Tink

Build your Credence on the Blockchain

Feb. 28, 2018

Draft for open community appraisal and subject to change

www.tink.world

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Executive Summary

Current social profile problems:
① Not verified.
② Incomplete
③ Service providers benefit from user data

Existing social network user profiles are not verified, so it is difficult to establish trust-based relationships based on profile information alone. Malicious fake or uninformed profile information can degrade networking quality. In addition, existing social network profiles are written based on the history of users such as basic personal information, school, and workplace, but they are not enough to make a trustable network by profile alone because they do not contain qualitative information such as individual propensity and personality. Furthermore, the rights of the user are often infringed by the service provider having substantial authority over the user's personal information.

Tink profile:
① Objective social verification
② Qualitative profile
③ Data owner benefit from user data

With Tink, a profile is created through a number of third parties rather than the user himself. An objective profile generated by an anonymous vote of an acquaintance, such as a friend or a co-worker, can be determined to have been socially verified. Tink user profile contains not only socially verified basic information such as gender, education and work, but also qualitative data such as personality, propensity and merit through compliments and positive feedback from acquaintances of the user. Qualitative data to be collected will be gathered around only the positive tendencies such as various praise and merits of users and will be clearly distinguished from users' evaluation or reputation. The user has data privacy and decides whether to disclose or sell any information of the created profile and fully exercise the rights to the profile.

Benefits of socially verified profile:
① Extend social networking experience
② Better quality of shared information through social curation
③ Monetization of personal information

If the profile is verified, a trust-based relationship can be established. It is possible to easily find and start networking with people who satisfy the certain conditions of personality, attitude, professionalism, interest, activity area as well as confirm the information of a specific person. In addition, the user can expand the range of human networking because the information on the profile can be easily found on the network even if the user does not produce the content expressing himself.

Tink users can filter web search results with curated information and receive marketing information that is most appropriate for them. The users can also communicate directly with someone who has a similar preference, a person with the same interests, or a person who is suitable for working together. In other words, all the processes of sharing, distributing and collecting information and contents are centered on each user, and all experiences in getting information in everyday life or connecting with others will be improved. In addition, the user will be able to use the profile alone to use other services without proof of identity or subscription, and to generate profits by directly trading profile information.

Token Economy

The Tink system has data providers that provide profile information and data consumers that purchase profile information. The data provider can earn internal token rewards and external token rewards to meet diverse needs within the ecosystem, and the tokens are circulated based on trading data in exchange for the tokens. Data providers can use their own tokens to identify other data providers' profiles or use external services associated with Tink. The data consumer may purchase or obtain a token outside the Tink system to exchange the token with the data provider's information.

