



Advance capitalism to the next stage
by using Blockchain Technology.

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“REACH, to the Future of this Planet.”

Richness cannot be measured by the amount of money.
If you can get anything you want, and if you can go anywhere you want to, is it enough?

You cannot feel “rich” without sharing your time or feelings with someone...
That is the reason why people support and cuddle each other.

Appreciate small happiness around us.
Then pass it to somebody next to you.
Somebody close to you,
Or somebody in the world, even if you haven't met...
If every person passes “ARIGATO” one by one,
Our future should be much richer...

We will hold richness that we haven't experienced yet...
With PEACE COIN.

Across borders and across the sea,
Reach, to the future of this planet.



GENERAL INFORMATION

** Please read through this whitepaper, which describes the initial token sale in which the PEACE COIN TOKEN (PCE) is sold. As explained in this whitepaper, PCE is a Crypto Token which is designed to be used for various services provided by the PEACE COIN Platform. PCE can also be used as a mode of payment and representing gratitude, compliments and inspirations to others and services. PEACE COIN OÜ will generally not limit PCE's usage or the types of business entities and/or projects that would like to use PCE for their business/projects.

Please note that PCE is not intended to constitute a security in any jurisdiction, nor this whitepaper is a solicitation for investment or a collective investment scheme in any terms. This whitepaper and/or token sale is not pertain in any way to an offering of securities in any jurisdiction. The purchasers are advised to read this document carefully in full, and perform due diligence.

Purchases of PCE made by the purchasers are final and non-refundable, so anyone that would like to participate in the token sale should carefully weigh the risks, costs, advantages and disadvantages of acquiring PCE at their own responsibility.

LIMITATION OF THE PURCHASERS

At this stage, a citizen or resident (tax or otherwise) of any country or state where purchase of PCE or similar Crypto Tokens may be prohibited, or the token sale itself is deemed to be not compliant with the applicable laws and regulations, are not eligible to and shall not purchase PCE via its token sale. Please note that if you are a resident of People's Republic of China, Republic of Korea, The United States and Japan, you will not be able to purchase PCE through the token sale.

At this stage, a citizen or resident (tax or otherwise) of any country or state where purchase of PCE or similar Crypto Tokens which contains future possibility of gambling

or unjustified sales promotion premium related usages may be prohibited are not eligible to and shall not purchase PCE via its token sale. And if PEACE COIN OÜ detects any purchase from a country or state where purchase of PCE or similar Crypto Tokens are prohibited after purchase, the same amount of Bitcoin or Ethereum at the time of purchase will be refunded.

Purchasers of PCE should have functional understanding of any mechanisms related to other Crypto Tokens. PEACE COIN OÜ or any related entities, officers and employees thereof will not be responsible in any way for loss of any Crypto Tokens, including PCE, and/or fiat currency resulting from actions taken by, or omissions of the purchasers. Please refrain from purchasing PCE or participating in the token sale of PCE if you do not have required experience or expertise.

Purchasers of PCE should carefully consider the risks and other demerits of joining the token sale and acquiring PCE, and if necessary, obtain needed advice in this regard. You should not acquire PCE until you have received necessary advices, if you cannot accept or understand the risks associated with this token sale of PCE (including the risks associated with non-development of PEACE COIN Platform) and other risks mentioned in below clauses and/or within this whitepaper.

RISKS

**Make sure that all purchasers of PCE carry with its significant risks not limited to, but such as below. Prior to joining the token sale, you should carefully consider all the contents described in this whitepaper, and consult lawyer, accountant, and/or tax professional if necessary, before determining the purchase of PCE.

- (a) PCE will be stored in third party Ethereum Wallet that supports ERC20 tokens, which can only be accessed with a password selected by the purchaser, and/or private (secret) key associated with the wallet account. Be sure to keep this information in a safe environment, safely storing the password and other information in multiple locations and well separated from their usual location, or else it may lead to the loss of PCE and other Crypto Tokens. If your password is cracked or learned by somebody else, it may also lead to the loss of PCE.
- (b) The purchasers of PCE must recognize that some of the services, features, and/or technologies related to PEACE COIN Platform is currently still under development and may undergo significant changes in the future. You must acknowledge that any of these expectations regarding any functionality of our platform may not be met for any number of reasons.
- (c) The purchasers must be aware that while PEACE COIN OÜ will make best efforts to list PCE on major Crypto exchange around the world, it will depend on their judgement whether this may happen, and the main goal and/or strategy on securing stable liquidity of PCE may not necessary equal to this event. In this case, this may result in less liquidity than expected in the content of this white paper.
- (d) The purchasers should be aware that the value of PCE may fluctuate markedly and be reduced in its value, or become worthless for any number of reasons as of any other Crypto Tokens. This may include (but not limited to) the volume of supply and demand, Crypto Token market situations, political or geographical reasons, changes

of regulations, natural disasters, and technical reasons.

- (e) PCE will be issued on the Ethereum blockchain. As such, any malfunction or unexpected functioning of the ETH protocol may impact the purchasers' ability to transfer or securely hold PCE, which may affect the value of PCE.

DISCLAIMER

To the maximum extent permitted by the applicable laws, regulations and rules, any entities of PEACE COIN OÜ and officers, employees and council members thereof shall not be liable for any indirect, special, incidental, consequential or other losses of any kind, in tort, contract or otherwise (including but not limited to loss of revenue, income or profits, and loss of data), arising out of or in connection with any acceptance of or reliance on this white paper or any part thereof by you.

Any entities of PEACE COIN OÜ and officers, employees and council members thereof shall not be liable for any loss of PCE after it is transferred to the purchasers by any reason including but not limited to their failure to maintain or backup an accurate record of their password or password cracking by somebody due to their poor maintenance of their password.

Regulatory authorities are carefully scrutinizing businesses and operations associated to Crypto Tokens in the world. In that respect, regulatory measures, investigations or actions may impact PEACE COIN OÜ's business and may limit or prevent it from developing its operations in the future. Any person undertaking to acquire PCE must be aware that PEACE COIN OÜ's business model or PEACE COIN Platform and its existing platforms may change or need to be modified because of new regulatory and compliance requirements from any applicable laws in any jurisdictions. In such case, purchasers and any person undertaking to acquire PCE need to acknowledge and

understand that neither PEACE COIN OÜ nor any of its affiliate shall be held liable for any direct or indirect loss or damages caused by such changes.

This white paper and any other materials or explanations made by PEACE COIN OÜ and its officers and employees shall not and can not be considered as an invitation to enter into an investment. They do not constitute or relate in any way nor should they be considered as an offering of securities in any jurisdiction. This white paper does not include nor contain any information or indication that might be considered as a recommendation or that might be used as a basis for any investment decision.

Neither PEACE COIN OÜ nor any of its officers and employees are to be or shall be considered as advisor in any legal, tax or financial matters.

Acquiring PCE shall not grant any right or influence over PEACE COIN OÜ's organization and governance to the purchasers.

NO REPRESENTATIONS AND WARRANTIES

PEACE COIN OÜ does not make or purport to make, and hereby disclaims, any representation, warranty or undertaking in any form whatsoever to any entity or person, including any representation, warranty or undertaking in relation to the truth, accuracy and completeness of any of the information set out in this white paper.

REPRESENTATION AND WARRANTIES BY THE PURCHASERS

By participation in the Token Sale of PCE, the purchasers represent and warrant to PEACE COIN OÜ as follows:

- (a) you are authorized and have full power to purchase PCE according to the laws that apply in your jurisdiction of domicile;
- (b) you are solely responsible for deciding whether the acquisition of PCE is appropriate for you;
- (c) you are not acting as an agent on behalf of any other person or entity who wish to purchase PCE or participate in its Token Sale;
- (d) you have carefully considered the risks, costs, and any other demerits of acquiring PCE and understood such the risks, costs, and any other demerits associated with PCE and its Token Sale;
- (e) you are not acting for the purpose of speculative investment;
- (f) you agree and acknowledge that PCE does not constitute securities in any form in your jurisdiction;
- (g) you agree and acknowledge that this white paper does not constitute a prospectus or offer document of any sort and is not intended to constitute an offer of securities in your jurisdiction or a solicitation for investment in securities;
- (h) you agree and acknowledge that no regulatory has examined or approved of the information set out in this white paper, no such action has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction and the publication, distribution or dissemination of this white paper to you does not imply that the applicable laws, regulatory requirements or rules have been complied with;
- (i) you agree and acknowledge that this white paper, the undertaking and/or the completion of the PCE Token Sale, or future trading of PCE on any Crypto Currency exchange, shall not be construed, interpreted or deemed by you as an indication of the merits of PEACE COIN OÜ or PCE;
- (j) the distribution or dissemination of this white paper, any part thereof or any copy thereof, or acceptance of the same by you, is not prohibited or restricted by the applicable laws, regulations or rules in your jurisdiction, and where any restrictions in relation to possession are applicable, you have observed and complied with all

- such restrictions at your own expense and without liability to PEACE COIN OÜ;
- (k) you agree and acknowledge that in the case where you wish to purchase any PCE, it is not to be construed, interpreted, classified or treated as;
- i. Any kind of currency other than Crypto Currency;
 - ii. Debentures, stocks or shares issued by PEACE COIN OÜ
 - iii. Rights, options or derivatives in respect of such debentures, stocks or shares;
 - iv. Rights under a contract for differences or under any other contract the purpose or pretended purpose of which is to secure a profit or avoid a loss;
 - v. Units in a collective investment scheme;
 - vi. Units in a business trust;
 - vii. Derivatives of units in a business trust, or any other security or class of securities.
- (l) you have a good understanding of the operation, functionality, usage, storage, transmission mechanisms and other material characteristics of Crypto Currencies, blockchain-based software systems, Crypto Currency wallets or other related token storage mechanisms, blockchain technology and smart contract technology;
- (m) you are fully aware and understand that in the case where you wish to purchase any PCE, there are risks associated with PEACE COIN OÜ and its business and operations;
- (n) you agree and acknowledge that PEACE COIN OÜ and its affiliates are not liable for any indirect, special, incidental, consequential or other losses of any kind, in tort, contract or otherwise (including but not limited to loss of revenue, income or profits, and loss of data), arising out of or in connection with any acceptance of or reliance on this white paper or any part thereof by you;
- (o) you will not use the Token Sale for any illegal activity, including but not limited to money laundering and the financing of terrorism; and
- (p) all of the above representations and warranties are true, complete, accurate and non-misleading from the time of your access to and/or acceptance of possession

this white paper or such part thereof (as the case may be).

UPDATES TO THE DETAIL OF THE TOKEN SALE

PEACE COIN OÜ reserves the right, at its sole discretion to change, modify, add, or remove portions of this white paper and the terms at any time during the sale by posting the amendment on the PEACE COIN website (<https://www.peace-coin.org/>) . Any purchaser will be deemed to have accepted such changes by purchasing PCE. If at any point you do not agree to any portion of the then-current version of this white paper and the terms, you should not purchase PCE.

MARKET AND INDUSTRY INFORMATION

This white paper includes market and industry information and forecasts that have been obtained from internal surveys, reports and studies, where appropriate, as well as market research, publicly available information and industry publications. Such surveys, reports, studies, market research, publicly available information and publications generally state that the information that they contain has been obtained from sources believed to be reliable, but there can be no assurance as to the accuracy or completeness of such included information. PEACE COIN OÜ has not conducted any independent review of the information extracted from third party sources, verified the accuracy or completeness of such information or ascertained the underlying economic assumptions relied upon therein. Consequently, any entities of PEACE COIN OÜ and officers and employees thereof do not make any representation or warranty as to the accuracy or completeness of such information and shall not be obtained to provide any updates on the same.

