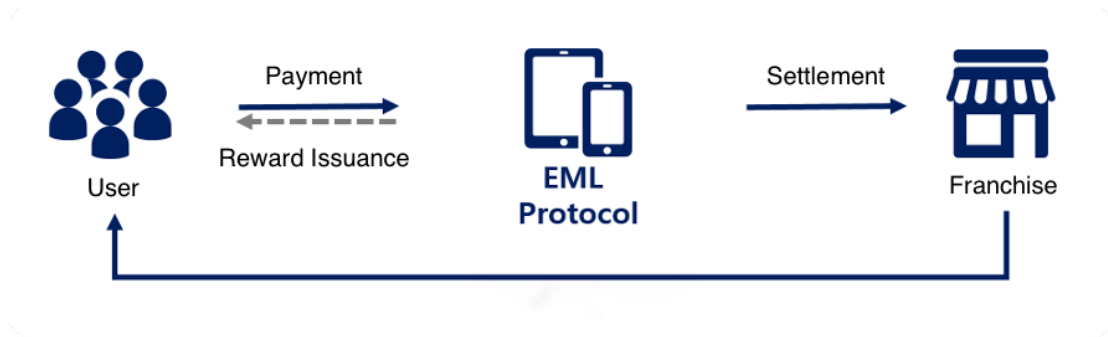
Fourthly, a swift payment solution that alleviates complex payment processing procedures, lowers transaction fee rates, and improves complex authentication processes and lengthy settlement cycles is needed.

Built upon these foundations is the EML protocol management system. Through the EML platform, we will present solutions for a more familiar and convenient platform market and an advanced form of digital content market order. Additionally, we will provide a paradigm shift in content creation environments and a new distribution paradigm. The EML main network and infrastructure aspire to be the standard for the proper value creation and infinite growth of the platform market.

EML PROTOCOL BLOCK CHAIN



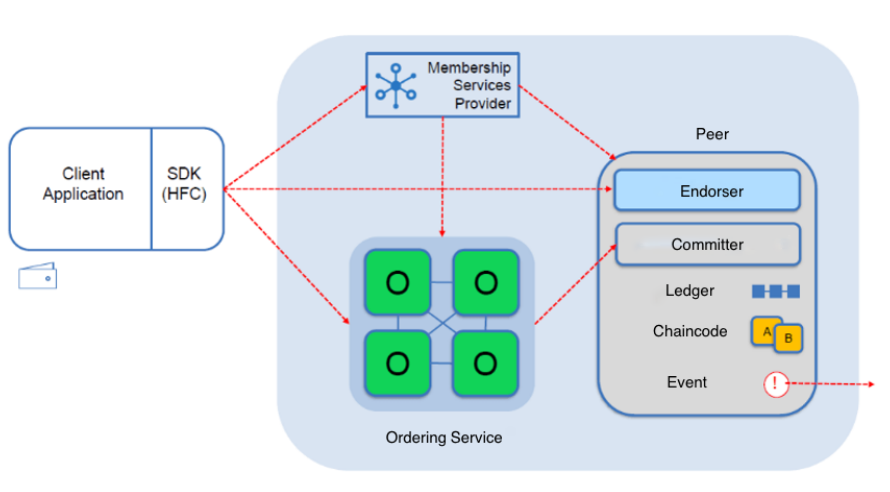
01. OVERVIEW



[EML Protocol Service Model]

The EML Protocol is an end-to-end payment platform that integrates the permissioned private blockchain form of Hyperledger Fabric, which allows only approved users to participate. This platform directly connects users and merchants (platforms), implementing services through blockchain-based smart contracts and coin circulation structures to simplify the consensus algorithm, thus providing a fast and cost-effective payment platform.

A separate service provider called the Membership Services Provider (MSP) is responsible for managing approvals and is involved in the processing of transactions within the Fabric framework.



[HyperLedger Fabric Architecture]

1) Roles within the Hyperledger Fabric Network

1-1. Clients : Clients encompass all specific applications and portal platforms that provide services for particular business activities. Clients interact with the Hyperledger Fabric network using the Hyperledger Fabric SDK or REST web services.

1-2. Peers : Peers within member organizations receive transaction invocation requests from clients internal to the organization. Peers maintain copies of the network state and ledger.

1-3. Orderer Service : The orderer service accepts approved transactions, orders them into blocks, and delivers the blocks to the committing peers.

2) Online and Offline Payment Platform

EML, the developer of the EML Protocol, has its own platform ecosystem and provides services integrating various payment methods such as mobile phones, QR codes, barcodes, gift vouchers, and online points at online and offline affiliated stores. The EML Protocol will offer APIs and SDKs for online payment integration within the platform ecosystem, as well as developer-friendly documentation. Utilizing the operational know-how and market understanding accumulated through running platform businesses, EML will create a cryptocurrency payment platform optimized for immediate implementation.

3) Multi-cryptocurrency Support

The EML Protocol aims to provide a payment platform that allows various cryptocurrencies, such as Bitcoin (BTC), Ethereum (ETH), Stellar (XLM), OmiseGO (OMG), and stablecoins like USDT, to be used as payment methods within the EML Protocol ecosystem, in addition to the EML Token issued by EML.

Furthermore, the EML Protocol will offer users the freedom to make and receive payments and settlements in their preferred cryptocurrency, not limited to the EML Token, both for platform users and affiliated merchants.

4) Platform and Affiliate Management System

Affiliate merchants within the EML platform ecosystem can easily set up promotional options through the smart contracts provided by the EML Protocol, and further customize more intricate options. The platform will offer an integrated management system for merchants to access their transaction history, revenue, profits, reservations, and matching data in real-time.

Affiliate merchants within the EML platform ecosystem can manage all payments made through the EML Protocol, regardless of payment channels or methods, whether online or offline, using a single tool. Utilizing the EML Protocol's transaction management tool, merchants can efficiently manage various data, such as transaction volume, payment frequency, and payment patterns across different channels.

The EML Protocol will be responsible for service transactions and payments within the cryptocurrency-based economic system, aiming to provide a foundation for the smooth circulation of cryptocurrencies within the economy.

By structuring payments on a blockchain basis, network participants can offer payment services within the EML platform ecosystem at low fees. Various platform operators can leverage the EML Protocol's payment network to drive marketing and business initiatives.

The EML Protocol's coin circulation comprises four participants: the EML Protocol network, EML's native wallet or wallet providers, affiliate merchants, and users. To ensure a safe and stable payment environment, they interact with each other, and the EML Token serves as a means of transaction and reward for network participants, providing payment or incentives to run and maintain the EML platform ecosystem. It also circulates as a cryptocurrency within the EML Protocol network.

5) EML Protocol network

The EML Protocol blockchain handles the verification and processing of payments and transactions, ensuring interoperability within the EML Protocol ecosystem. By incorporating Hyperledger Fabric, only authorized nodes and peers can generate blocks and process payments between users and affiliate merchants.

Given the characteristics of such permissioned blockchains, transactions can be safely and stably executed, ensuring high scalability. Furthermore, since it operates on a sufficiently simplified and agreed-upon protocol, the Transactions Per Second (TPS) offers significant performance advantages. For comparison, Bitcoin's TPS is around 7-10, Ethereum's is 15-100, while Hyperledger starts at 10,000 units.

6) Point Swap



[Point Swap]

If entities such as wallet providers, peers, and affiliate merchants within the EML Protocol issue their own reward points, they can expand the usage of these points through EML Protocol integration. These reward points include both on-chain and off-chain issued points and can be offered through wallet providers. Moreover, entities that require their own point issuance but lack the necessary infrastructure can utilize an on-chain-based point service communicating with the EML Protocol's protocol layer.

7) User

The EML Protocol will provide users with various discounts and promotional benefits for payments made using EML Tokens. Users can access payment services using most of their cryptocurrencies through the wallet provided by the EML Protocol and take advantage of various promotional benefits offered by affiliate merchants using the EML Protocol, thereby purchasing goods at lower prices. In addition, users can gain additional benefits by utilizing their purchase information through various third-party services provided by the EML Protocol.