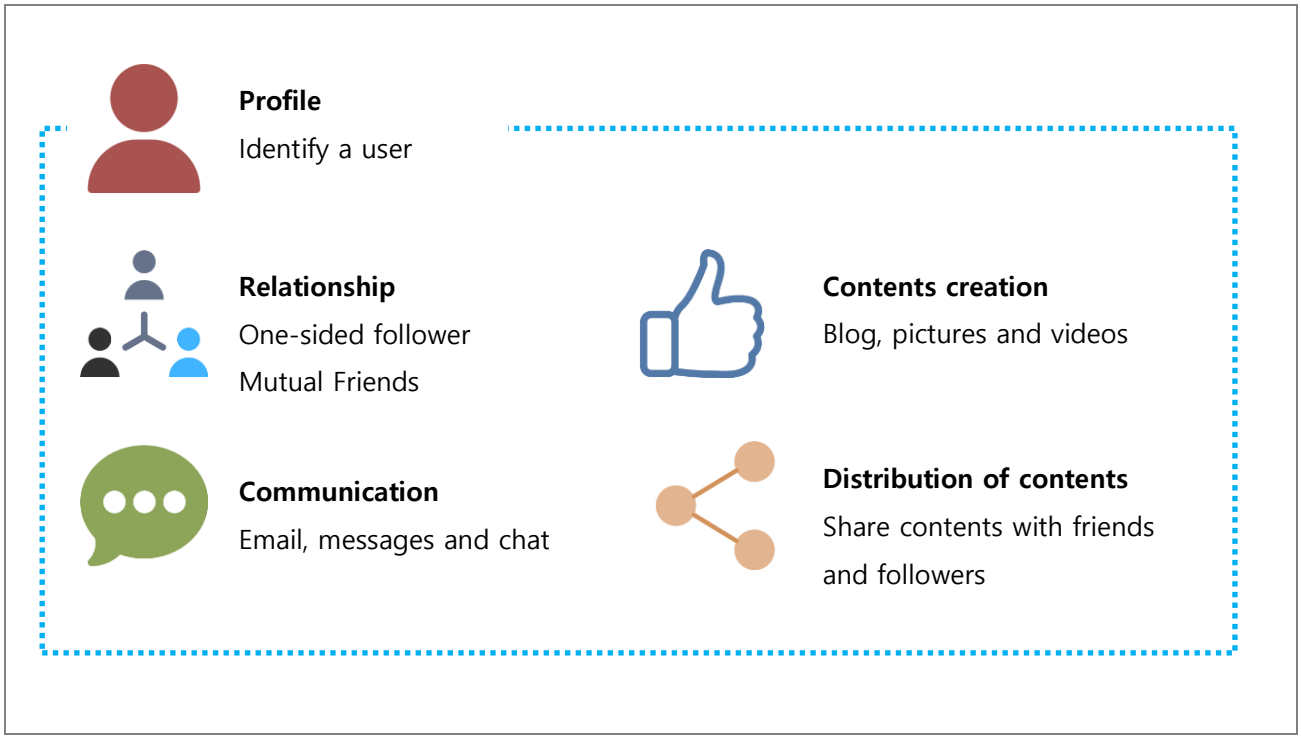
I. Introduction

1. Social network and online community

A social network is a service that enables users to establish relationships

A social network is a service that enables users to establish relationships among users with common interests online, and enables various community activities such as networking and information sharing through accumulated personal relationships. While social networks are often used interchangeably with online communities, communities often refer to group-centric community services where people of similar interests come together in one place, whereas social networks focuses on each individual to have relationships with other people to form a larger network.

Social network features with personal profiles



2. Evolution of social network

1st Generation: Extend offline social networking to online

The first-generation social network mainly focused on 'personal relationships' that can only be established via invitations and requests. The user profile in the first generation of social network is subjective profile that the profile owner enters for himself to relate to other users.

The first-generation social networks, which allowed people to build and extend their offline social networking connections on the web, became very popular, but soon became old and mundane as they were unable to find new growth factors.

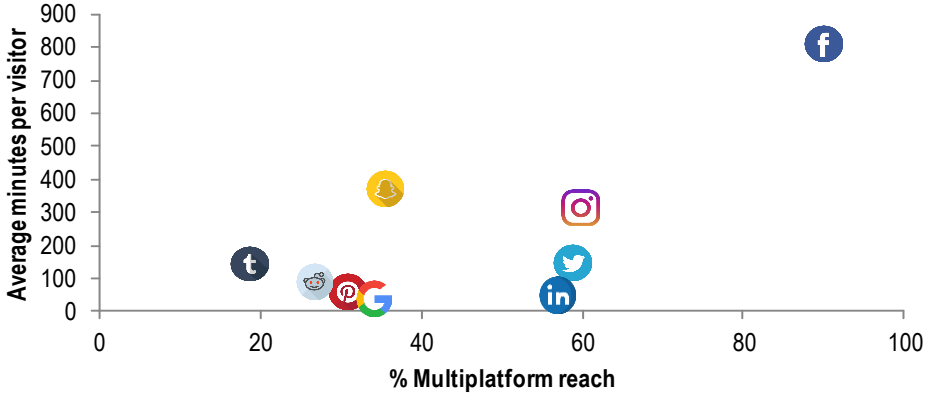
2nd Generation: Contents oriented networking

Second-generation social networks are characterized by the ability to focus on 'utilization' of relationships in conjunction with contents. The network extends not only to the people who are directly related to the user, but also to the acquaintances of the acquaintances, producing, sharing and distributing contents. The second generation social network was a new content distribution system, and the subscription procedure was not complicated and the content was easy to share. Through the second-generation social network, users are not only creating a relationship, but also becoming a key player in the production, distribution and consumption of information (content) economics. Users reproduce information themselves and distribute and consume information through their own networks.

3rd Generation: Interest and preferences oriented contents

The sudden burst in information producers and distribution channels in second - generation social network services has resulted in the overflow of information and similar services. As a result, users have formed a network that relates to 'their favorite contents' rather than their relationships with others. Third generation social network services are introduced in various forms to provide better service to users. People with similar tastes and preferences have changed their social networks in a way that jointly produces and distributes 'content' to enhance user convenience.

3rd Generation: networking with contents rather than their relationships with others



Ref: comScore MMX, UK (2016)

3. Personal data ownership issues

Range of personal data collected by the service providers

Social network service providers collect a wide range of user information based on user-created profiles as follows.