DEFINITIONS

PEACE COIN shall refer to, collectively or individually, PEACE COIN OÜ established under the laws of Estonia and its affiliates, including but not limited to the foundation planned to be established. PEACE COIN is a globally innovative company group in Blockchain industry with offices in Estonia and Japan, which links emotion to Token Economy providing trading and next-generation services powered by Blockchain technology.

PCE shall refer to the name of PEACE COIN TOKEN. PEACE COIN will open up its platform for all token issuers as an automated self-serving platform, for both initial Crypto Token issuance as well as a secondary exchange.

Base Currency shall mean the currency that you are buying or selling, e.g. Bitcoin, Ethereum, etc.

Crypto Currency shall mean the cryptocurrency or the distributed ledger-based token.

Token Sale shall refer to the distribution of newly issued PEACE COIN TOKEN (PCE) based on the description of this white paper.

Soft Cap shall refer to the upper limit of a Token sold during the Token Sale, which the Token Sale could be terminated in the middle of the holding period at the Issuer's discretion.

Hard Cap shall refer to the maximum quantity of the Token Sale.

Whitelist shall refer to a list of qualified applicants who has completed both KYC verification and registration of their ERC20 address.

Registered ERC20 address shall refer to the address of a Wallet that is compatible with Ethereum based ERC20 tokens, that a Purchaser pre-registered in the Whitelist.

KYC shall refer to the “Know Your Customer” checking process, including identification verification based on the AML/CTF Rules (Anti-Money Laundering/Counter-Terrorism Financing Rules) based on the FATF (Financial Action Task Force) guideline, which will be conducted upon the Token Sale of PCE and by each Service Operators.

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1. Abstract

PEACE COIN is a globally innovative project in Blockchain industry that links mental activities/emotions to Token Economy. The purpose of developing PEACE COIN is to step forward to the idea of sharing resources from the idea of monopolizing capital, overcoming concentration of wealth through capitalism and issues of modern financial systems that are based on the GDP growth model. Through circulation of PEACE COIN in a wide range of communities including families, companies and local communities, and in areas which have been hard to be evaluated by economic measurement such as shadow work, we aim to realize a “Rich Society” where people have relaxed and rewarding lives, with smiles on their faces.

2. Background

It was in 2009 that the world’s first Cryptocurrency, Bitcoin was invented. Since then, the Cryptocurrency has attracted attention from all over the world and topics related to it are not exhausted. It can be said that Bitcoin has achieved the concept of “Democratization of Currency” as a government-independent currency. Ethereum, which is said to be “Blockchain 2.0”, implemented smart contract in Cryptocurrency and formed the concept of “currency + contract”. Many other Cryptocurrencies with various concepts will be developed and they will create new economic zones. And the technologies such as blockchain, AI, IoT, etc. will be innovated and combined together, which may cause further breakthrough to Cryptocurrencies. Perhaps we are now in the middle of the revolution of monetary economy.

Here we would like to think about the initial meaning of the monetary economy. The functions of money are to measure, to exchange, and to preserve the value, and the monetary economy is a system that forms society by the functions of money. Historically, money has functioned as a bond of debt, and has changed its form from

stones, shellfish, precious metals to bank notes. As the monetary economy developed, the society changed into capitalism which is based on money. More than 150 years have passed since the capitalist society began. Civilization has been dramatically advanced during this period. The world became more convenient and wealthy, with growing population and increasing life expectancy. However, the present capitalism can be a system that polarize the world, between the rich and the poor. In modern society, only about 1% of the population holds about 50% wealth worldwide. It is obvious that advanced capitalism will make the rich people richer, and the poor people poorer. People in underclasses who need money to live their daily lives are pursuing responsibilities of politicians and capitalists, which strengthen the conflicts between them.

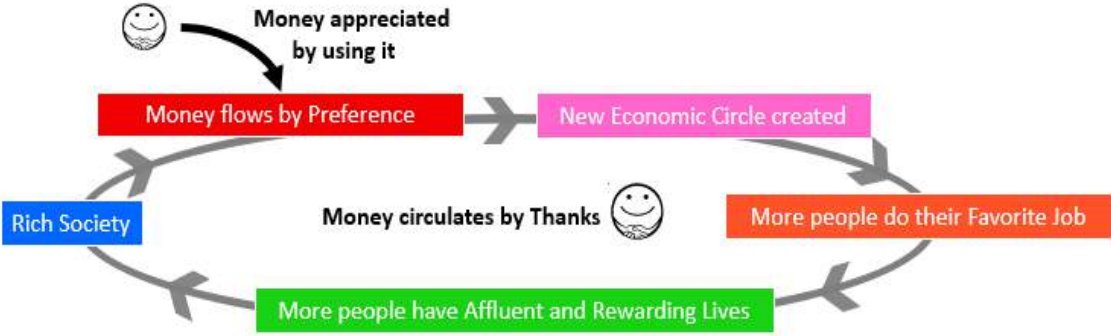
Capitalism is greatly influenced by the psychological anxiety, and it leads to overconcentration of money. This is not a matter of capitalists, but fundamentally a matter of the mechanism that gives first priority to financial resources. It seems that the system of capitalism with credit creation based on growing society is facing the limit. If we are going to advance the system of capitalism one step forward, it should be necessary to shift gradually from the idea of monopolizing to the idea of sharing.

Originally, currency was created for the society to function smoothly. It was a tool to facilitate human relationship smoothly, paid as an appreciation for someone doing something which they cannot do by themselves. So returning currency to original function again shall make people feel secure and motivated in good relationship with other people, supporting and living with each other.

If there is not enough money for living, people tend to be more self-centered and short-sighted, then they might focus on buying cheaper things. However, if you gain additional money by using it, most of you might make a different choice. If more goods and services are purchased by emotional reasons like thanks and preference rather than prices, more people will engage in creating and delivering those goods and services. It will make affluent lives and society, and children will be able to imagine the rich and bright future.

Our definition of “Rich Society” is a society in which people have affluent and meaningful life and peaceful smiles. PEACE COIN proposes a project to develop a

Cryptocurrency linked to EQ for the creation of a new economic system that is not based on economic growth, adopting advantages of modern financial system.



3. PCE Concept, “ARIGATO Creation”

Our expenditure is income of someone else, which creates someone’s work and livelihood.

Not only the person who receives goods and service would appreciate, but also someone who offers good or service and receives remuneration would also appreciate. Expenditure cycle like this could be “ARIGATO Creation”.

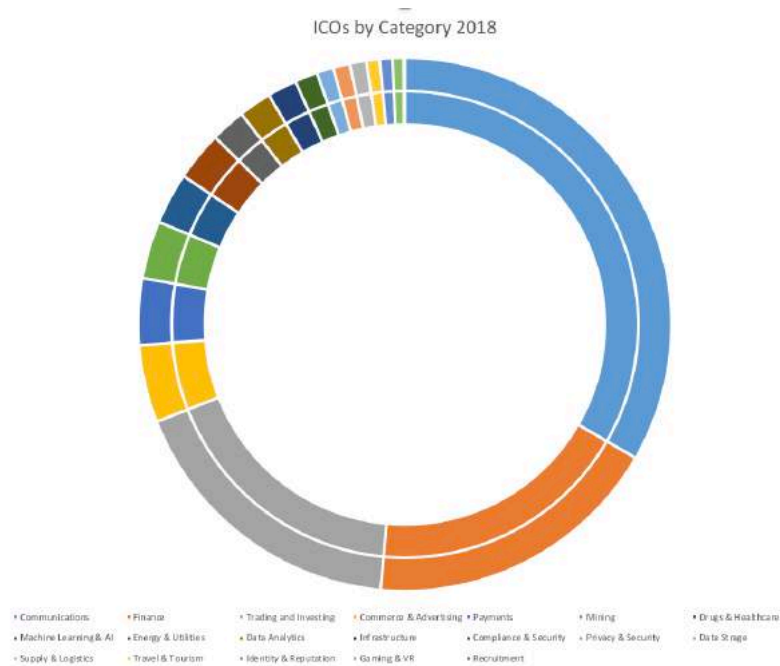
ARIGATO Creation will increase and decrease PCE by decentralized consensus algorithm, Proof of Thanks.

4. Target Market and Market Size

- Fiat Currency of the whole world : 83.6 trillion USD
- Cash Market : 31 trillion USD
- Stock Market : 66.8 trillion USD
- Gold Market : 8.2 trillion USD

Compared to those markets above, Crypto Currency market is 340 billion USD (March 2018) , and it is said that it will surpass 1 trillion USD within 2018, and that future market growth is still expected.

As shown in the list below, there are few Crypto Currencies focused on emotions like PEACE COIN, even though numerous ICOs have been launched until now. This could create a new economic zone in the Token economy.



Communications	33.35%	954,249,600
Finance	18.11%	518,210,676
Trading and Investing	17.59%	503,354,136
Commerce & Advertising	4.69%	134,098,400
Payments	4.04%	115,575,329

Mining	3.50%	100,000,000
Drugs & Healthcare	3.12%	89,169,964
Machine Learning & AI	2.99%	85,621,376
Energy & Utilities	2.10%	60,000,000
Data Analytics	1.99%	57,017,078
Infrastructure	1.78%	50,980,000
Compliance & Security	1.38%	39,544,101
Privacy & Security	1.02%	29,092,221
Data Storage	1.01%	29,000,000
Supply & Logistics	1.01%	28,932,536
Travel & Tourism	0.80%	22,934,006
Identity & Reputation	0.76%	21,776,392
Gaming & VR	0.67%	19,263,937
Recruitment	0.08%	2,215,535

Reference : PEACE COIN created the list based on the data from www.coinschedule.com/stats.html

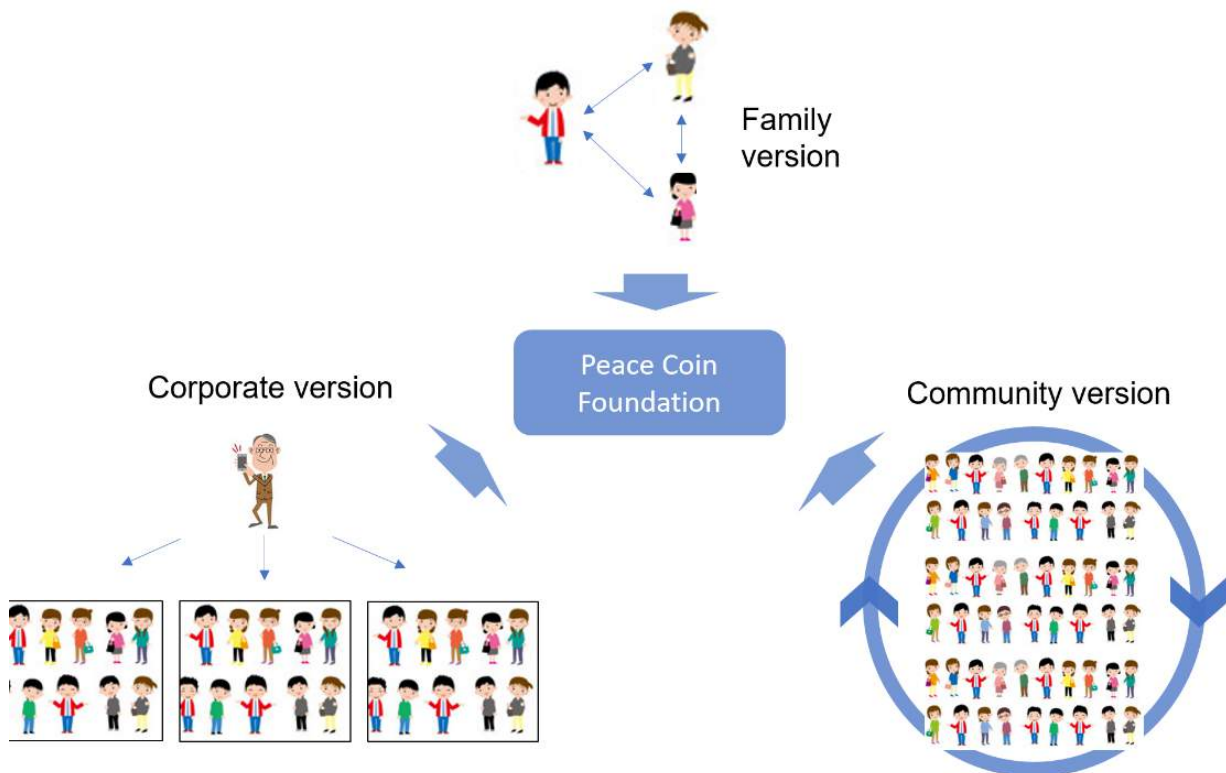
5. Use Case

PEACE COIN can be used as evaluation criteria or approval action for the behavior which was hard to be valued in terms of money. This can be introduced in a wide range of communities, from home to companies.