The EML Protocol places utmost importance on user experience. Recognizing that a reduction in demand for the platform may result from user inconvenience, it strives to provide a user-friendly environment.

8) Merchants

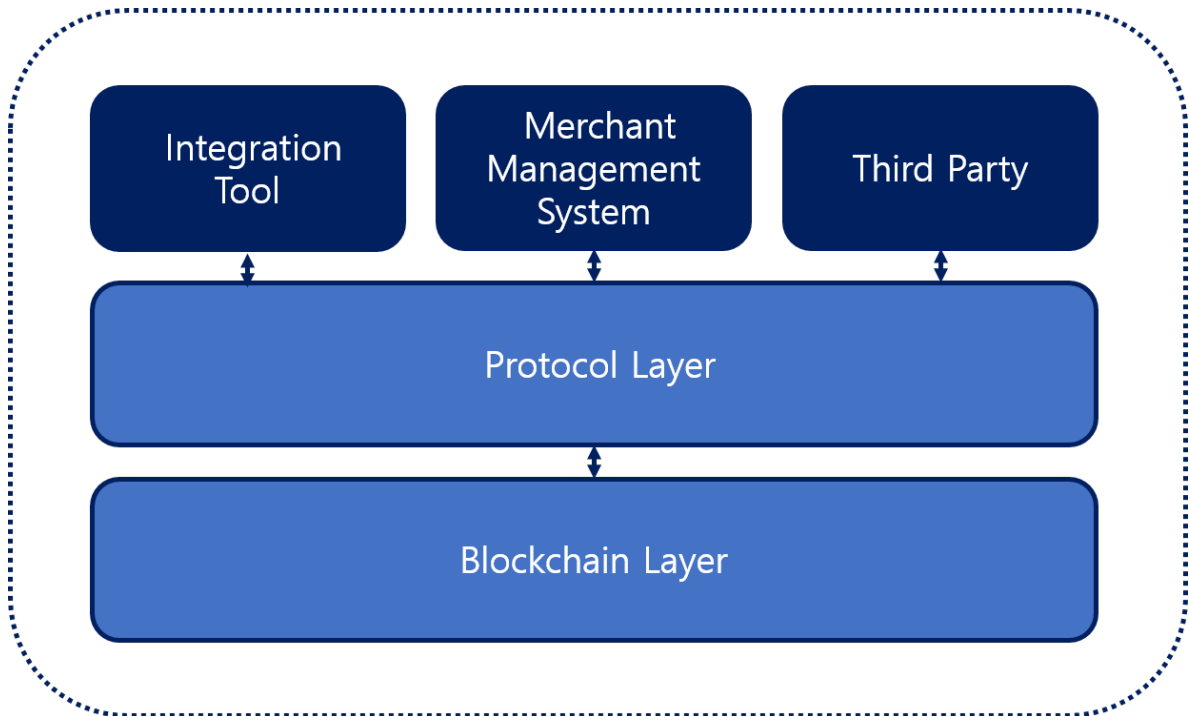
EML Protocol aims to offer merchants a faster settlement service compared to existing payment services. While the settlement period for traditional payment services takes over a day, EML Protocol can achieve faster settlement speeds through smart contracts. Additionally, merchants can meet their needs by directly choosing the currency they wish to receive for settlement, such as Bitcoin (BTC) or Ethereum (ETH).

9) Value Creation

The EML Protocol is designed based on the following principles:

- Redistribute economic gains and value that had been concentrated among middle network operators, returning them to the participants who compose and activate the ecosystem.
- Minimize temporal costs arising from duplicated tasks and interconnections among intermediaries, significantly shortening the time from payment to settlement.
- Grant users and merchants the right to choose the currency used for payment and settlement.
- Provide APIs and SDKs for online payment integration within the platform ecosystem, offering convenience in development and implementation.

02. SYSTEM COMPOSITION



[EML Protocol Composition]

The EML Protocol is structured in three layers: the blockchain layer, which encompasses the smart contracts and payment ledger of the EML Protocol; the protocol layer, which acts as the API responsible for connecting the blockchain layer to the actual services; and finally, the service layer, which implements real-world services by utilizing the protocol layer.

1) Service Layer

The service layer of the EML Protocol consists of an integration tool, a merchant management system, and third-party APIs. The integration tool is comprised of APIs, SDKs, and PoS integration tools for merchants to directly connect with the EML Protocol. The merchant management system, connected to the protocol layer, provides an interface that allows merchants to easily manage the EML Protocol's smart contracts without having prior knowledge about the blockchain.

2) Blockchain Layer

Taking into account the characteristics of payment services and future scalability, the EML Protocol has been developed by incorporating HyperLedger Fabric (HLF). It implements separate chain code for issuing EML Tokens and distinct APIs for each service based on HLF's basic functionality.

The EML Protocol's blocks store individual transaction information. As this transaction data may contain personal information or various details that can identify users, only participants in the EML Protocol can access and verify the actual transaction information. This is useful for various EML Protocol participants, such as merchants or wallet providers, to confirm that their customers' transactions have been processed correctly.

In the EML Protocol, a block is generated at least once per second when a transaction occurs. If 500 transactions occur during the block generation time, a block is generated even if one second has not elapsed.

Not only do EML Protocol blocks record user payments and transfer transactions, but they also log changes in Peer configurations, state changes in each ledger, and more within the EML Protocol network. Participants in the network can manage all necessary information for payments, settlements, and clearing in a unified manner by sharing a reliable ledger. This, in turn, helps reduce management costs.

3) Protocol Layer

The third-party API of the EML Protocol serves as a channel providing various functions, including wallet providers, m-POS API, and other features such as DEX and Dapp. Third parties use these channels to adopt or integrate the EML Protocol's blockchain and create transactions.

4) Implementation Method

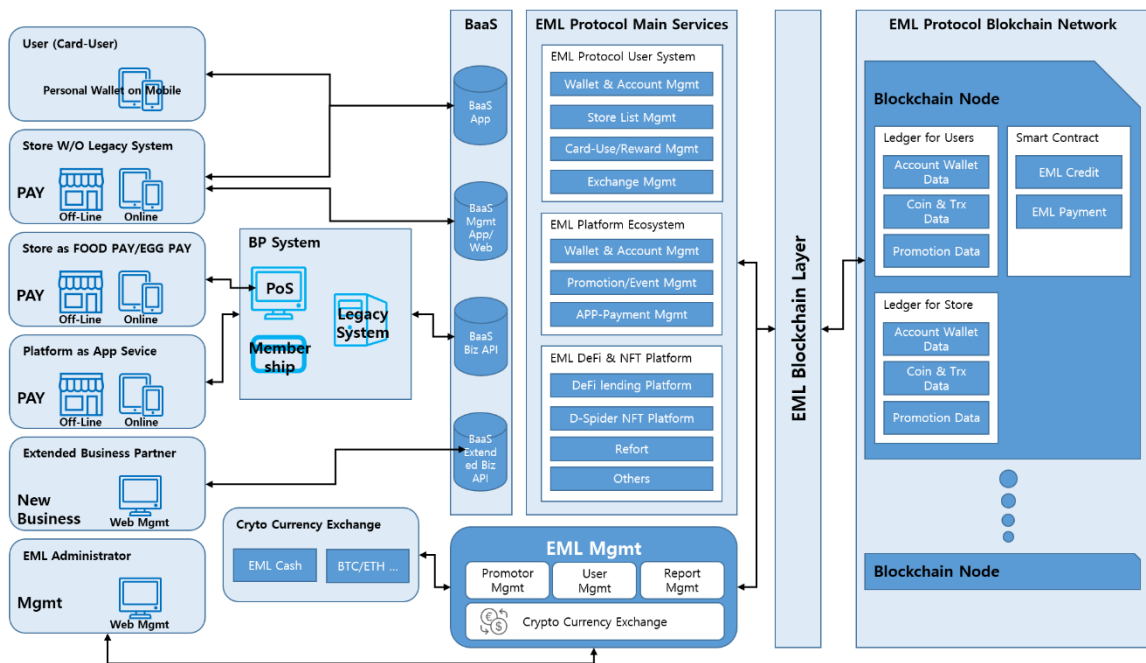
The EML Protocol's integration tools consist of online and offline integrated APIs, tools and SDKs, and m-POS. By utilizing these tools, merchants connected to the EML Protocol can take advantage of all its features.