① Activity of the user and information provided by the user (personal profile, content type, frequency of activity)
② The activities of other users and the information provided by other users (information that others write about me)
③ Network and Relationship Information
④ Payment Information (Financial Transaction Information via Social Network Platform)
⑤ Device information (device identifier, location of geographical device such as GPS, connection information such as IP address)
⑥ Information about the app on the website that uses the service
⑦ Information from third-party partners

Improper usage and management of personal data

The collected information is shared and managed by the social network platforms as follows:

① Advertising, measurement and analysis services
② Vendors, service providers, and other partners
③ The information that others share about the user is not part of the user's account, so if the user's account is deleted, it will not be deleted.

Exchange of personal information for planform fees

In the above policy on information collection and use policy and information sharing, it can be seen that the ownership of data of the user is not completely owned by the user.

Most free online services create a platform that users can enjoy and generate revenue by attracting advertisements from outside operators as the number of users increases. Users think that they use a particular platform to join and use it for free, but eventually they have exchanged personal information for platform fees.

The annual value of personal data for each person in the U.S.:
USD $1,800

In the global advertising market, sales related to mobile and desktop, or user information, are approaching 40% of the total ad market, and are now growing at 4.3% per year. Total advertising market in North America[Ref. Media Outlook] is about $ 240 billion, which is about $ 1,800 per user. This is what social network platforms are gaining from selling user information. Individuals are missing out on the revenue they can generate by owning their own information, and apart from this, they are always exposed to privacy issues.

4. Cost incurred due to rapid evolution of social network

① Costs associated with fake user information

Profiles that are the basis of all social networking activities are difficult to verify because they are entered directly by the profile's owner. Inconvenience and social costs are incurred due to unverified user information. Users may impersonate a specific person or refrain from exposure, thereby exposing only minimal information. Rather than express themselves as they are, they often express content that they want to be seen by others, or distort content to gain popularity among many people. As such, the profile of a user created by a social network activity that is not based on the person's "as is" is unreliable. We believe that connecting with new people based on an unverified profile cannot be considered a genuine human networking that can build trustworthy relationships.

Facebook has about 2 billion monthly active users (MAUs), and it is reported that there are 270 million false accounts, which is about 14% of total monthly active users. False accounts degrade the accuracy of marketing, depreciate relationships with others, and waste social resources. The purpose of a false account varies from getting traffic to getting ad revenue, to being politically motivated as it was in the US presidential election, or to causing social disruption or more.

② Proper social curation is needed to filter out unwanted contents and information

In the flood of contents and information, it is difficult for users to find high-quality information; therefore, excessive time is consumed to obtain desired information. Currently, the social network market seems to be reaching its peak of growth, but users become more and more fatigue as they are exposed to too much unwanted information. To solve this problem, social network platforms started to provide differentiated services called 'social curation'. It is a service that helps users to search for content and information curated by their acquaintances. It is classified as high quality information, but information exposed to users is limited to the knowledge and interests of the acquaintances.

③ Service providers enjoy the value from user information and user activity

Corporate spending on social networks stood at $41 billion in 2017, marking double-digit growth every year. Companies analyze data generated from social networks to successfully predict the market, achieve sales growth and reduce costs, and use it to create value. While most of this information comes from users, its value is entirely enjoyed by social network service providers and data consumers.

The next generation of social networking: trust-based social networking with proper data ownership

In the next generation of social network, users should be able to become a part of trust-based social network that enables genuine communication with others, productive networking, and strong relationships. The user's information should not be passively protected by legal or institutional regulations but should be returned to the users so that users can create their own value using their own information. Users should be able to maintain closer ties with companies so that they can receive direct and indirect benefits from daily activities and see what their activities mean for society.