And furthermore, in a larger framework, it is expected to contribute to local creation once introduced to local communities.

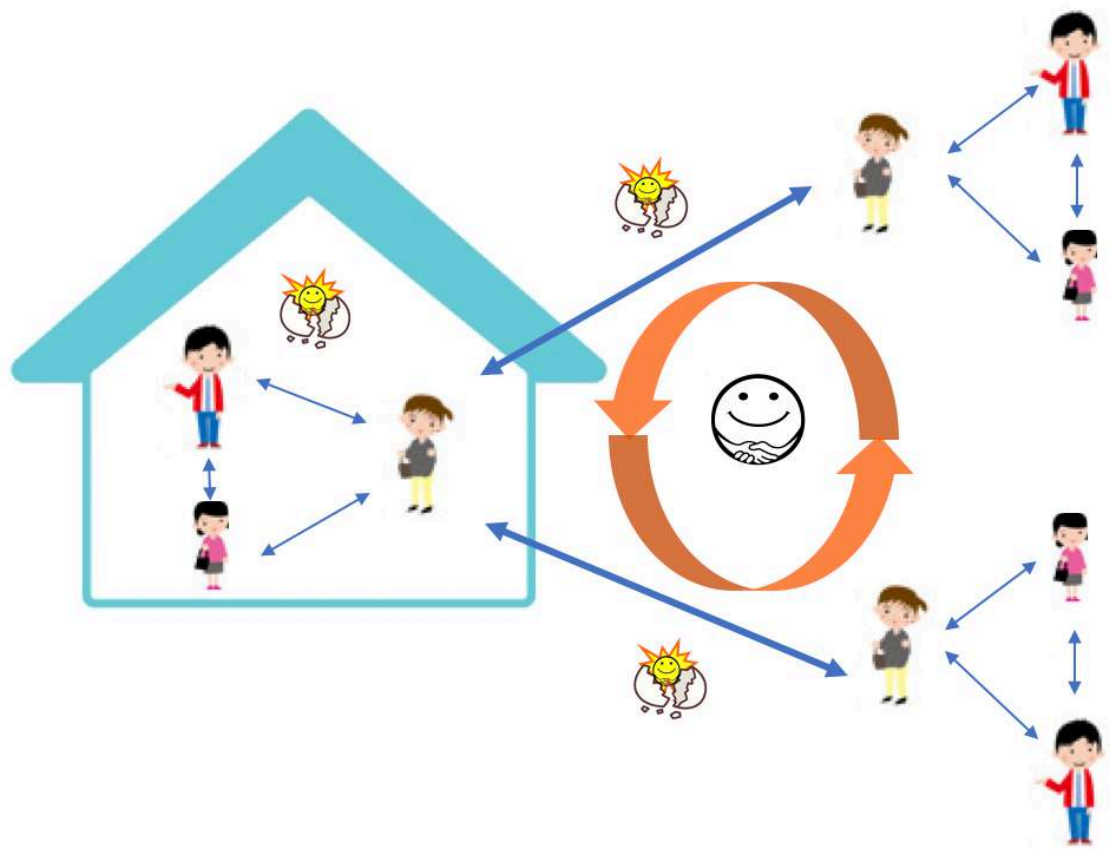
Generally, PEACE COIN token will be introduced, but in case of companies and local communities, sub-tokens can be issued if necessary, and apply different operational conditions from the main PEACE COIN.

The followings are use cases in various scales.



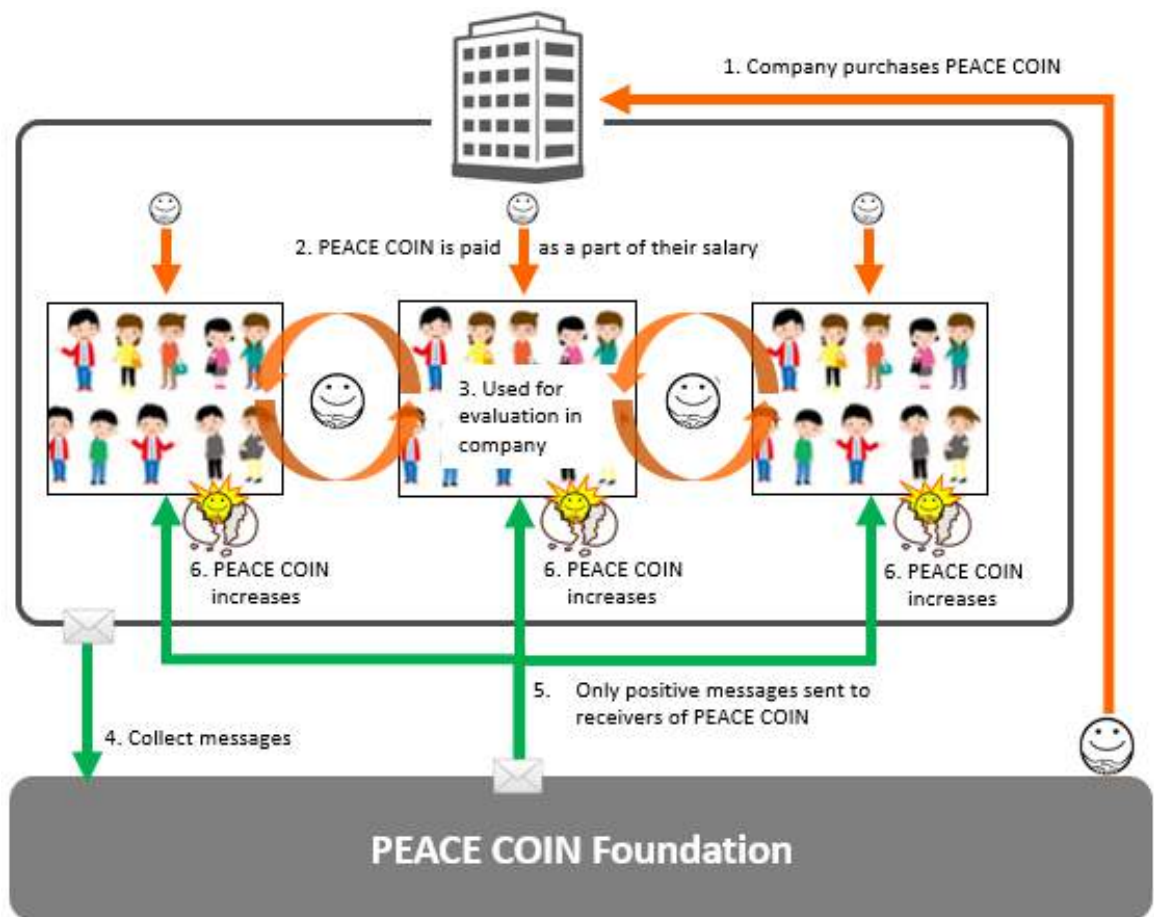
☺ Use Case 1 : Utilization as Remuneration for Housework

Housework is difficult to be evaluated even though it is economically valuable services. If you pay PEACE COIN for those housework such as cooking, laundry, cleaning, childcare, caregiving etc. with appreciation, it will create a small economy. Furthermore, housekeepers and neighbors can pay PEACE COIN to each other when others support or help them, which will create more and more economies.



☺ Use Case 2 : Utilization in Corporate Personnel System

A company pays PEACE COIN to their employees as a part of their salary and remuneration. And employees can pay PEACE COIN to each other as an evaluation. This can be free evaluation which is not bound by the evaluation standard of the company. Employees who are not easily evaluated in the existing system will be spotlighted, such as employees who are doing their best but not yet achieved results, employees who are keen to work hard, or back office employees who are unlikely to be evaluated by results.

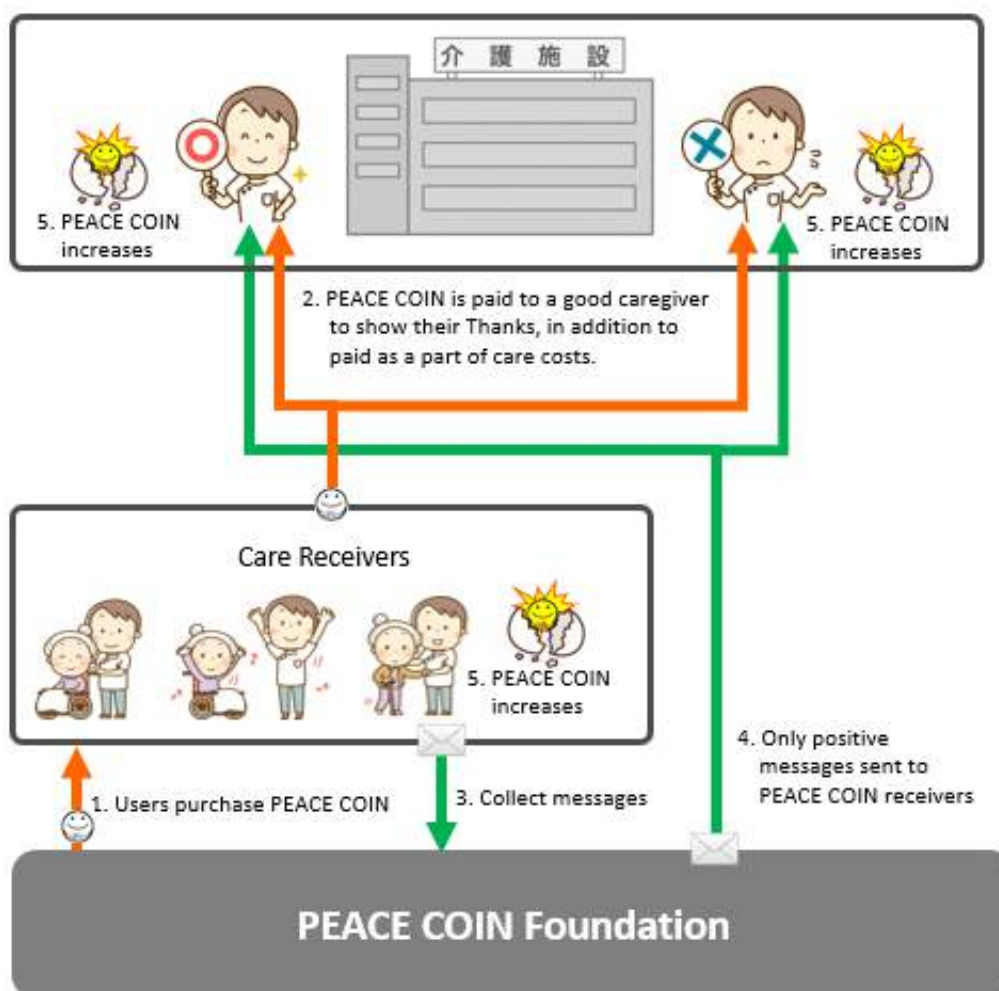


☺ **Use Case 3 : Utilization as Caregiver Evaluation System by Care Receiver**

Care receivers pay a part of care costs by PEACE COIN to caregivers. At the same time, they can attach some message like “you cared me well”, “I appreciate your quick response”, etc. and make evaluations as well. Caregivers who get higher marks receive more PEACE COIN.