Merchants can access the EML Protocol's separate management page via the merchant management system, which offers an intuitive UI for managing smart contracts and reviewing transaction data. Merchants can easily manage promotions and check transaction histories in an environment similar to a conventional web page, with all managed details stored in the EML Protocol's smart contracts.

The wallet, m-POS, and all features for wallet providers provided directly by the EML Protocol are connected to the EML Protocol blockchain through third-party APIs. The EML Protocol plans to continuously develop third-party APIs for external participants, greatly expanding its functionality while enabling a diverse range of business partners to create new value and benefits by leveraging their strengths.

03. DEVELOPMENT

1) EML Protocol Architecture



[EML Protocol Architecture]

The EML Protocol blockchain network corresponds to the EML core blockchain layer and is composed of a blockchain platform capable of executing distributed ledgers and associated smart contracts, which record EML coins, among other things.

The main service of the EML Protocol blockchain network is a server domain for Blockchain-as-a-Service (BaaS), which provides a cloud-based blockchain development environment. This service simplifies the process of adding and removing nodes, enabling provisioning of server resources & regardless of location. By abstracting the basic infrastructure of blockchain, it also provides a programming model for creating blockchain applications and building server services that support scalable, high-performance capabilities.

The EML Protocol offers a cloud-based solution for conveniently utilizing various blockchain technologies with differing configurations, such as Ethereum, EOS, and Tron. These platforms utilize different protocols, interfaces, and block sizes, making distributed application (DApp) development challenging. Environment setup, smart contract development, and DApp service operations must all be developed differently.

Blockchain-as-a-Service (BaaS) automatically generates and configures a specific blockchain platform development environment desired by developers through webpage settings, and supports a convenient smart contract code development and testing environment. Developers no longer need to create development environments individually. Moreover, it provides comprehensive data monitoring and analysis features necessary for service operation, basic service control like executing and stopping DApps, and technical support for blockchain DApp development, smart contract development and verification, hosting, and maintenance.

In essence, BaaS applies the Software-as-a-Service (SaaS) concept to blockchain technology, providing cloud-based solutions that enable more convenient utilization of various blockchain technologies with different configurations.

EML BaaS is a specialized cloud service for mobile applications, outsourcing end platforms. EML BaaS typically provides data storage, push notifications, user management, and access control features commonly used in mobile application backends. It also offers location services, analytics, and statistical information in conjunction with self-authentication or social networking service (SNS) authentication.

EML BaaS allows developers to connect with the cloud using APIs (Application Program Interfaces) during the mobile application development process, eliminating the need to write separate server-side code. This results in a more efficient application development environment.

The EML Protocol blockchain network is built in the form of a service server, applying a variety of backend technologies such as blockchain domains, RDB domains, NoSQL domains, and memory cache domains.

The main services within the EML Protocol include the User system, which contains account information for EML Protocol members, the Payment System, the EML Platform Ecosystem, the DeFi Platform, and the EML NFT Platform.

2. Blockchain Payment System

2-1. Overview

The EML Protocol provides a Blockchain Payment System for the economic activities of EML Protocol members worldwide. The EML Protocol's Blockchain Payment System resolves drawbacks such as exchange rate fluctuations between national currencies, slow transfer speeds, and fees through the application of blockchain technology.

2-2. Cryptocurrency Payments

Within the EML Protocol ecosystem, the EML Token serves as the base currency, providing cryptocurrency payment functionality. The platform offers a variety of features through a wallet, including deposits, withdrawals, payments, convenient email-based transfers, and offline payments.

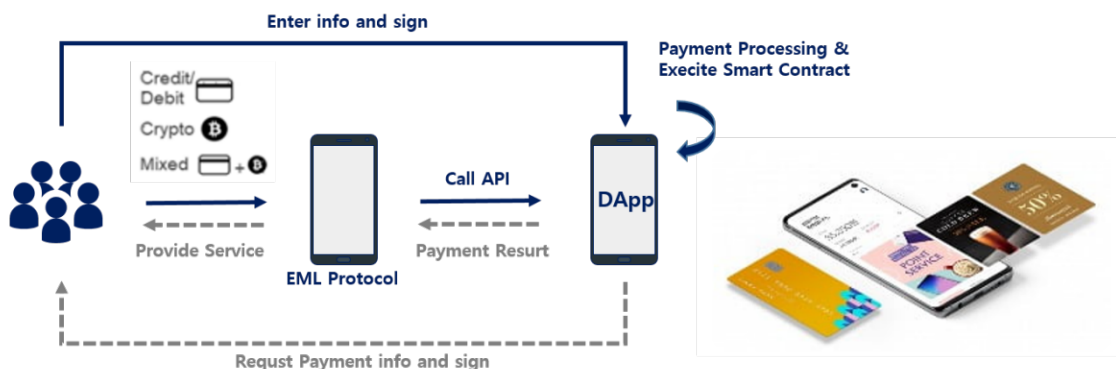
2-3. Swapping Various Coins and EML Tokens

Within the EML Protocol ecosystem, swapping various coins and EML Tokens is possible. This enables convenient possession of EML Tokens without going through exchanges. Swapping with various cryptocurrencies such as Bitcoin and Ethereum is also possible, with plans to continuously establish policies for better services.

2-4. Hybrid Payments

The EML Protocol offers hybrid payments, which enable the combination of traditional payment methods such as credit cards, cash, and points with EML Tokens for transactions. EML Protocol members can make payments anywhere in the world using the most advantageous payment method for them at the time of payment, regardless of the payment method they possess.