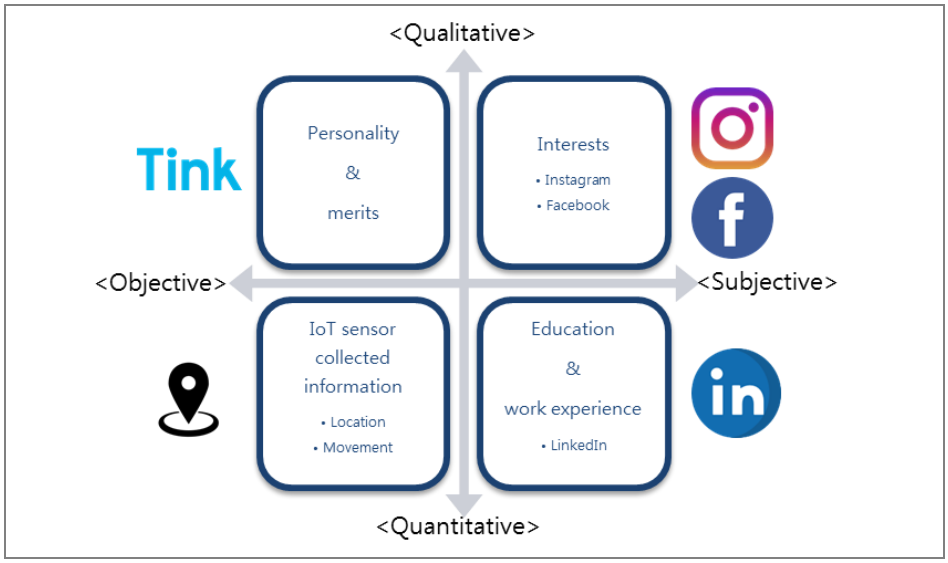
Value-chain of trust-based social network

II. Tink – Social networking with socially verified profile

1. Profile with qualitative data

The value of personal profile increases dramatically with qualitative information

Personal data types



The user profiles and personal data in current social network services contains the following:

① Hobby and interest information from content created or shared by users
② Information such as education, work, and history entered by the user
③ Information measured by sensors such as location information

This information is either quantitative or subjective, but it is not enough to describe a unique person. A person is more than education, grades, work experience, and nationality; qualitative data about a person is what best characterizes and distinguish each unique person. The value of personal profile increases dramatically when the profile contains qualitative information. It is incomparably more difficult to look for wanted person if qualitative information about the person is missing.

- A woman is looking for a loving and reliable man of similar age to date.
- A business is looking for a creative, adaptive and well-organized sales reps.

If qualitative information about a person is objective and socially verified, finding the right person becomes incredibly easy.

Tink profile contains not only socially verified basic information with name, education, work and contact information, but also positive qualitative data about the profile owner.

In addition, each individual's interest will be verified by collecting and analyzing the websites visited, content created and shared.

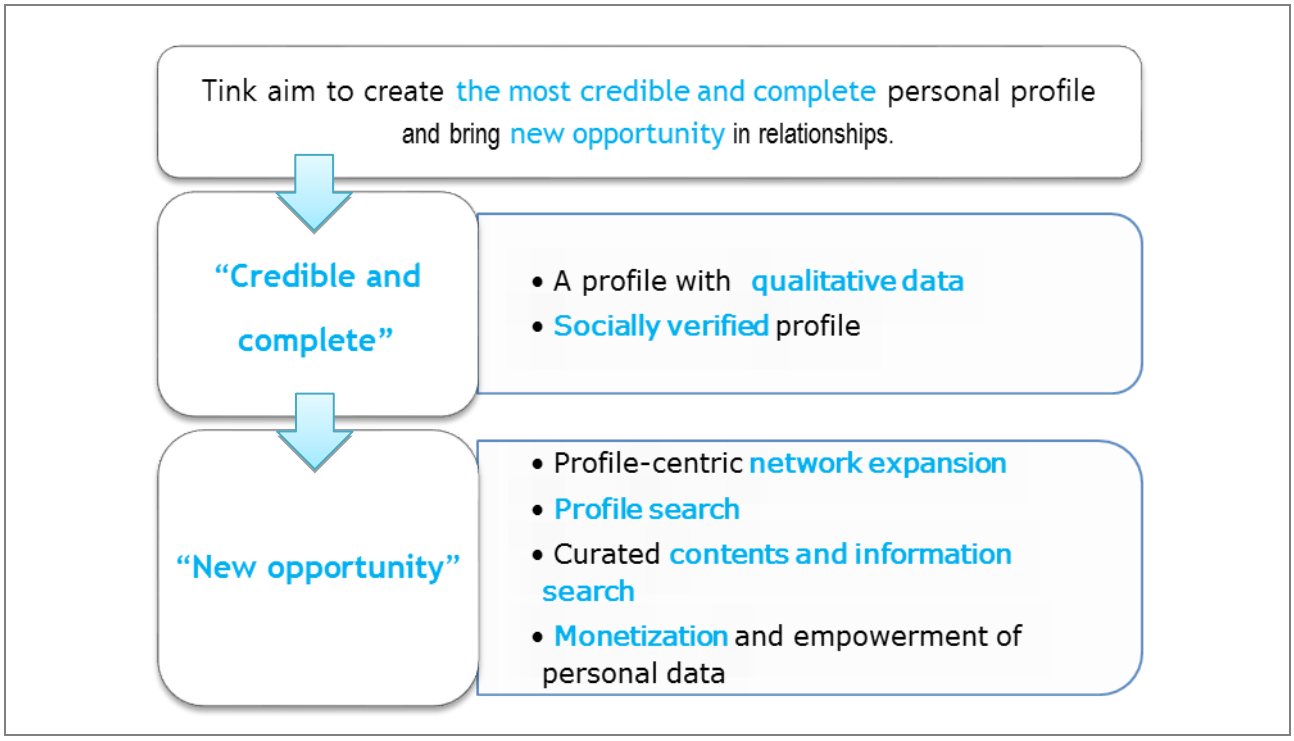
Tink aim to create the most credible and complete personal profile and lead users to more opportunities in real human networking.