Care receivers can pass PEACE COIN as tips to show their thanks easily, as you can gain additional PEACE COIN when you use it.

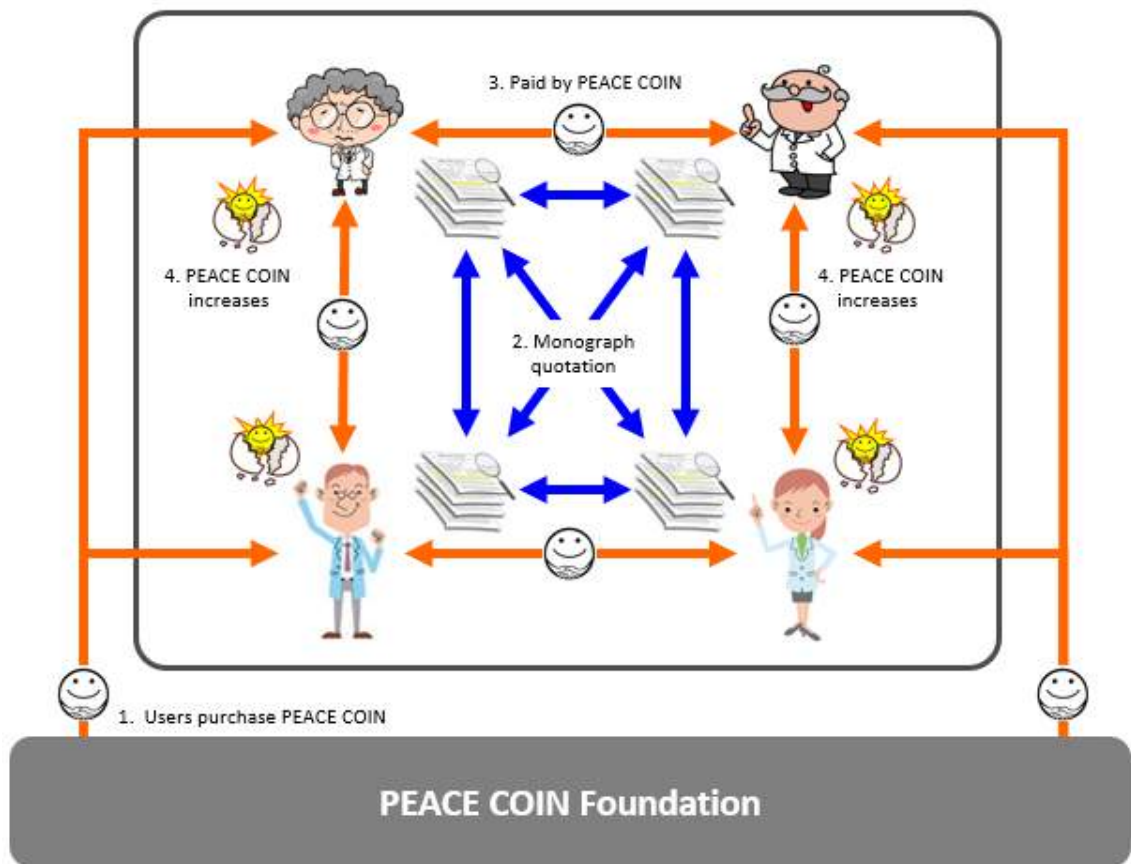
As a result, caregivers who receive more thanks get more remuneration by PEACE COIN, which leads to better care service given to care receivers.



☺ **Use Case 4 : Utilization on Monograph Platform**

Compensation for quoting a monograph is paid by PEACE COIN. The more the monograph is quoted, the more PEACE COIN they will receive. It proves how valuable the monograph is.

Researchers will be able to cover all the research cost by those quoting fees, once the number of quotations exceeding certain times.

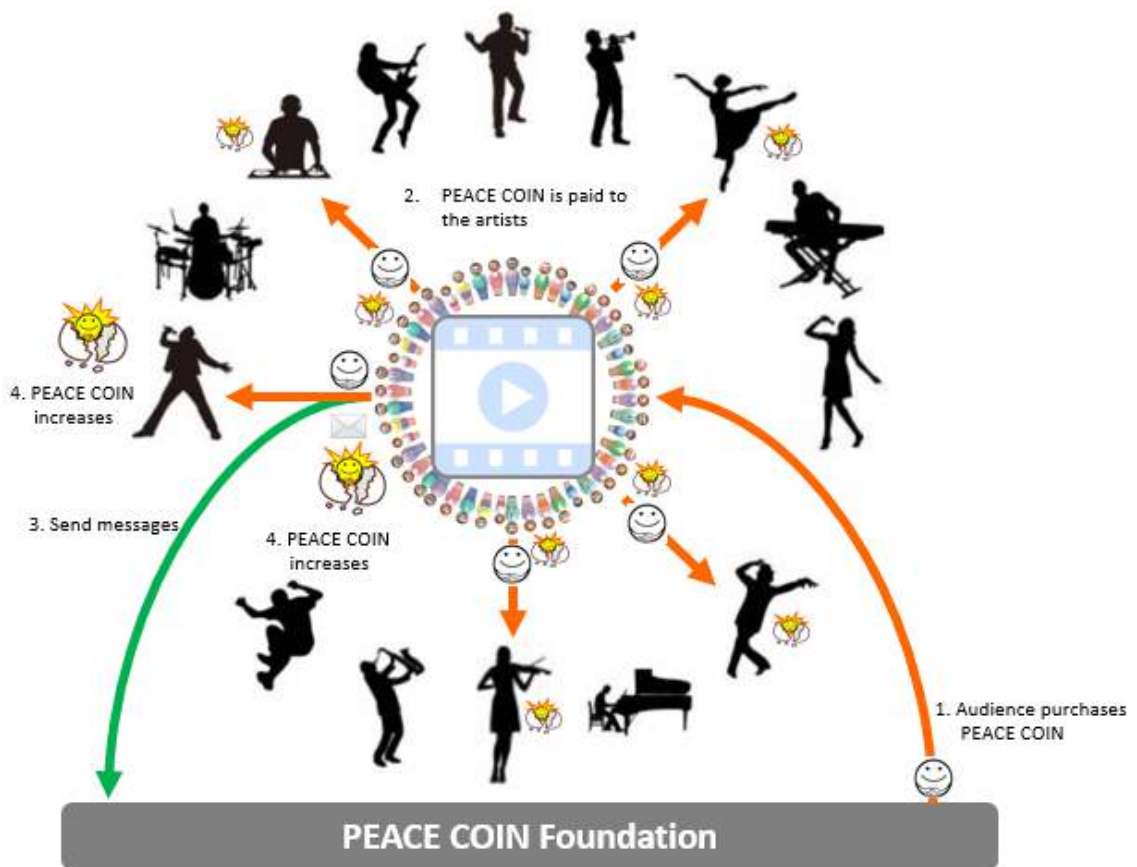


☺ **Use Case 5 : Utilization on Music/Movie Platform**

When listening to music and viewing movies on the online platform, you will pay the fee directly to the artist by PEACE COIN.

Artists will be able to receive consideration for their work. If a listener or viewer attaches some message upon payment, the listener or viewer will gain additional PEACE COIN.

If an artist has more than a certain number of fans, it could be more efficient monetization than existing video advertisements, which will revitalize the artist's production release.



☺ Use Case 6 : Utilization as Regional Currency

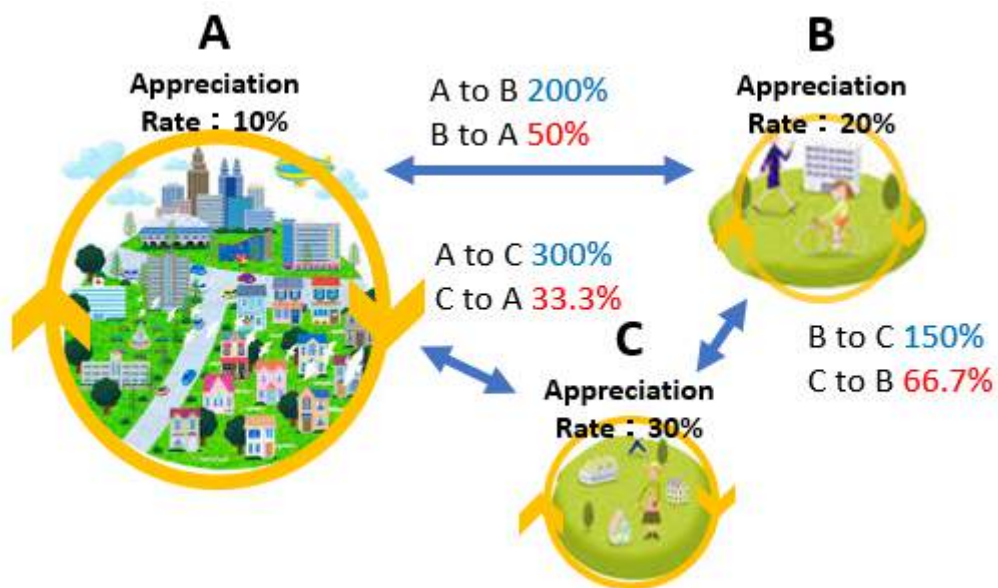
There could be following issues to introduce and operate regional currencies in Japan:

- ① Credit creation in capitalism is based on a growing model and it is difficult to create credit in areas where the population is decreasing.
- ② In areas where aging is extremely advanced, they don't have much chance to use regional currency and it is difficult for practical use.

In order to overcome the issues above, we will set the appreciation/depreciation rate suitable for each region so that each regional currency can be exchanged at a constant rate.

As regions with high population have more opportunities to use regional currencies, we can set the appreciation rate low, which will increase the value of the currency.

On the other hand, regions with low population have less opportunities to use regional currencies, we can set the appreciation rate high so that the users are able to increase the currency easily.