2-5. Payment System Process

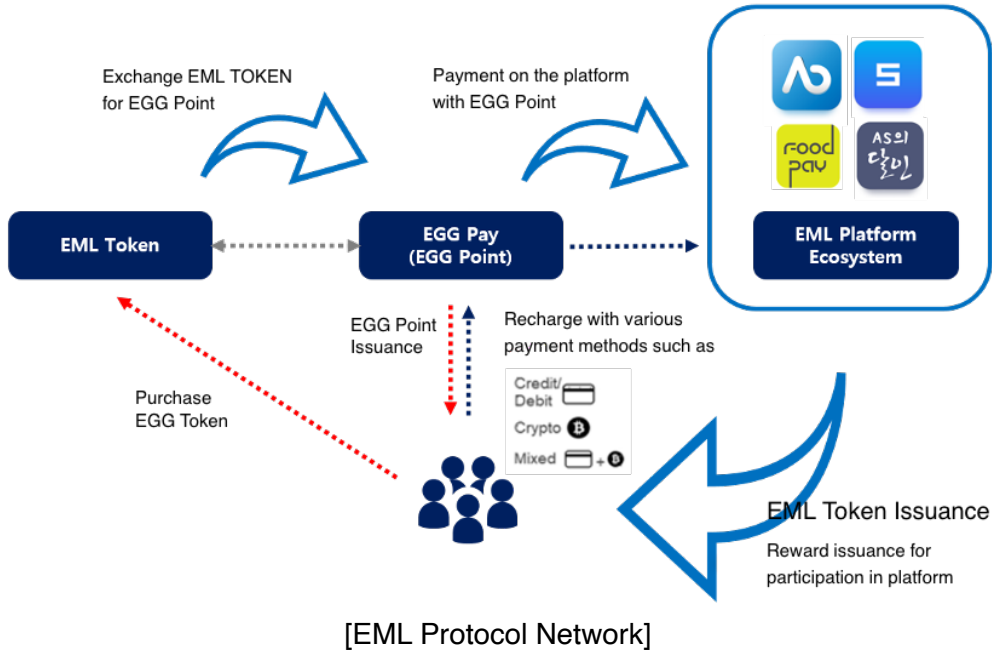


【Payment System Process】

EML PLATFORM ECOSYSTEM

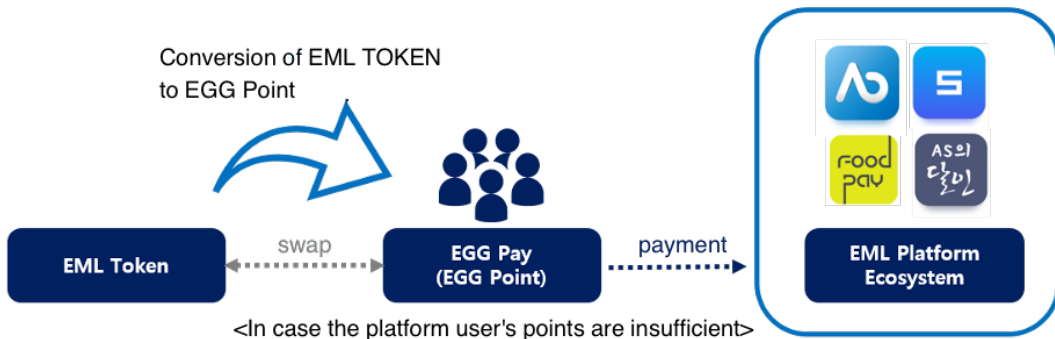


01. Overview



EML is engaged in the development and operation of various platforms. Possessing a diverse ecosystem of platforms ranging from the food industry to products and lifestyle A/S, EML is transitioning from traditional platform businesses with fixed rules and rewards to protocol businesses, offering a variety of rewards and conveniences to members and participants.

Platforms within the EML Protocol facilitate transactions between users, providers, and intermediaries. As these transactions form a circular system rather than a unidirectional one, continuous exchanges and rewards occur. Should a user lack points during a platform transaction, they can delegate payment through their held tokens.



01. FOOD PAY

1) Market

The dining market can be classified into on-site dining and delivery dining. While mobile marketing is active for delivery dining, on-site dining lacks a distinct alternative.

Although the delivery-related marketing market is already quite active, the on-site dining market, which is the most vulnerable to marketing, is in need of prompt solutions.

The global dining market is valued at \$6.2 trillion, equivalent to 8,283.2 trillion KRW. In South Korea, the overall dining market is worth 200 trillion KRW, with the dining industry representing a 108 trillion KRW market. Despite the increase in delivery dining following the COVID-19 pandemic, on-site dining still accounts for over 70%, while 20-30% is occupied by delivery dining.

2) Overview

FoodPay provides users with services such as key information on nearby restaurants (menu, store information, coupons, discount information, etc.), reservations, and payments, targeting the on-site dining market, which is distinct from the delivery dining market. It also offers marketing, member management, and settlement services to franchisees, functioning as a location-based matching platform for offline restaurants.



3) Structure

FoodPay is divided into user apps, manager (store sales participant) apps, and store apps, and is building an administrator ERP and POS system.

User: A customer using the franchise

Manager: A participant operating a franchise and receiving sales commissions for the franchises they operate

Franchise: A company providing services to customers

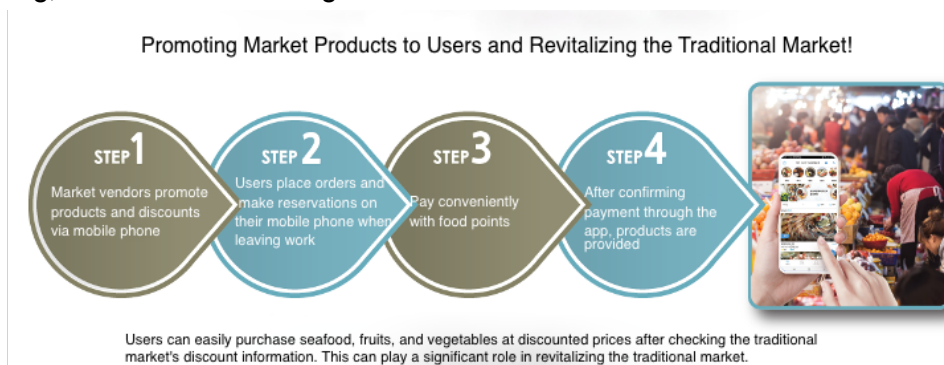
4) Compensation

The EML Protocol provides users with discounts and rewards for purchases and reviews, while managers receive rewards for operating franchises. Franchise owners receive reduced payment fees and compensation based on service (product) discounts and are separately rewarded for user reviews. Rewards and compensation can take the form of coins or points, and the rewards received can be used at EML platform ecosystem franchises or for paying one's own fees.

5) Vision

5-1. FoodPay does not require a separate POS system.

The platform is convenient for traditional market merchants and small business owners vulnerable to payment challenges, as it enables easy ordering, reservation, payment, marketing, and discounts through a mobile device.



5-2. FoodPay is designed with a multilingual base.

Not only domestic users but also travelers from abroad can easily use the app in their native language, and the location-based design allows users to conveniently find nearby franchises and select menus. Additionally, through pre-booking, users can enjoy the service without the inconvenience of waiting.



02. Master of A/S - Platform Service

1) Market

In 2021, the market size for O2O-based businesses reached 5.43 trillion KRW, a 54.6% increase compared to the previous year, while the transaction volume for O2O services increased by 17.2% to 147.38 trillion KRW. To date, there are no regulations to protect small businesses related to O2O services, and there are no specific regulations for the O2O services themselves. Depending on the type of O2O service (food, accommodation, sharing, etc.), different regulations are required. Issues such as unfair trade, excessive fees, and entry into existing industries have emerged in some sectors, and the majority of workers in the O2O business operate as platform workers, raising concerns about labor environment stability.

2) Overview

Master of A/S is an integrated A/S O2O platform that connects users in need of A/S services and service technicians (engineers) through a mobile app. It is available without limitations on location or category and can be accessed anytime, anywhere via mobile devices. When a service user registers simple information (service location, damaged product photo, description), service technicians nationwide enter their conditions (cost, processing time, repair history), and customers choose from among these options on the service matching platform.



3) Structure

The Master of A/S is divided into a user app and a technician app, with a sales management ERP and an administrator ERP.

User: A customer using A/S services

Sales Manager: A participant recruiting A/S technicians and receiving sales commissions for recruited technicians

A/S Technician: A technician providing A/S services to users

4) Compensation

The EML Protocol offers users discounts and rewards for utilizing A/S services and providing reviews, while sales managers receive rewards for recruiting A/S technicians. A/S technicians receive reduced payment fees and compensation based on service (product) discounts, and are separately rewarded for user reviews. Rewards and compensation can take the form of coins or points, and the rewards received can be used at EML platform ecosystem franchises or for paying one's own fees.

5) Vision

5-1. Master of A/S does not require a separate office.

By simply receiving A/S requests via mobile devices and kindly handling the relevant A/S at nearby locations, small business owners find it convenient to use the platform, as it assists with marketing and user acquisition.



5-2. A/S platform tools transcend national boundaries.

A/S methods and actions go beyond countries and languages. Master of A/S aims to establish a domestic A/S platform standard and become the global standard A/S platform.



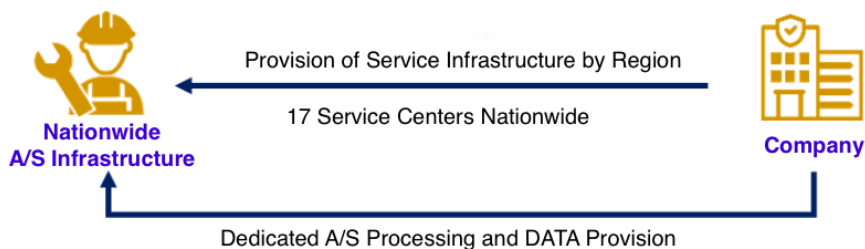
03. AllService Platform

1) Market

If a company that manufactures products fails to establish a nationwide A/S service, it becomes impossible to enter department stores, home shopping channels, and shopping malls, ultimately losing the opportunity to sell products to general consumers. As a result, even if it incurs costs, establishing a dedicated A/S workforce, department, and service infrastructure is an essential element of corporate activities. A/S is a critical service area that companies must build and operate to produce and sell products. Although many companies already recognize the importance of A/S, it is challenging for all of them to have a nationwide A/S network from the start of product production. Everything related to A/S is connected to costs and remains a risk to the company. The domestic A/S market sales scale for manufacturers, wholesalers, retailers, and import distributors is about 70 trillion KRW, but it has not yet been systematized globally.