Qualitative data from compliments and positive feedback

- slow worker - anxious - weird **X**	- thorough worker - thoughtful - creative **O**

The qualitative data in Tink user profile is created by letting acquaintances send each other a compliment anonymously. Tink user is never negatively evaluated by others in the process of counting anonymous votes and generating qualitative data. Different types of compliments can be sent to a friend anonymously, but the user will not be able to type or comment on the friend.
If enough number the same compliment is received from friends, the compliment becomes socially verified and the user profile is updated to reflect the change.

Tink aim to create the most credible and complete personal profile



2. Socially verified objective profile

Tink trust-based profiles extend social relationships beyond the personal domain

The social network users today create a profile for themselves by entering information such as gender, school and work places, which make it easy to customize their online presence in any way they like. They can enter false information or upload a picture of someone else and fake their identity. Abusive users may intentionally create a fake profile for malicious intention and some users may not enter profile information to stay invisible or unidentifiable. A profile on the current social network without verification process cannot be trusted, which lowers the value of the social networking experience.

For example, when starting a new relationship based on the unverified profile, the user is forced to communicate with the uncertainty of the other person's profile information and unaware of his or her personality.

Tink, however, can easily establish a trust-based relationship by identifying trusted profiles. Since Tink profile contains compliments about the person starting a new relationship with, the user will be able to understand the person better even prior to starting the first conversation. These trust-based profiles will actively extend social relationships beyond the personal domain as it becomes easier to establish good relationships with businesses and services.

Social verification of the user information through blockchain technology is one of the key elements that distinguish Tink from any other social platform. Socially verified profile will lead each user to more opportunities and better social networking experience.

Tink aims to have the users enjoy the activity of verifying the profiles

Analyzing the desire to better understand and acknowledge what others like about oneself, Tink aims to have the users enjoy the activity of verifying the profiles and sending compliments anonymously to each other. In addition, profile verification is an activity contributing to the Tink ecosystem; therefore the users who participate in the verification are rewarded with Tink coins.

3. Reclaim the ownership of personal data

Cost paid by the data consumer utilizing user information is sent directly to the data provider

By leveraging the blockchain technology, Tink is designed give the advertising profits that social network services enjoy utilizing their user's personal data back to the righteous owner of the data. Tink is a decentralized social network platform. And since there is no intermediary, the cost paid by the data consumer utilizing user information is sent directly to the data provider. Each user can fully own and enjoy the benefits of profile information at Tink.

As the quality and precision of the target user information increases, external data consumers can significantly reduce the cost of marketing and acquiring the user data.

The profile owner has the full data privacy

Even though the profile is created by votes from others, the profile owner has the full data privacy. Any information in the user's profile can be set as open to public, open with benefits or privately owned.

①**Open to public**

- Information publicly available for free.

②**Open with benefits**

- Information that is disclosed only to the person who paid the reasonable amount of tokens for the information.

③**Private**

- Private profile information that only profile owner can see

With the profile owner's permission, the information contained in Tink profile must be socially verified to be found and becomes visible to others.