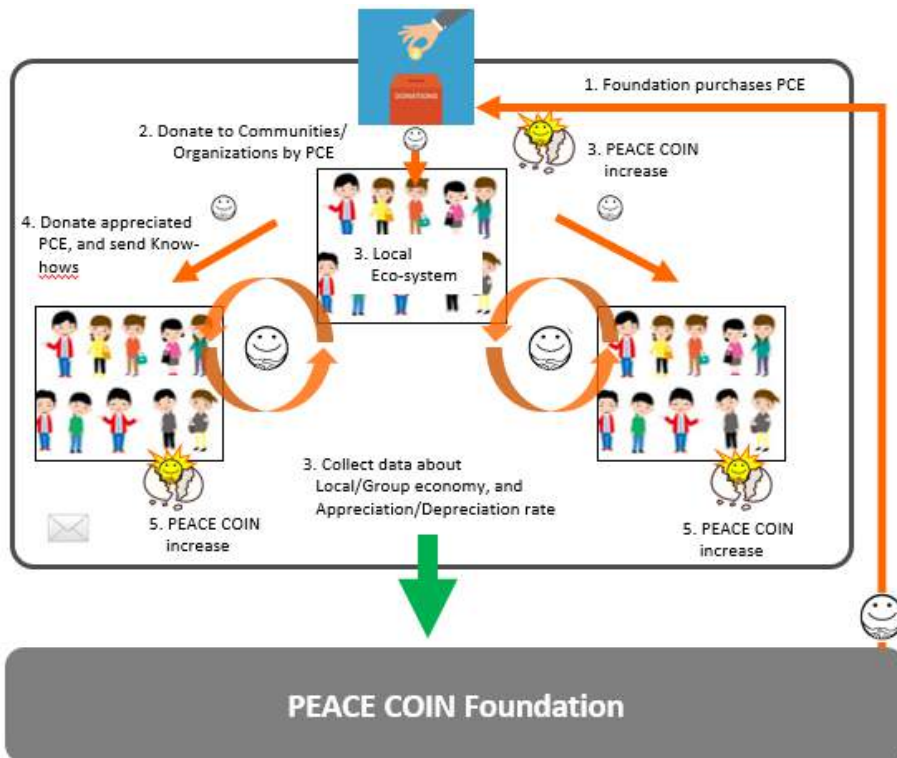


☺ Use Case 7 : Utilization as Independent Charitable Activity

You can make continuous donation using PEACE COIN appreciated by ARIGATO Creation. For example, in the case you donate 10,000 PCE to a certain local community, it can be divided according to purpose of use, such as 4,000PCE for free use, 3,000PCE to purchase smart phones, 3,000PCE for personnel expenses, and transmit how to create and manage self-sustaining local economy.

PEACE COIN Foundation will be able to accumulate appreciation/depreciation rate information and know-how that matches to attributes of each region or organization, by collecting activity information carried out in various parts of the world.

The local community or organization that receives donation aims to independent operation, and when they achieve certain level of independence, they will offer PCE and know-hows to other local communities or organizations as next step. Moreover, it is expected that their management know-hows and happiness level will also be improved by this step.



6. The Foundation

PEACE COIN is planning to establish PEACE COIN FOUNDATION in Switzerland in the third quarter of 2018.

PEACE COIN FOUNDATION will supervise the administration, fund management for development and operation, and asset management for tokens, donations and other asset of the communities that uses PEACE COIN.

Moreover, in case of continuous donation (refer to Use Case 7), we plan to facilitate establishing local foundations for sustainable donation system using PEACE COIN appreciation by Proof of Thanks. It will enable local communities and organizations in each area to develop the same system independently.

7. Functions of the Wallet

PEACE COIN Wallet is designed not only to deposit, store and withdraw PCE, but also to encourage user to use PCE.

We define payment as a tool to approve other people, by creating work for them. PCE is a Crypto Token usable to make payment by emotional reasons such as preference for a certain service or a person, rather than profit-and-loss arithmetic.

PCE is designed to accelerate velocity of circulation by appreciation and depreciation. Attaching messages upon remittance will increase the appreciation rate.

We aim to create opportunities for essential learning of economic activity, as well as to create new economic circles by connecting people with enjoyment and secure feelings. Payment with PCE makes people more aware of connection with society, and thankful feeling inside them.

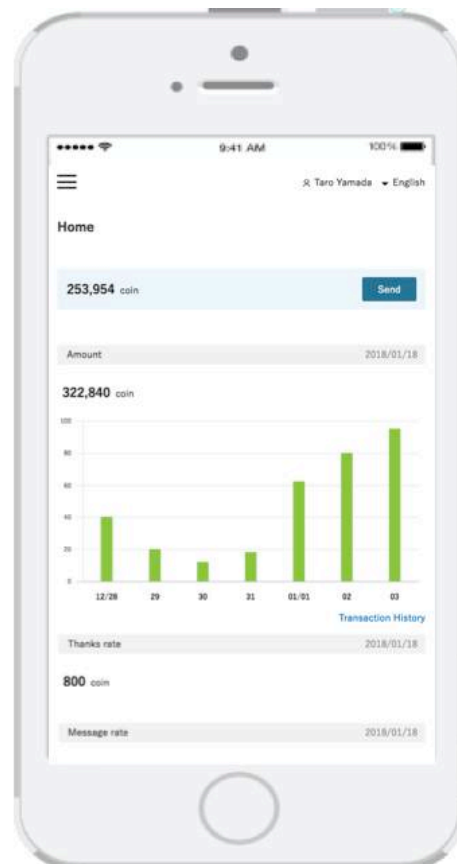
Main functions of the Wallet are followings:

PEACE COIN Wallet

- PCE balance
- Daily usage graph
- Thanks rate
(Appreciation rate by Proof of Thanks)
- Message rate
(Appreciation rate by payment with messages)
- Remittance
- Deposit
- History

Functions below will be added soon:

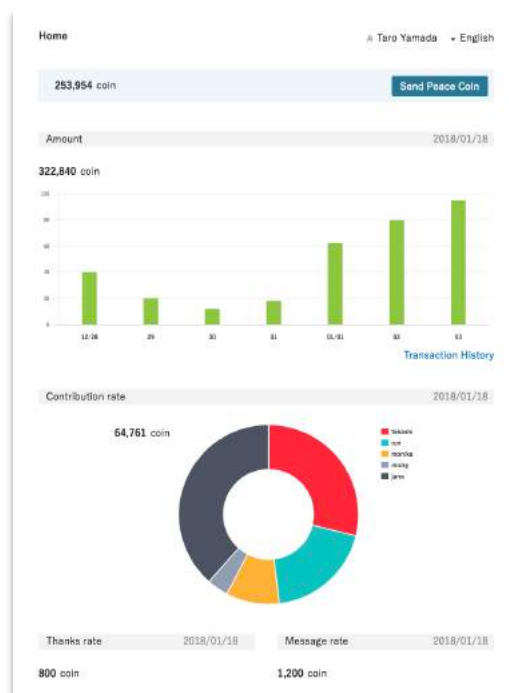
- GPS locator (enables remittance to unacquainted person, in a secure way)
- Quantification of Thanks by phonetic



recognition

- Personalized individual importance (appreciation/depreciation rate) by AI

PEACE COIN Wallet (Localized Ver.)



Localized Wallet is for the use of 2 to several dozens of community members. Additional functions to general PEACE COIN Wallet are followings:

- Contribution rate (use rate inside the group) graph
- Utilization of Message data

Localized Wallet is enabled to set Contribution rate and Message function in addition to appreciation/depreciation rate that matches to the community or organization. The following effects are expected.

- By visualizing Contribution rate, you can see who is sending more PCE. The remittance of PCE represents situations that a member is asking favor to someone, or showing thanks to someone, which makes you feel the remittance positively.
- Utilization of Message function will contribute to the prevailing of behavioral guidelines

and vision, and the improvement of management in the community or organization. It also enables multidimensional evaluation not bound by the rules established by superiors.

8. Blockchain Technology Used for PEACE COIN

Explanation may be unnecessary, but since Blockchain is “distributed ledger”, it is highly transparent and extremely robust technology as data falsification is significantly difficult by combining encryption and consensus algorithm. Since data is stored in all nodes, data will not be deleted until all nodes are ceased. And it actualizes zero downtime, as each node is distributed, logically the network will never stop as long as all nodes are not destroyed at the same time. This Blockchain technology is the fundamental element of PEACE COIN which aims to create new eco-system for “Rich” society. Approval work for building blocks is only available to users who owns PCE in their PEACE COIN Wallet. On the Blockchain, the data of how PCE coursed through (we define it as “Thanks”) is stored, which is the record of how emotion and economy combined with PEACE COIN.

PEACE COIN will select which Blockchain we adopt, depending on our financial arrangements. The algorithm of PEACE COIN Token is planned to be implemented on Ethereum Blockchain, but may be combined with a private Blockchain hard-forked from other Blockchain such as NEM Blockchain. And we plan to develop our original PEACE COIN Blockchain in the future.

PEACE COIN will not only support connections within each community, but also help them monetize their activities by connecting PEACE COIN Token and Localized Tokens for organizations and local communities, creating small eco-systems and jointing them to the whole world.

9. Consensus Algorithm, 「Proof of Thanks」

This chapter explains the details of Proof of Thanks, the distribution logic of Peace Coin, and Arigato Creation.

Arigato Creation appreciates Peace Coin. Proof of Thanks score works as an index to concretely decide the price of appreciation. In addition, the logic of depreciation will be explained below because depreciation is necessary to enable appreciation by ARIGATO Creation.

We would like to confirm that the formulas presented here are not final and possibly modified for more sophisticated expressions.

9.1 Proof of Thanks

We are going to arrange our consensus algorithm, Proof of Thanks by rearranging Proof of Importance, which is a component in NEM. Proof of Thanks is defined to have the characteristics below:

- Proof of Thanks refers not only to the transaction on the said day, but also the transaction history.
- The larger proportion of the remittance to the balance results in the higher Proof of Thanks.
- A mutual transaction between two nodes gives high Proof of Thanks for the both nodes.
- Routinely repeated small transactions gain more Proof of Thanks than sporadic large transactions.
- The larger or more stable account balance than a fixed level is required to score a proper Proof of Thanks. (This prevents dumping.)

We set Proof of Thanks score ψ as follows:

$$\omega_1 \text{normalize}_1(o) + (1 - \omega_1) \hat{\pi},$$

- $n \in \mathbb{N}$ is the number of all nodes,
- $o \in \mathbb{R}^n$ is the Integrity vector
- $\hat{\pi} \in \mathbb{R}^n$ is the Pay-it-Forward Volume score, and
- $\omega_1 \in \mathbb{R}^n$ is some constant between 0 and 1.

In the above formula, $\text{normalize}_1(x)$ is the function that normalizes the magnitude of the vector x into 1.

Pay-it-Forward Volume score $\hat{\pi}$ is a vector determined by Integrity matrix O and Perturbation matrix E . The following subsections explain Integrity matrix O and Perturbation matrix E .

9.1.2 Integrity Valuation

In this subsection, a transaction is represented with the 4-tuple of the date, the source node, the destination node, and the amount of remittance. Let T be the set of all the transactions before the calculation of Integrity valuation. For an element t , the expressions $d(t)$, $\text{src}(t)$, $\text{dest}(t)$, and $\text{amount}(t)$ denote the date, the source node, the destination node, and the amount of remittance of t respectively. The set of all transactions whose source node is A_i and whose destination node is A_j is stated by T_{ij} . The account balance, the total amount of remittance, and the total amount of receipt of the node A on the date d are expressed by $\text{balance}_A(d)$, $\text{remittance}_A(d)$, and $\text{receipt}_A(d)$ respectively.