2) Overview

The Allservice platform is a B2C platform that connects users in need of services with A/S technicians capable of providing services. Users can register their desired services through photos and videos, and nearby A/S technicians can check and confirm the requests, with matching occurring through condition registration. This platform is a corporate-oriented service closely related to daily life. Companies can use a fully-built A/S network and solution without initial investment, providing a service that directly matches customers and A/S technicians without going through multiple stages.



3) Structure

Allservice is divided into a user app and a regional A/S technician app, with a headquarter ERP and regional A/S center ERP.

User: A customer using A/S services

Regional A/S Center ERP: A system that receives and manages calls for A/S requested by users

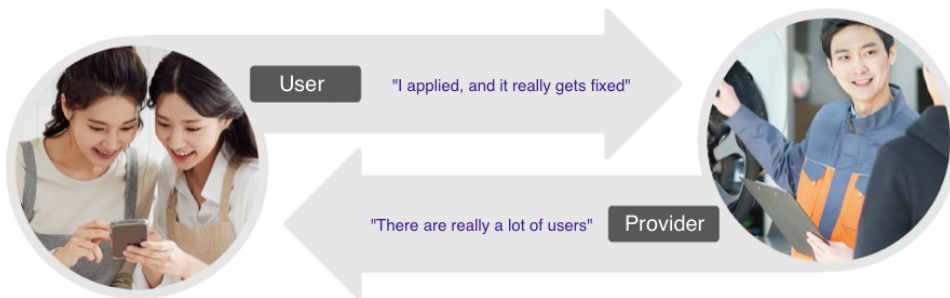
Regional A/S Technician: An A/S technician providing A/S services to users

4) Compensation

The EML Protocol offers users discounts and rewards for utilizing after-sales (A/S) services and submitting reviews, while regional A/S centers receive compensation for responding to A/S calls. A/S technicians benefit from reduced payment processing fees and other compensations due to service (product) discounts, and they are also granted separate rewards for user reviews. Rewards and compensations are provided in the form of coins or points, which can be used at affiliated stores within the EML platform ecosystem or applied towards payment of internal fees.

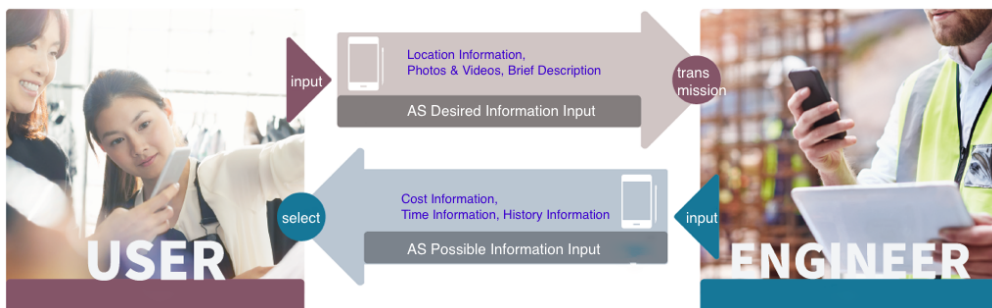
5) Vision

5-1. Allservice provides small businesses the opportunity to establish a nationwide A/S network. The platform is fully equipped with the necessary infrastructure, education, service tools, and marketing support provided by the EML Protocol. With the right collaborators, it is possible to conveniently establish a nationwide A/S network.



5-2. A/S platform tools transcend national boundaries.

A/S methods and practices surpass both national and linguistic barriers. Allservice aims to create a standardized A/S platform within the country and ultimately become the global standard for A/S platforms.



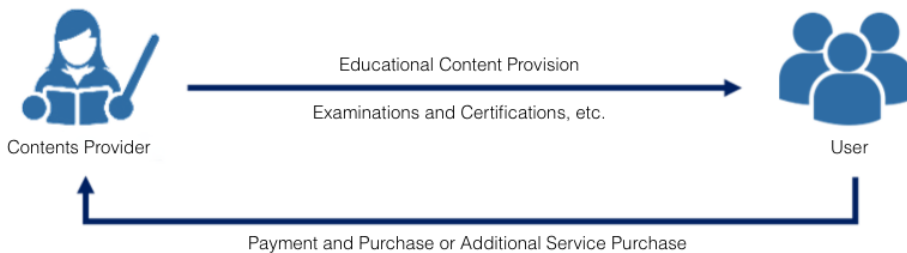
04. Education Platform(Exam Guru)

1) Market

With the COVID-19 pandemic leading to a contraction in the offline education market, the online education sector has experienced explosive growth. In this context, open education platforms have garnered attention for lowering entry barriers for instructors and facilitating access to a wide variety of course categories. According to a 2022 EdTech seminar survey, South Korea's EdTech market revenue in 2021 reached approximately KRW 7.325 trillion, with an expected annual growth rate of 8.5%, amounting to KRW 9.983 trillion by 2025.

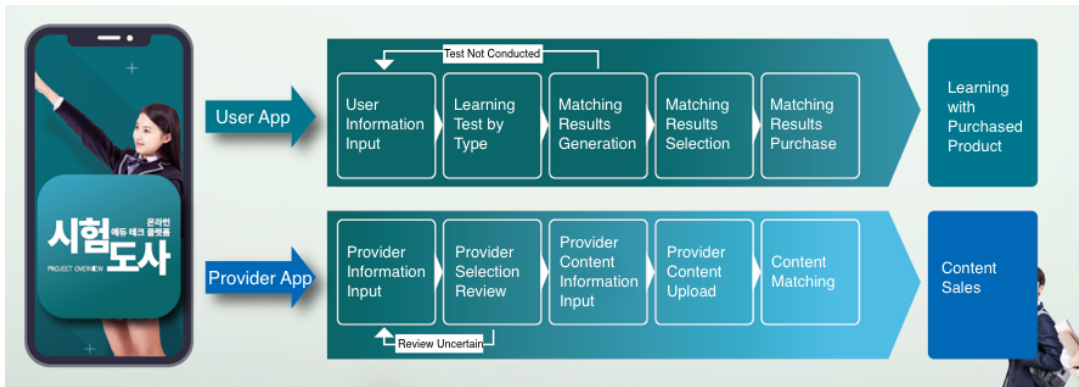
2) Overview

The Exam Guru platform is an educational content matching platform that connects education content providers and users. Users can purchase and access exam-related content from institutions, textbooks, and local teachers through the app, as well as receive additional services such as online lectures, creating a new concept in educational platforms.



3) Structure

Exam Guru is divided into user and content provider sections and consists of a corporate ERP system, as well as regional sales agents and seller ERP systems. Users are customers who utilize exam preparation materials, textbooks, and educational content; sales managers use the ERP system to recruit and manage content providers; and education content providers supply educational materials to users.



4) Compensation

The EML Protocol offers users discounts and rewards for utilizing educational content services and submitting reviews, while sales managers receive compensation based on user participation. Education content providers benefit from reduced payment processing fees and other compensations due to service (product) discounts, and they are also granted separate rewards for user reviews. Rewards and compensations are provided in the form of coins or points, which can be used at affiliated stores within the EML platform ecosystem or applied towards payment of internal fees.

5) Vision

5-1. Providing market entry opportunities for novice instructors.