III. New Opportunities that Tink Profile will Bring

1. Profile-centric Network Expansion

Within content-centric SNS, it is hard for users to express themselves

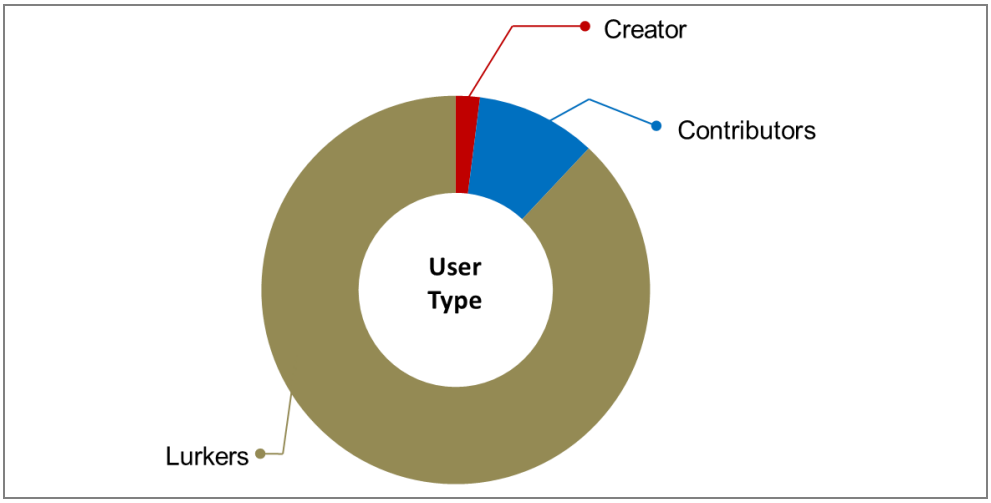
Currently, social network users create content by posting photos of their travels and videos of them enjoying their hobbies and communicate with friends or followers online. As such, social networks form relationships around content created by individuals.

Currently, a small number of users who generate content are fueling the entire ecosystem. According to the '1% rule', only 1% of Internet users create content, 9% of the users contribute to the ecosystem by commenting or sharing the content, and the remaining 90% are categorized as Lurkers who simply enjoy contents.

These 90% of people who passively consume content also have the desire to express themselves to others like content producers, but they are not accustomed to modifying content and packaging properly, and sometimes feel tired of constantly taking and uploading pictures and videos. In content-centric relationships, even if they have similar (or better) intellectual levels and interests to the 1% content producers, they are not found and are not given the opportunity to network with others. This means that most people with the same interests have difficulty networking with each other. Although it is easy to find content in an area of interest, it is not easy to find people with similar interests and build relationship with them.

Tink is a social networking platform that can network based on profile, not photo or video content. Even if you are not accustomed to producing content, profiles are generated by third parties through information automatically collected from your online activities. This profile through Tink's search capabilities, allow you to be found as a special person with a distinct identity among many people. All users can become the center of the network without being alienated, and it is possible to communicate with others who were not accessible before.

Within content-centric platform, 1% influences the whole



2. Searching for the Profile of a Specific User

Search for the profile of a specific user

Tink's socially verified profile can be used to check a specific person's verified information.

Example 1) We are going to hire people to do simple chores. I would like to have some reliable material to know how the applicant is.

Example 2) I want to make the buyers coming to Korea tomorrow feel good. I would like to review beforehand what buyers will like.

Example 3) I want to know more about the wonderful woman with whom I had a chance to talk today.

The Tink profile is verified based on relationships with third parties and include information that is difficult to verify yourself such as personality and disposition, in addition to general information on other SNS such as personal history, academic background. Therefore, we can check the most reliable and most valuable information for the purpose of learning more about a person.

Search for users that meet certain conditions

Tink can search for people based on profile information. It is possible to search for an unspecified group of users satisfying various conditions as well as searching for a specific person. Especially, since it is possible to search by qualitative criteria such as personality, disposition, and interest which are generally unknown, it is possible to find a person who is more fitting with the user.

Example 1) Sam recently became interested investing in ICOs and is looking for someone who has made successful ICO investments. Among successful ICO investors, Sam would like to get to know someone who enjoys sharing information and making new friends.

Example 2) I have been assigned a new job but have difficulties in doing it. I would like to meet someone who is knowledgeable in this field and seek advice. Especially, I would like to meet a person with a successful career in the industry with similar tendencies to myself.

Example 3) Peter is looking to date a beautiful, intellectual woman in her 20s living in the same town. Especially, Peter would like to meet a woman with common interests, similar dispositions.

3. Provide More Effective Information Curation through Profile

Provide more useful information based on profile

In the future, Tink will add functions to post and share text, photos, and videos. Currently, Google provides search results by ‘Normalizing' the number of links on web pages, but Tink allows users to get the information they actually need based on their profiles.

- “Most viewed news by active men in 30s”
- “Website most viewed by electronic industry workers who prefer to work alone"
- "Ad for the most popular coffee drink among coffee enthusiasts" etc.

If the qualitative curation unique to Tink is added to the information produced by more reliable users, users will be able to obtain more suitable search results in the flood of information.