We define the integrity of a transaction t in T_{ij} by

$$w_t = b_{1t} \times \left(\frac{a_t + 1}{m_t^{\text{rem}}} + c_t \right) \times \frac{\max(\text{amount}(t) - b_{2t}, 0)}{m_t^{\text{bal}}},$$

where m_t^{rem} and m_t^{bal} are the average over the past 90 days from $d(t)$ of the daily total remittance and the balance of the node $\text{src}(t)$ respectively. The terms used above are defined as follows:

$$\begin{aligned} a_t &= \sum_{\substack{t' \in T_{i_j} \\ d(t') < d(t)}} 0.9^{d(t)-d(t')} \text{amount}(t') \\ b_{1t} &= \frac{1}{90} \sum_{d(t)-90 \leq d < d(t)} \sigma \left(\frac{\text{balance}_{\text{src}(t)}(d-1) - \text{remittance}_{\text{src}(t)}(d)}{\text{balance}_{\text{src}(t)}(d-1) + \text{receipt}_{\text{src}(t)}(d)} \right) \\ b_{2t} &= 0.01 m_t^{\text{bal}} \\ c_t &= \begin{cases} 1 & \text{if a transaction from } A_j \text{ to } A_i \text{ in the past 30 days from } d(t) \text{ exists} \\ 0 & \text{otherwise} \end{cases} \end{aligned}$$

Here, σ denotes the function

$$\sigma(x) = \frac{1}{1 + \exp(10(x - 0.4))}.$$

We define Integrity vector o , using w_t by

$$o_i = \sum_{j=1}^n \sum_{t \in T_{i_j}} w_t,$$

where o_i is the i -th component of o . Finally, we define Integrity matrix O as follows:

$$\begin{aligned} w_{ij} &= \frac{1}{100} + \sum_{t \in T_{i_j}} w_t \\ o_{ij} &= \frac{w_{ij}}{\sum_{i=1}^n w_{ij}} \\ O &= ((o_{ij})_{1 \leq i, j \leq n})^T \end{aligned}$$

9.1.3 Perturbation

This subsection introduces Perturbation matrix that relates the nodes that do not have a direct transaction. In the calculation of PageRank, Perturbation vector is used to reflect the behavior of the viewers who move randomly to different pages without following the hyperlinks. In terms of mathematics, an irreducible and aperiodic probability matrix can be obtained by adding Perturbation matrix to Integrity matrix described in subsection 9.1.1, which in turn allow Markov chain to have unique stationary distribution.

For each node A_i , the values that satisfy $0 < p_i < 1$ and $\sum_{i=1}^n p_i = 1$ are fixed randomly and are called perturbation probabilities. Now, Perturbation matrix E is defined by

$$E = e^t v = \begin{pmatrix} 1 \\ 1 \\ \vdots \\ 1 \end{pmatrix} (p_1, p_2, \dots, p_n).$$

9.1.4 Pay-it-Forward Valuation

Based on the setting above, we consider the matrix

$$O\eta + E(1 - \eta).$$

In PEACE COIN, η is put to 0.8. Since each component of the matrix above is positive, we have that the matrix is an irreducible and aperiodic probability matrix. By the Perron-Frobenius theorem, there exists an eigenvector π

that corresponds to the eigenvalue 1 and all of which components are positive. Let the normalized vector of the eigenvector π be $\hat{\pi}$. Pay-it-Forward Valuation of the node A_i is the i -th component of the vector $\hat{\pi}$.

9.1.5 Clustering

In the later stage of designing Proof of Thanks, we are considering to add a term reflecting cluster analysis that would be a variation of Inter-level proximity matrix in NCDawareRank and NEM. We expect this term to improve resistance against attack and computational efficiency.

9.2 ARIGATO Creation

This section explains the logic on how to distribute PEACE COIN to the nodes based on the calculated Proof of Thanks scores. We set appreciation (ARIGATO Creation) and depreciation for the distribution scheme.

9.2.1 Appreciation (ARIGATO Creation)

PEACE COIN is distributed depending on the Proof of Thanks scores. Appreciation takes place on monthly basis. While basically more Proof of Thanks earns more PEACE COIN distribution, we set a maximum amount of appreciation and distribute no more than the limit.

Total Appreciation In the distributing procedure, we first set the total amount of appreciation which can be attained by all nodes. The amount of appreciation for each node is determined by splitting the total amount of appreciation. By fixing the total amount of appreciation, we expect to control the circulation of currency as well as improve resistance to attack, for the amount of appreciation of each node is affected by the other nodes' activity.

Among the total issued PCE, the total PCE owned by the other nodes than those managed by PEACE COIN FOUNDATION is called the circulating PCE. We denote the total issued PCE by I and the circulating PCE on the date d by C_d . The total amount of appreciation a_{all} corresponding the appreciation procedure on the date d_1 is defined as follows:

$$a_{\text{all}} = \sum_{d_0 \leq d < d_1} \left(1 - \frac{C_d}{I}\right) \times \frac{-\ln(r)}{d_r} \times I,$$

where d_0 is the date of the last appreciation procedure, and r and d_r are constants that determine the speed of appreciation.

Appreciation of Each Node The amount of appreciation of individual nodes are the values that the total amount of appreciation a_{all} distributed by the rate Proof of Thanks score ψ , that is, if we put

$$a_{\text{app}} = a_{\text{all}} \psi,$$

then the i -th component of a_{app} is the amount of appreciation of the node A_i .

If the amount of appreciation of the node A_i above is larger than 30% of the average balance of A_i over the past 90 days from the date d_1 , we restrict the actual amount of appreciation of the node A_i to be $0.3m^{\text{bal}}$. For this limiting step, all of the total amount of appreciation a_{all} of the date d_1 does not necessarily transfer to the circulating PCE.

9.2.2 Depreciation

If we operate the appreciation logic alone, the circulating PCE gradually approaches the total issued PCE and the total amount of appreciation converges to 0, which means the system of the appreciation is not sustainable. In order to keep the appreciation system working properly, we introduce depreciation to employ the function of decreasing the circulating PCE. The depreciation procedure is performed concurrently with the monthly appreciation procedure. For information to viewers, we are planning to skip the depreciation procedure from the time PEACE COIN start to operate to the launch of official version of PEACE COIN Wallet.

The depreciation amount is a fixed portion of the account balance. The amounts of depreciation that corresponds to the depreciation process on the date d_1 are expressed by

$$a_{\text{dep}} = \sum_{d_0 \leq d < d_1} \alpha \text{ balance}(d), \text{ where}$$
$$\alpha = \frac{1-r}{r} \times \frac{-\ln(r)}{d_r}.$$

Here, the i -th component of a_{dep} is the amount of depreciation of the node A_i . We used the notations d_0 for the date of the last depreciation process, and $\text{balance}(d)$ for the vector of which i -th component is $\text{balance}_{A_i}(d)$ in the formulation above.

9.3 Simulation

Those properties are desirable when functions of Proof of Thanks, ARIGATO Creation, and depreciation are under operation as below:

- The circulating PCE gets to be settled gradually, that is, the total appreciation and depreciation are going to balance as time passes.
- The account balance of the nodes that employ the transaction strategy such that the proportion of the remittance to the balance is large and repeated bidirectional transactions are preferred.

The rest of this section demonstrates the computational simulation results that show the situation when the total appreciation and depreciation balances using the simpler distribution logic than we saw in the above section.

We are planning to make more simulations using the logic stated in this chapter for the distribution such as Proof of Thanks, ARIGATO Creation, and depreciation to sophisticate the logic and then to illustrate the preferable property that our distribution logic possesses.

9.3.1 The Circulation of the Currency

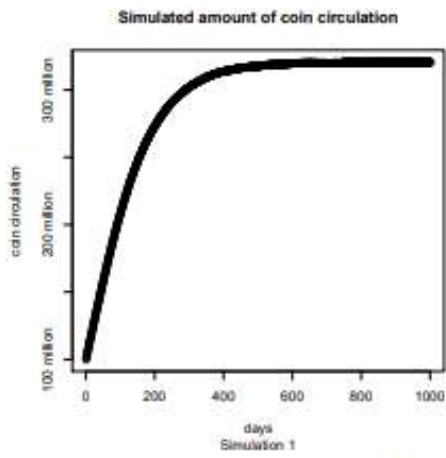
Figure 9.1 shows the circulation of the currency when the appreciation is made depending only on the amount of remittance and the account balance at the time of transaction, and when depreciation is made every day by the fixed rate to the account balance. The appreciation rate was set to 10% or 3% to the amount of remittance, and the depreciation rate was set to 1% to the account balance in the computational experiment.

Figure 9.1 plots the circulation with the model that the appreciation rate decreases from 10% as the balance increases. In this case, the total appreciation amount and the total depreciation amount balances as the time goes by and the circulation of the currency reaches an equilibrium state. On the other hand, Figures 9.1b and 9.1c are the cases with the models that keep the fixed appreciation rate to the remittance amount, which were set to 10% and 3% respectively, apart from the account balance. In these cases, we can see the situation that the total appreciation and depreciation amount do not balance and the circulation of the currency continuously increases or decreases.

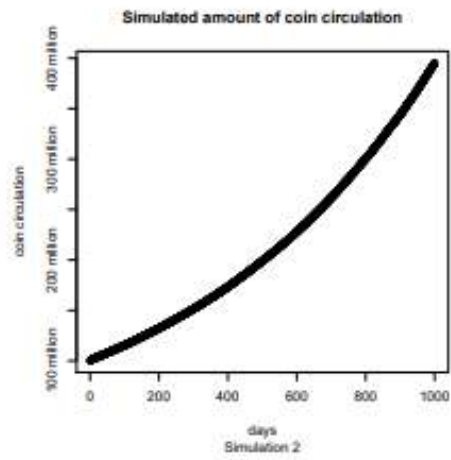
9.3.2 The Individual Account Balance

Figure 9.2 plots the individual account balances with the model that the circulation reaches an equilibrium state, which decreases the appreciation rate by increasing the account balance.

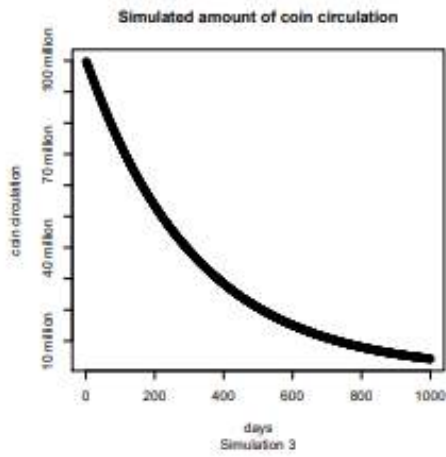
Figures 9.2a, 9.2b, and 9.2c depict the individual account balances of the nodes with the highest, median, and lowest remittance frequency respectively. We observe that the model we employed in this simulation has the undesirable property that the nodes with lower remittance frequencies gain more currency.