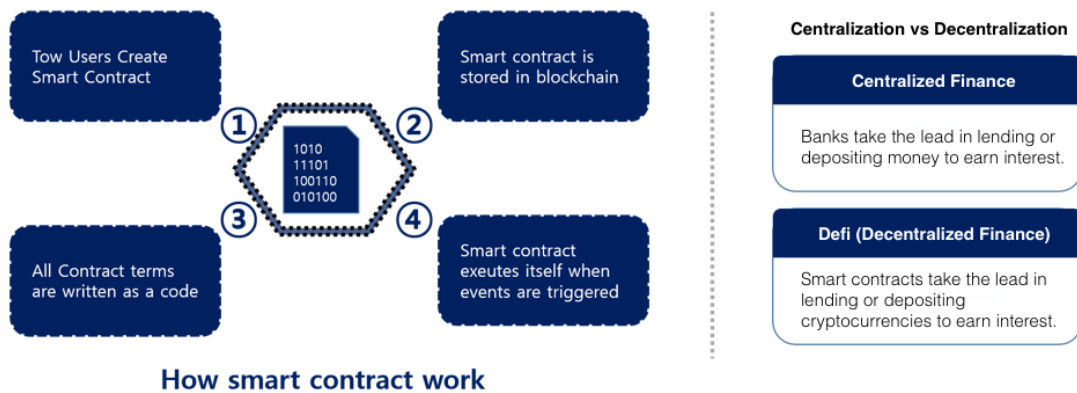
The platform is fully prepared for establishing connections and building a network. With the EML Protocol providing education, service tools, and marketing support, all that is needed are collaborators to conveniently create a nationwide A/S network.



05. DeFi Platform

1) DeFi

DeFi (Decentralized Finance) refers to decentralized financial or monetary systems. It is an online financial service that utilizes blockchain technology, with digital assets (cryptocurrencies) being traded primarily and transactions being automatically processed through blockchain technology. Instead of centralized financial institutions, DeFi provides financial services using blockchain technology such as smart contracts. The basic model involves holding coins and receiving interest, and DeFi provides various financial services including trading, insurance, and loans through blockchain technology.



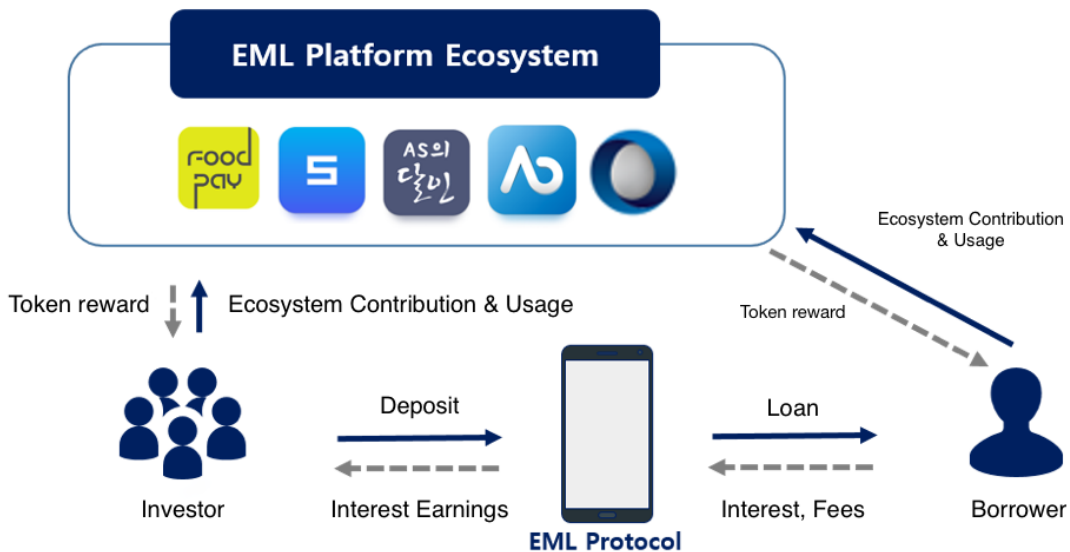
2) Advantage of DeFi

The biggest advantage of DeFi is that it operates on a decentralized structure, minimizing the instability of centralized systems. DeFi is based on cryptocurrencies and does not have a central institution to guarantee trust, with software or code serving as the main trust factor. Additionally, since the system is operated by globally distributed nodes instead of a central database, the risk of hacking or system shutdown is reduced, and transparency is guaranteed with anyone being able to access network data.

3) EML DeFi Platform

EML's DeFi platform serves as an intermediary that allows users to lend or borrow EML coins. Members with large holdings of EML coins can lend them out and earn interest through the EML token. On the other hand, members with smaller holdings of EML coins can pay interest and use discounted interest rates to purchase goods or services within the EML platform ecosystem.

Since the system operates according to predetermined code, it can be used anywhere in the world. Holding more EML coins can generate greater profits, and borrowed coins can earn rewards through the platform's ecosystem, leading to continued development and growth. Furthermore, the DeFi platform developed alongside the ecosystem helps sustain the rise in the value of EML coins.



06. EML NFT Blockchain Platform

1. NFT (Non-Fungible Token)

NFT (Non-Fungible Token) refers to "non-interchangeable tokens" that represent unique digital assets that cannot be exchanged for other tokens using blockchain technology. This makes it possible to clearly identify and transfer ownership of assets and convert existing assets into digital tokens. Additionally, all related information is stored on the blockchain, making it impossible to manipulate or falsify, and the original issuer can be verified at any time. These characteristics have recently had a significant impact on digital art, online sports, game item trading, and other industries, and a wide range of digital content is being produced on various devices such as PCs, tablets, and smartphones.

2. Overview of EML NFT Blockchain Platform

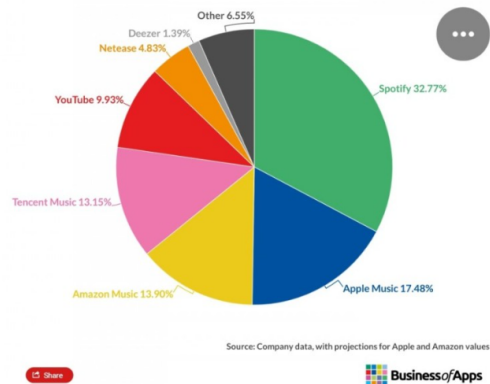
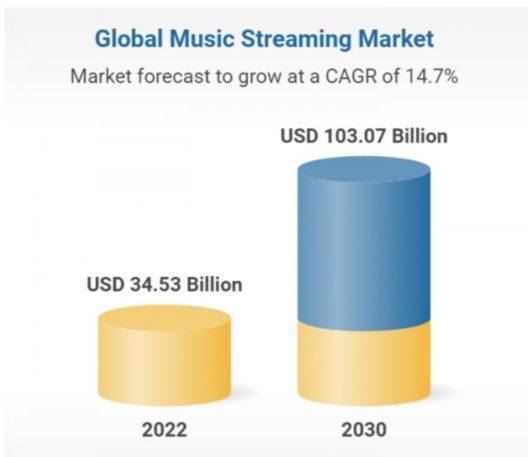
EML NFT Platform is a digital content distribution and management platform based on blockchain technology. It encrypts and manages content in real-time from creation to distribution, and tracks and controls various usage rights such as viewing and printing counts, copying/pasting, and usage periods. In addition, it can be operated freely on most PC-based devices without affecting the unique properties of the files themselves, and without the need for a separate operating solution installation. This functionality enables control over content operations regardless of how different countries interpret copyright, and provides a platform that can be used anywhere in the world where internet connectivity is available.



3) EML NFT Blockchain Business Market

3-1. Music Market

The global annual value of the music industry is currently estimated at over \$63 billion, making it one of the most influential industries in the world. Goldman Sachs predicts that the total revenue of the music industry (live, recorded, and publishing) will increase from \$62 billion in 2017 to \$131 billion in 2030. In 2022, the global record market is expected to reach \$5.9 billion in the US, \$2.7 billion in Japan, and \$1.32 billion in Germany. When "Proof" was released on June 10, 2022, BTS CDs sold 2.16 million copies in just one day.