More precise and targeted advertising become possible for the external service providers

All the information circulated in Tink is curated on a profile basis, providing more readable information to each individual. Moreover, if the user agrees, the marketing advertisement will be exposed to the individual, and the advertisement is very likely to be useful information to the user unlike the existing advertisements.

The advertisement contents exposed on the screen such as news feeds can be more sophisticatedly displayed to the user. In addition to the general information of the user being verified, it is also possible that the external marketing service provider (Marketer) provide more precisely expose their products Service or service to users who would want them based on users’ qualitative information previously unavailable.

If the user has the confidence that the information provided to the user is customized information, the probability that the user will click and read the information increases. As a result, companies providing information or media that create contents enter a virtuous cycle structure that can achieve their goals without unnecessary waste.

4. More Reliable Contents Created by Verified Profiles

Contents created by verified users is more reliable

In the future, Tink users will be able post and share text, photos, and videos. At this time, the difference between the existing social network and the online community is that users with proven reliability can publish contents, thereby naturally enhancing the reliability of the contents.

Example) I have seen stock investment advice. When I looked at the profile of the writer, he had much investment experience, and his record was verified by others. I could immediately trust that advice.

Considering that false information circulates around the 'fake account' and confusion occurs in the market, there will be fewer distractions such as the spread of fake news and false facts.

5. Profit from Profile Verification and Information Disclosure

Tink: The Decentralized Social Network Platform

Through blockchain, Tink is designed to provide profits earned by existing SNS services entirely to the users. Tink is a decentralized social network platform, and because there is no intermediary, the cost paid by the data consumer using that information is paid entirely to the user. Users can accumulate their information on Tink and own and enjoy all the benefits from the information.

On the other hand, even if you do not disclose your profile information, participating in the activity of verifying the profile of another person is also a contribution to the ecosystem and can earn economic rewards. Moreover, the quality of information on the platform improves as verification activities increase; external service providers (Marketers) can significantly reduce the cost of wastes in other existing systems. As the incentive for external service providers to participate in the platform grows, a virtuous circle is formed that can maximize individual benefits.

6. Provides Opportunities to Identify and Develop Your Own Strengths

Provides chance to look at yourself objectively through other people's perspectives

'I usually just listened to my friends as I had thought that I was bad at conversation. However, my friends praised me as a good counselor.'

Sometimes, other people's perspective on me is more accurate than my own perception of myself. You can be more talkative than you think, be more humorous than you think, and be more trustworthy than you think. When we can correctly grasp our objective self, we can prevent us from falling into despair from our own incorrect perceptions and fix misunderstandings about ourselves that we did not think was possible.

Giving a chance to look at oneself objectively is one of the good use examples of verified profile of Tink platform. The users can find facets of their selves which were previously unknown in their daily lives. Furthermore, we can identify our own strengths and develop them. We hear 'every day and everywhere' that we work in areas where we can identify and develop our strengths, but this is not an easy process. Tink can solve this simply with diverse set of praises in accumulated on our profiles. Tink allows your friends to praise you to discover your strengths that you did not even think about and also gives them great experiences unearthing their own strengths that they were previously unaware of.

IV. Tink System Architecture

1. Data Flow Overview (Decentralized Exchange by Smart Contract)

Within Tink System, both Data Consumers and Data Providers can exercise their rights over personal data and Token ownerships through smart-contract. Tink System's Data Curator and Targeting Tool are central parts that connect Data Consumers and Data Providers with smart-contract on blockchain. Data providers save conditions of their own social profiles on smart-contract, while data consumers also save preferred conditions on smart contract. Tink System completes contracts between Data Provider and Data Consumers through searching and compare smart-contracts between consumers and providers.

Data Consumer & Provider complete the contract of the desired conditions through the SMART-CONTRACT

2. Tink Data Types

Tink will build the most complete profile

Within Tink System, we will first focus on social profile with qualitative data to increase Dapp user base. But for system scalability, we will adopt following data types to Tink System in phages, utilizing them as personal data as we build more complete profiles.

①**Socially Verified Information**

- The information of a specific user generated by third parties through Tink's relationship verification algorithm

②**Identity information**

- Factual data that can be used to identify oneself such as name, profile photo, sex, date of birth, phone number etc.

③**Collected data**

- Collected and measured data from the owner’s mobile device such as location, movement, pulse, time, purchase history, online activity, the way one talk, read, eat, type, sleep etc.

④**Interoperable data**

- Data from other 3rd party online application, institution or government in blockchain ecosystem. For example, one’s dental record, health record, number of likes and followers in online community, purchase history within the service are considered interoperable data.