(a) the case the appreciation rate is decreased by account balance

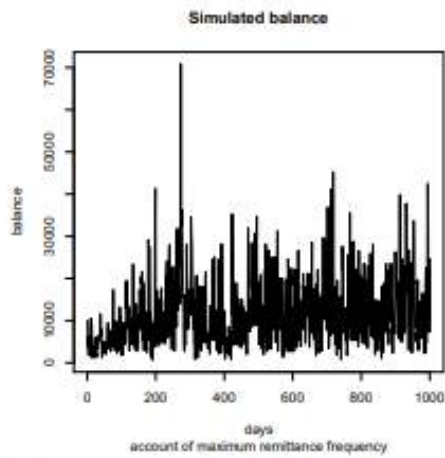


(b) the case the appreciation is 10%

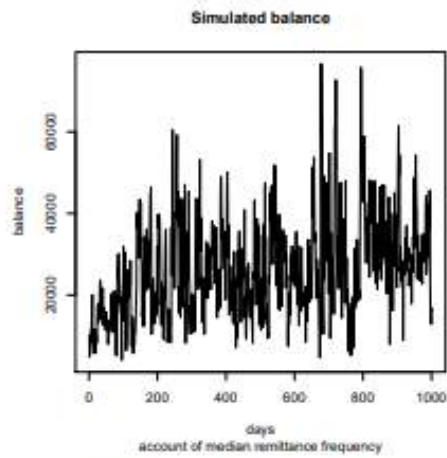


(c) the case the appreciation is 3%

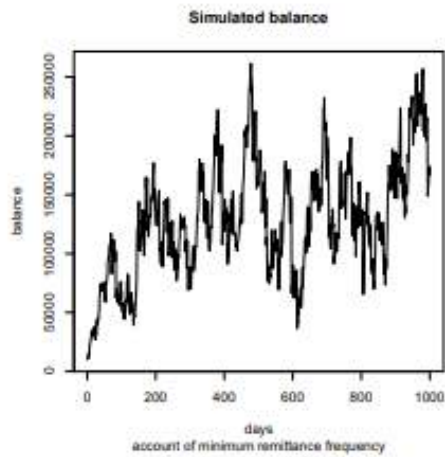
Figure 9.1: The Circulation of the Currency



(a) the balance of the node with the highest remittance frequency



(b) the balance of the node with the median remittance frequency



(c) the balance of the node with the lowest remittance frequency

Figure 9.2: The Individual Account Balance

10 Resistance to Manipulation

(Our resistance to manipulation refers to Sybil Attack and Loop Attack in “NEM Technical Reference”)

At this point, we plan to use Blockchain ERC-20 (Ethereum based), so here we explain about manipulation of Proof of Thanks and ARIGATO Creation, not the manipulation of Blockchain itself.

Sybil Attack

Sybil Attack is an act that one entity raises the value of Proof of Thanks improperly using multiple nodes and attempts to acquire appreciation by ARIGATO Creation.

The countermeasures against Sybil Attacks include followings:

- Apply a system that requires identity verification before exchanging with cash
- Improve tolerance to attack with Proof of Thanks logic
 - Impose penalties on transactions where the balance of accounts will fluctuate greatly
 - Remittance of too small amount will gain 0 (zero) Proof of Thanks
 - Consider the activities of other nodes by Pay-it-Forward Volume score
- Set a maximum limit on the amount of ARIGATO Creation and reduce the motivation to attack

Loop Attack

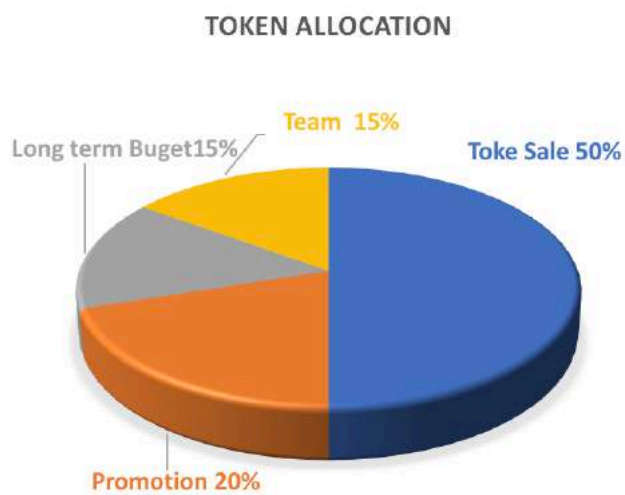
In the Loop Attack, which is a variation of Sybil Attack, an entity repeats remittance between multiple nodes, attempting to raise the value of Proof of Thanks improperly.

For Loop Attacks, we are considering countermeasures to raise the cost of Loop Attack by the detection algorithm in addition to the measures against the Sybil Attack mentioned above.

Please note that the logics in this section is not definite and should be revised accordingly to the growth of the services. As for revision, it is supposed to be performed by users' vote.

11 Finance

Our Token Allocation and Use of Proceeds are as followings:



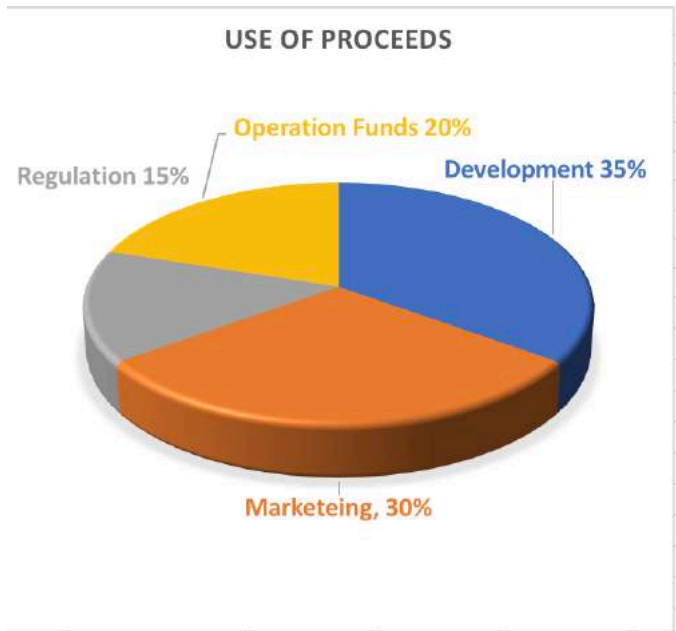
Token will be allocated for:

Token Sale : 50%

Promotion : 20%

Long Term Budget : 15%

Initial Member : 15%



Our proceeds will be used for:
Development : 35%
Marketing : 30%
Legal and Regulation : 15%
Operation : 20%

12 Roadmap

In order to diffuse the use of PEACE COIN in wider society, we believe that it is necessary for more users to actually use this unique token and to experience enjoyment and convenience.

Phase 1

We believe that promotion activities are of great importance so that more users can experience PEACE COIN from the earlier stage. We are planning to hold a lot of events such as meet-ups and hackathons, and to incorporate opinions of people who are interested in this Crypto Token.

Since this Crypto Token has a completely different concept from fiat currencies, that the amount of this token increases as you use it under certain conditions, token holders will transmit the positive information, which will make great contributions to referral marketing.

Until the launch of PEACE COIN Wallet beta version, PEACE COIN is not going to depreciate. (Localized version for each local community or company will appreciate/depreciate earlier.)

Phase 2

We believe it important that many users experience the diverse use cases of PEACE COIN in this phase. For example, it can be particularly useful in the fields of arts and academia, the areas where evaluation criteria are difficult such as housework, and the areas with performance-based compensation type such as education, consulting, counseling businesses. In addition, it can work effectively to reduce the cost of personnel evaluation systems.

In this phase, it is also important to involve not only users who are interested in cryptocurrencies, but also people who do not participate directly in current economic activities such as housekeepers and volunteers.

We believe that use application of PEACE COIN should not be limited by us.

After the launch of PEACE COIN Wallet for actual use, we will apply appreciation/depreciation rate of the token.

Phase 3

The concept of PEACE COIN is widespread, and new economic circles effected by emotions such as preference and interest will be established, which is different from the traditional economy seeking rationality and efficiency.

In these economic circles, people will be able to provide services and products that they purely like. In other words, we aim for a world where people are released from economic concerns by helping each other.

PEACE COIN will work as a scale to prove that working for what they “like” is not a self-centered idea.

The total amount of PCE in circulation is linked to PEACE COIN economic circles including appreciation by Proof of Thanks algorithm and depreciation by the personalized rate using AI. The initial issuance is limited to 10,000,000,000PCE, but in case the limit needs to be increased, we would decide whether to increase or not by voting or other means.

In principle, money is not to be stored more than necessary, it should be used to maintain a social life. Ultimately, rather than putting value on saving money, money should circulate as means of showing thanks to others.

- 2017 Q1 Initiated the Concept
- 2017 Q4 Project Started
- 2018 Q1 Development of PEACE COIN Wallet alpha version
- 2018 Q2 Incorporation of Estonian company
- 2018 Q2 ICO (Initial Coin Offering)
- 2018 Q2 Development of PEACE COIN Wallet beta version
- 2018 Q2 Start Operation in Multiple Countries, Arrangement of Ambassadors
- 2018 Q2 Listed in Cryptocurrency Exchange
- 2018 Q3 Establishment of PEACE COIN Foundation
- 2018 Q4 ICO in Japan and USA
- 2018 Q4 Listed in Major Cryptocurrency Exchange
- 2019 Q1 Release PEACE COIN Wallet for actual use
- 2019 Q2~Q3 Start Localization Service for Corporation,
Publishing Information about New Personnel Evaluation System
- 2019 Trial Period of Community Currency (Localized PEACE COIN)
- 2019 Start Exchange System of PCE and Localized PCE

- 2020 Monetizing Detailed Data of Local Revitalization
(Segmented based on Population/Regional Resource etc.)
- 2020 Implementation of the Quantification of Thanks (Importance)
by Phonetic Recognition to PEACE COIN Wallet
- 2020 Implementation of Importance by AI
(Personalized Appreciation/Depreciation)

13 Token Sale

Name of Token : PEACE COIN

Token Symbol : PCE

Blockchain : ERC-20 (Ethereum based)

Token Sale

Token Sale Opening : June , 2018 (UTC+2) AM10:00

Token Sale Closing : June , 2018 (UTC+2) AM9:59

Price per PCE : 1PCE = USD0.01 equivalent ETH or BTC

Minimum Subscription : 10,000PCE~ (more than 100 USD equivalent)

Soft Cap on Token Sale : 2,000,000,000PCE (TBD)

Hard Cap on Token Sale : 5,000,000,000PCE

1st week \$100=

2nd week \$100=

3rd week \$100=

4th week \$100=10,000PCE

※For the updated ICO details, please check <https://www.peace-coin.org/>

KYC Policy

During the Token Sale, PEACE COIN OÜ will conduct Know Your Customer (KYC) verification procedure for all of the purchasers of the PEACE COIN Tokens.

This will entail the purchasers to submit their passport or ID with photo (issued by government such as driving license), together with a selfie photo of the purchasers holding the ID. Purchasers must also submit a proof of address published within the last three (3) months from the time of submitting.

In case a corporation purchases PEACE COIN Tokens, passport or ID with photo of the representative, a selfie photo of the representative holding the ID, and a proof of address are required. If necessary, submission of additional documents may be required.

1. Registration and Activation of the Dashboard

a. Access at <https://www.peace-coin.org/> and click “Register Now”. This button will take you to PEACE COIN Dashboard registration page.

b. Screen instructions will guide you through your account registration.

You will need to enter some basic information including your name, email address and residential address.

c. Upon completing the above, an email containing an account confirmation and activation link will be sent to your registered email address from registration@peace-coin.org. Please click the link to activate your PEACE COIN Dashboard.

2. Purchasing PEACE COIN

a. Please note that any purchase order cannot be withdrawn or cancelled once it is made.

b. PEACE COIN OÜ will not provide any fundraising address through any social media, message services, electronic bulletin boards, etc. as many ICO hacks have been occurred through these media.

c. PCE Token Sale will commence at 10:00am Estonia time (UTC+2 hours) on June 2018, and end at 09:59am Estonia time (UTC+2 hours) on June 2018 (the Sales Period).

d. If the total amount of the purchase requests exceeds the maximum offer within the Sales Period, PEACE COIN OÜ will pro-rate PCE according to the ratio of the purchaser's request.

e. If PEACE COIN OÜ cannot meet its Minimum Token Requirement within the Sales Period, PEACE COIN OÜ will return the deposit after subtracting handling fees and/or network fees.

f. Please note that if you are a resident of People's Republic of China, Republic of Korea, The United States and Japan, you will not be able to purchase PCE through the token sale.

g. After the Token Sale, PEACE COIN OÜ will deliver the pre-PCE to the purchasers.