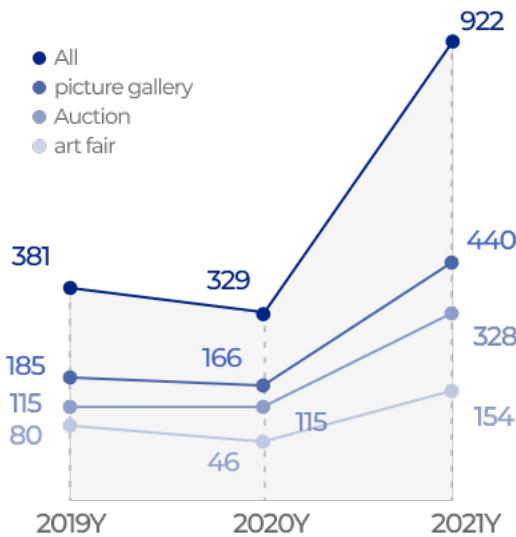
3-2. Art Market

The Korean art market surpassed KRW 900 billion in trading volume last year. According to the "2021 Korean Art Market Settlement" report by the Arts Management Support Center, the market size was approximately KRW 92.23 billion, including KRW 32.8 billion in auction markets, KRW 44 billion in galleries, and KRW 15.43 billion in art fairs. This is a significant increase from the KRW 32.91 billion market size in 2020 when the art market decreased by 13.7% due to the COVID-19 pandemic.

Recently, there has been an "Art-tech" boom that is driving growth in the art market. Artworks are traditionally known to be high-yielding assets. According to Citibank's 2021 Art Market Report, from 1985 to 2020, contemporary art had the second-highest return on long-term investment after hedge funds at 11.5%. In addition, art investment advisory firm Masterworks found that the returns on contemporary art over the past 25 years (14%) are significantly higher than those of the S&P 500 (9.5%). Art is considered an attractive alternative investment asset because it is less sensitive to economic indicators than stocks or bonds. In 2017, a Saudi Arabian sovereign fund purchased Leonardo da Vinci's "Salvator Mundi" for a record-breaking \$450.3 million (approximately 506 billion KRW) at a Christie's auction in New York, and the art investment rush among Middle Eastern tycoons continues.

The size of the Korean art market over the past three years

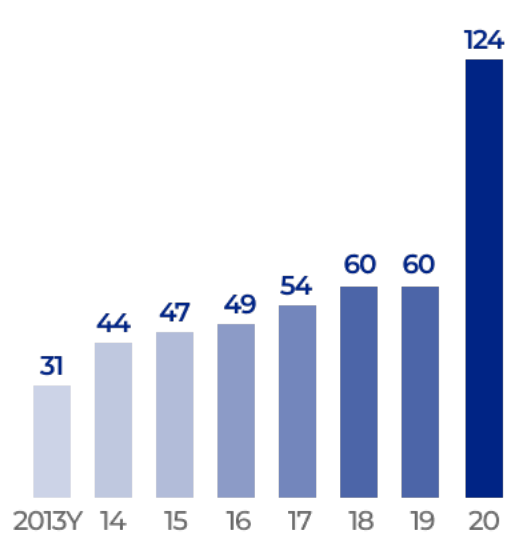
Unit: 1 Million Dollars
(Hwarang Market is estimated by authorities)



Source: Arts Management Support Center

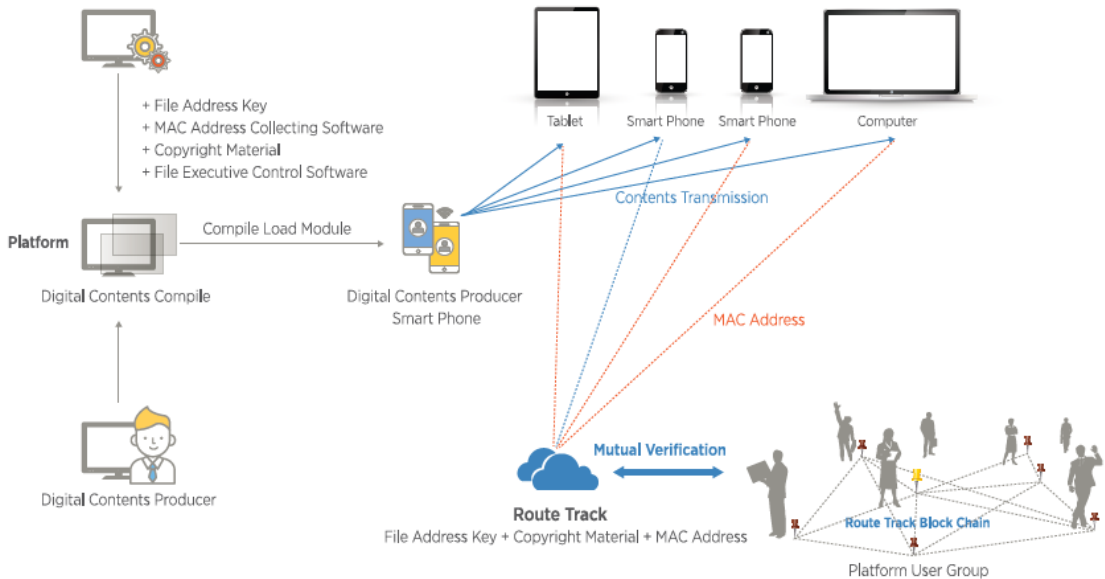
Size of online art market

Unit: Dollars (based on transaction value)
Fine and decorative arts, including antiques



4) EML NFT Blockchain Platform

EML NFT blockchain platform is a system for managing and controlling the movement of digital content based on blockchain technology. Specifically, in the process of online content distribution or circulation, the EML NFT platform compiles the content file and programs file address keys, MAC address collecting software, copyright materials, and file execution control software into the file header to generate a compiled digital content file. When the digital content is distributed or circulated, the platform collects its movement path to create a route track as a history of its movement. This route track is sent to participants (nodes) on the network to confirm its validity, and if agreed upon, the route track is blockified and managed on the route track blockchain. This allows for the control of digital content execution and the management of movement path history from inappropriate users.



[EML NFT Platform]

5) EML NFT Blockchain Platform Business

The EML NFT Platform has endless possibilities in the digital content business area. All digital media devices such as documents, pictures, photos, music, videos, games, and programs can be protected and operated through the EML NFT platform. The target audience is not limited to individuals, groups, companies, and governments, and it transcends national borders as long as there is an internet connection.

Content creators or distributors can check the operating data of the content through the EML NFT platform, such as when, where, how, and how much it is being operated, and in some cases, they can even suspend the operation of the content. This not only strengthens the rights of content creators and users, but also creates a fair business environment where the power that used to be concentrated in a single market for distribution is distributed to both content creators and users.

Creators who previously received third-party management services for various copyrights such as music and art no longer need to feel uneasy about their trust (COUNT). The EML NFT platform provides data that everyone can clearly understand, and participants can protect and verify their rights fairly and safely through approval and encryption.

Due to the explosive growth of the smartphone and personal SNS markets, the digital content market is expected to continue to grow, which will soon be connected to the expansion of the EML NFT platform network. By participating in the EML NFT platform, content can be converted into revenue, and the more participants there are, the greater the benefits for everyone involved.

As long as the sharing of content through digital devices continues, the value of the EML NFT platform will continue to rise. This increase in value will be further accelerated by the circular structure of the digital content market. Contents converted into NFTs through the EML NFT platform will be traded through the EML protocol, and the benefits will be distributed reasonably to all participants.

TOKEN ECONOMY



1. EML Token

The EML Token is a utility token based on Ethereum, which serves as a digital asset that can be used within the EML Commerce Platform, DeFi Platform, and NFT D-Spider Platform ecosystems. The total issuance of EML Token is two billion, which can be obtained through purchasing on digital asset exchanges or exchanging, borrowing, and earning rewards within the EML Network.

The EML Token serves as a fundamental currency for payment and discount application within the EML Commerce Platform, as collateral for the DeFi Platform, and as a means of payment within the D-Spider NFT Platform. In order to maintain payment stability by eliminating the price volatility of EML Token, stable coins can be issued based on EML Token or other collateral.

2. Token Economy

The core of the EML Token Economy lies in the discount rate application based on the number of EML Token holdings and the EML Platform Ecosystem. The majority of EML members aim to utilize services or purchase products at a lower cost through the EML Platform Ecosystem. By holding EML Token, they can receive additional discounts of up to 30% on service usage fees, thus to continue receiving discounts, continuous possession of EML Token is necessary.

Furthermore, in order to maintain continuous discount rates, if EML Token is used for purchases, the shortage of EML Token must be acquired through purchase on digital asset exchanges or rewards within the EML Network. The value of EML Token within the EML Token Economy will continue to rise, thus it is anticipated that early participants or investors in the EML Network will reap significant benefits.

EML Company will strive for the expansion and value enhancement of the EML Platform Ecosystem, continuously rewarding all participants with the value appreciation of EML Token and providing additional income, ultimately realizing a fair and equitable world where all participants share the value.

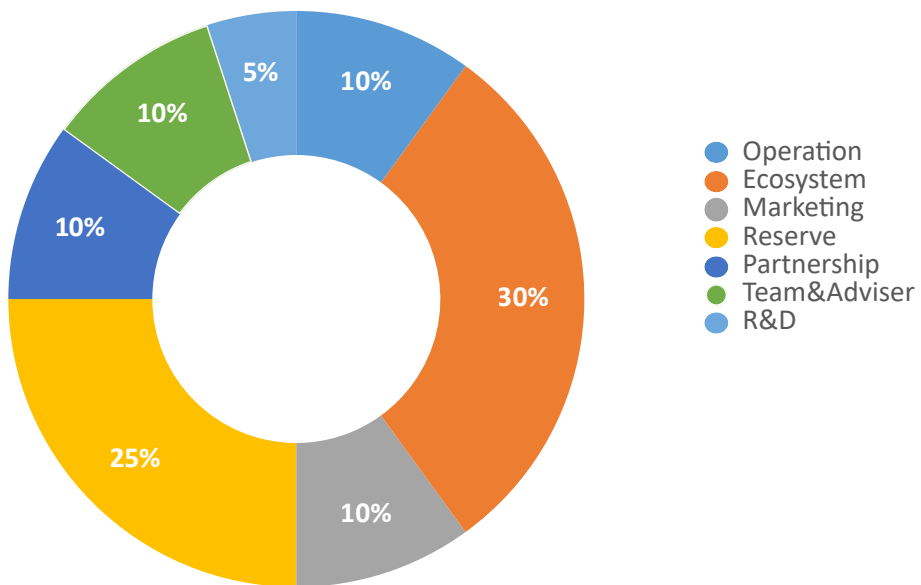
EML TOKEN DISTRIBUTION



1. EML Token Distribution

The EML Token will be issued in its entirety, amounting to two billion tokens, and shall be allocated as follows: 10% towards operational expenses, 30% towards ecosystem, 10% towards marketing efforts, 10% towards strategic partnerships, 10% towards team and advisory compensations, 25% towards the reserve, and 5% towards to R&D investments.

EML Token Distribution



ROAD MAP



2023

■ Q1 – EML Protocol Idea and Feasibility Verification

- Establishment of the EML team
- Release of White Paper 1.0 version
- Design of EML Protocol blockchain payment system

■ Q2 - Architecture

- Configuration and design of EML Protocol blockchain platform architecture
- Completion and testing of EML Protocol blockchain payment system
- Integration and testing of EML Protocol platform

■ Q3 – Release

- Release of EML Protocol blockchain payment system
- Release of EML Protocol B2B/B2C platform
- Integration and testing of EML Protocol credit card payment system

■ Q3 - Operation

- Operation of EML Protocol platform
- Testing of EML Protocol DeFi-based platform
- Testing of EML DEX exchange platform
- Testing of D-NFT platform
- Listing on global exchanges

■ Q3 - Technical Expansion

- Completion and release of EML DeFi platform
- Completion and release of D-Spider NFT platform

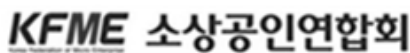
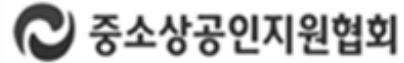
■ Q4 - Mainnet Switch and Platform Expansion

- Switch to EML Protocol mainnet
- EML token swap and lockup release
- Expansion of services through platform expansion

Partners



03. EML PARTNERS



DISCLAIMER



1. The purpose of this whitepaper is to describe the Service Platform of EML, and it may be reviewed and revised due to the progress schedule of the project, its ongoing status, and other factors. All information contained herein should be read carefully and thoroughly.
2. No part or the entirety of this whitepaper's content shall be conveyed or mentioned, directly or indirectly, to individuals in countries or jurisdictions where the provision, distribution, purchase, sale, or holding of cryptographic tokens is not permitted or is restricted. Furthermore, if individuals in countries or regions where the contents of this whitepaper are deemed illegal become aware of and invest in it, such investments shall be considered at their own risk, and EML bears no legal responsibility for them.
3. This whitepaper was not written for the purpose of raising or soliciting funds, and nobody may raise or solicit funds based on this whitepaper. Actions such as the sending of this whitepaper should not be understood as a purchase offer.
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6. This whitepaper contains information on future plans, which were written based on the realization of these plans, and the contents of this whitepaper do not guarantee the integrity of the service upon its eventual development completion. Furthermore, the contents of this whitepaper do not assume responsibility for errors and delays in the service provision and development process, as well as matters related to them, and nobody shall be held liable for such matters.

7. The contents of this whitepaper shall not be interpreted as legal, financial, accounting, or tax advice in any circumstance, and separate legal, financial, accounting, and tax measures may be incurred based on the policies and laws of each country or region in the process of purchasing and using coins. Buyers and users may require separate consultation, and the Service Platform provided by EML shall not be held responsible for such matters.

8. EML's Service Platform does not assume responsibility for any tangible or intangible losses incurred due to unintended reasons, such as system attacks by third parties, force majeure, and natural disasters, which may cause delays in the establishment of the ecosystem.

9. It is the buyer's responsibility to securely store passwords, personal keys, PINs, and other codes necessary for accessing this software. Should the buyer incur risks due to the loss or leakage of their personal key, the buyer agrees that all assets related to the wallet may be lost, and all responsibility for such matters lies with the buyer.

10. Buyers are not exempt from all risks, including the decline in token value, changes in market conditions, uncertainties, political risks, and competition with competitors, and the development of some of the Service Platforms provided by EML may be suspended or the service direction and plans may change due to these factors. Additionally, within the limits permitted by law, this software is provided "as is," and no kind of statement or warranty, either explicit or implicit (including, but not limited to, warranties of merchantability, fitness for a particular purpose, and non-infringement),

11. EML Corporation and its distributors disclaim any liability for indirect, special, incidental, consequential, or any other damages, regardless of whether they are due to tort, contract, or any other cause (including but not limited to profit, revenue, personal savings, or data loss), to the maximum extent permitted by applicable laws, regulations, and rules. This applies irrespective of any reliance on or use of the information associated with this white paper, or any damage or loss incurred as a result of your acquisition of EML tokens.

12. The purchaser does not delegate or transfer to others the responsibility for all decision-making matters, including the operation policy and discontinuation of the ecosystem. All decisions are made at the sole discretion of the purchaser.

13. EML Corporation strives to provide a safe, compliant, and respected service to its customers. To this end, EML Corporation emphasizes the adoption of comprehensive and rigorous Know Your Customer (KYC), Anti-Money Laundering (AML), and Counter Financing of Terrorism (CFT) systems. This includes suspicious transaction monitoring and mandatory reporting to local regulatory authorities and compliance organizations. The applicable specifics vary depending on the location of the client. Detailed AML/CFT and KYC system requirements per jurisdiction are specified in the Token Sale Terms and Conditions. Our compliance network is designed to meet regulatory compliance requirements not only in specific local areas but also globally. This enhances trust and facilitates the smooth operation of EML Corporation. EML Corporation reserves the right to refuse service to individuals within or originating from jurisdictions that do not meet international AML/CFT standards or individuals considered as Politically Exposed Persons (PEPs).