Restrictions

Founder Tokens:

The Founders are able to sell to the market up to 20% of their holding PCE token after Token Sale closing. And 30% of holdings, they will be able to sell their Founder tokens at a rate of 10% in 6 months starting with the beginning of the Token Sale. For the rest of 50% of holdings, they are restricted from selling any of their Founder tokens for 2 years.

14 Token-Issuing Company

Company Name : PEACE COIN OÜ

Address : Sakala 7-2,EE10141 Talinn 10123,ESTONIA (TBD)

Registration No. : 12345678 (TBD)

VAT No. : EE12345678 (TBD)

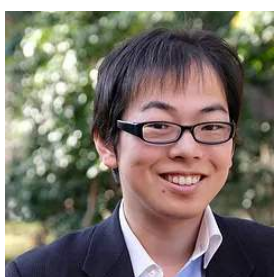
License No. : FIU000123 (TBD)

15 PEACE COIN Founding Board Members



Ryoichi Abe
Founder / CEO

In 2007, Ryoichi joined an independent investment advisory company. He engaged in financial consultancy including asset management, asset preservation, and M&A from the viewpoint of international financial situation and corporate technical and fundamentals. Making numerous achievements, he promoted to the project manager in the shortest time in history, and became the youngest executive officer. He has been in charge of market development, financial arrangements, and management strategy in various business fields such as finance, real estate, and education. Up to now he established several new businesses both in Japan and overseas. To bring diversity into the existing capitalist system, and to create a humane society where people recognize each other, he founded PEACE COIN.



Masato Takeda
Co-Founder / CTO

Masato obtained master's degree from Chuo University, Graduate School of Economics in advanced program (only in one year). While working in best-known companies such as Softbank Corporation, Recruit Co., Ltd., and GREE Inc., he engaged in developing coherent systems from service design to operation design with numerous projects. In the education and social game business, he was responsible for business strategy supervision

by utilizing the big data obtained through infrastructure development and statistical analysis. Empathized with the Vision of PEACE COIN, he joined founding member. Now as CTO, he is in charge of investigation for technology base, design and algorithms development.



TODOROKI
Co-Founder/ System Architect

Graduated from Shizuoka University. TODOROKI likes gaming, and got interested in program language, which made him become a software engineer. He engaged in developing MAKUAKE, the crowd-funding service, at Cyber Agent Crowd Funding Inc. (MAKUAKE Inc.). After becoming a freelance engineer, he was involved in Blockchain development.

Now he joined PEACE COIN founding member, and working with Masato for developing algorithms and implementing PEACE COIN on Blockchain.



Sayaka Takeuchi
Public Relations

After graduating from university, Sayaka experienced marketing of new businesses in Japan and overseas in IT industry. From her working experience in China, she has knowledge of Chinese market. Now she turns freelance and engages in public relations and marketing for companies.



Masami Awano
Investor Relations

After working for a major general trading company, Masami changed her career to consulting industry. In addition to offering various IR consulting services to listed companies mainly in IT industry, she engaged in launching new overseas businesses. Based on these experiences, she was in charge of IR and internal audit at freshly listed companies. After that, she moved overseas and engaged in the development and planning of investment projects, mainly responsible for due diligence. Now she conducts project management and financial structure in the whole Asian region including Japan, and provides IR support both in Japan and overseas.

16 Conclusion

Thank you for reading this long white paper.

The world view which PEACE COIN aims to realize is “Rich Society”, and we believe that we need to increase in diversity and to create a society with culture of inclusion for the purpose.

When we understood the excellent consensus algorithm of Proof of Work, including Blockchain technology which created Bitcoin, and when we touched upon the concept of Crypto Currencies such as Ethereum that implemented Smart Contract, we felt a true revolution. Those technologies enabled us to conceive the idea of PEACE COIN. Our development of PEACE COIN is also inspired from NEM’s Proof of Importance. Also the information of ALIS enlightened us a lot to prepare our Token Sale. We express our greatest respect for engineers who are contributing the development of Crypto Currencies, and community of people who have been supporting them.

We believe the algorithm of PEACE COIN, Proof of Thanks will actualize the concept that people had better help each other in terms of the mechanism, like the mechanism of Bitcoin shown in Proof of Work.

If you drop your valuable like your wallet in somewhere, you may have little possibility to retrieve it. But you should be glad if your wallet comes out. This has nothing to do with cultures and races, so the actions to be taken by the person who picked up your wallet should be clear.

If the new economic system promotes the profit of yourself and also profit of other people, and if people become acclimated to the new economic system, the world should be a little more peaceable. We believe that the more people care for others’ feelings, the more peaceful this world will be.

In the last place, we would like to express our sincere gratitude to many people who cooperated with PEACE COIN. And for those who approve our concept and vision mentioned in this white paper, please join our Token Sale and create a new economic system together with us. Let us aim for a “Rich Society”, where money

circulates by Thanks, with PEACE COIN. We, the PEACE COIN team conclude this white paper, looking forward to creating a new economic system with you all.

Website : <https://www.peace-coin.org/>

Facebook : <https://www.facebook.com/PEACECOIN.PCE/>

Twitter : https://twitter.com/PEACE_COIN_org

Appendix

In this chapter, some related topics are described based on NEM Technical Reference [1]. The contents of this reference include citations from NEM Technical Reference and explanations on it.

A.1 A reputation system for nodes

In order to resist malicious activities by the nodes that broadcast invalid information on transactions, it is effective to implement a system that evaluates the trust values of the nodes by sharing the ratio of receiving erroneous information from each node. However, by simply sharing the ratio of deriving false information from a node, it is possible for hostile nodes to harm intentionally the reputation for the node in spite of its honesty. This problem can be solved by evaluate the credibility of the feedback of other nodes as well as the nodes themselves. For a more detailed discussion, refer to the original paper of EigenTrust++ [3]. Introducing these evaluation system of reputation of the nodes enables a node to select appropriate nodes to interact to withdraw the information by reviewing the calculated the trust values. It is verified by computational simulations that the reputation system reduces the number of the interactions of receiving deceptive information considerably.

A.2 Resistance to Attack

The algorithm of Proof of Thanks, which describes the distribution logic in PEACE COIN, has been developed by referring to NEM. Here, we explain the methods employed by NEM to resist attacks in order to prepare for the coming arguments for resistance to attack in PEACE COIN.

A.2.1 Sybil Attack

In peer-to-peer systems, faulty or malicious entities can often gain control over multiple nodes by presenting themselves as multiple identities in order to use the principle of a system against it [2]. This is called a Sybil attack. Particularly in PEACE COIN, as

scoring higher Proof of Thanks results in more financial rewards, attacks are presumed to be highly promoted to attempt Sybil attacks.

In NEM, the system is carefully designed to prevent Sybil attacks, and the resistance to attack is verified by computational simulations. Below we see the results of the simulations to demonstrate the resistance of NEM by citing NEM Technical Reference [1].

Figure A.1 shows the results of the simulation of attacks from malicious entities. The honest actor keeps their balance in one account, whereas the Sybil actor controls multiple accounts and:

- (a) sends currency around in a loop between controlled accounts,
- (b) vests the currency in controlled accounts and then sends them all to a single master account, and
- (c) sends currency from each controlled account to a random account.

It can be seen that Proof of Importance score in NEM cannot be boosted radically by increasing the numbers of the nodes that the attackers exploit. Therefore, gaming on scores in NEM will not earn a significant advantage over nodes with the same balance which do nothing.

PEACE COIN is also a system using Blockchain technology, and is naturally vulnerable to Sybil attacks. The resistance to Sybil attacks needs to be considered as the arguments above. We are planning to verify the resistance of distribution logic in PEACE COIN through computational simulations.

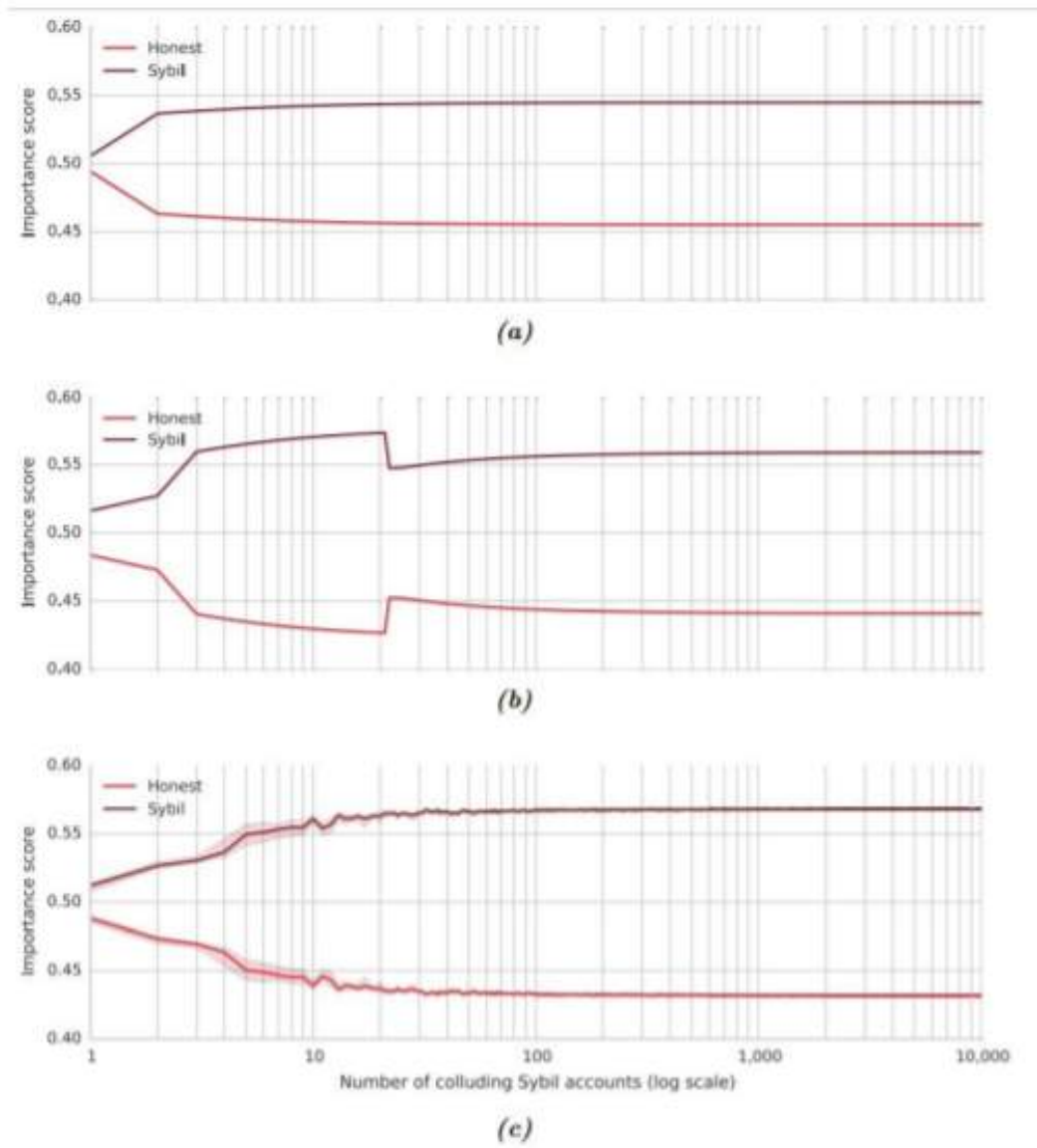


Figure A.1: Proof of Importance scores obtained by Sybil attacks [1]

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