3. Data Flow

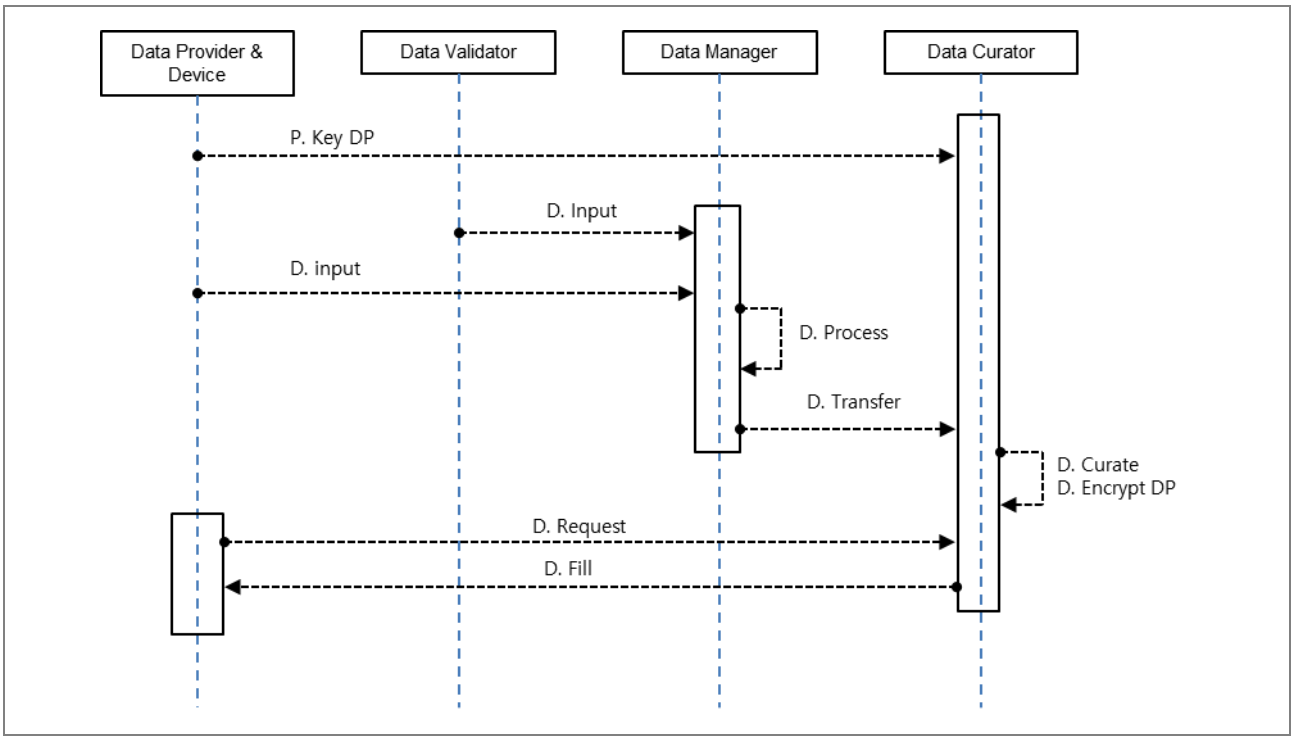
The following are the key components of TINK System: 1) Data Provider, 2) Data Manager, 3) Data Curator, 4) Smart Contract [Ref. Smart Contract] Source, 5) Targeting Tool, 6) Data consumer. Those six components interact symbiotically to operate Tink System. We would like to include a diagram showing roles of each component and system flow between components.

Profile creation and verification by Data Providers

Data Providers receive User Interface Tools (UI) from Data Manager to complete personal profile. Profile data (D. input) from Data Providers will be entered into Tink System from other users (Nodes) to Data Manager. Input data then undergoes processing (D. Process) [Ref. Data Processing] at Data Manager All Dark Data, including unverified data, is entered to complete social profiles of Data Providers. Then data from Nodes are combined to go through processing to complete Verified Profile.

Thus, 1st stage Social Profile is completed, and Data Manager transfer the data to Data Curator (D. Transfer). Data Curator receives data and customizes the data to be provided to final Data Consumer (D. Customize). Moreover, at Data Curator, Social Profile is completed through encryption process by Data Providers' Public-Keys (D. Encrypt DP). Final encrypted Social Profile is saved to IPFS System. At the same time, Data Providers can access their own Social Profiles through their Private Keys.

Tink profile creation process



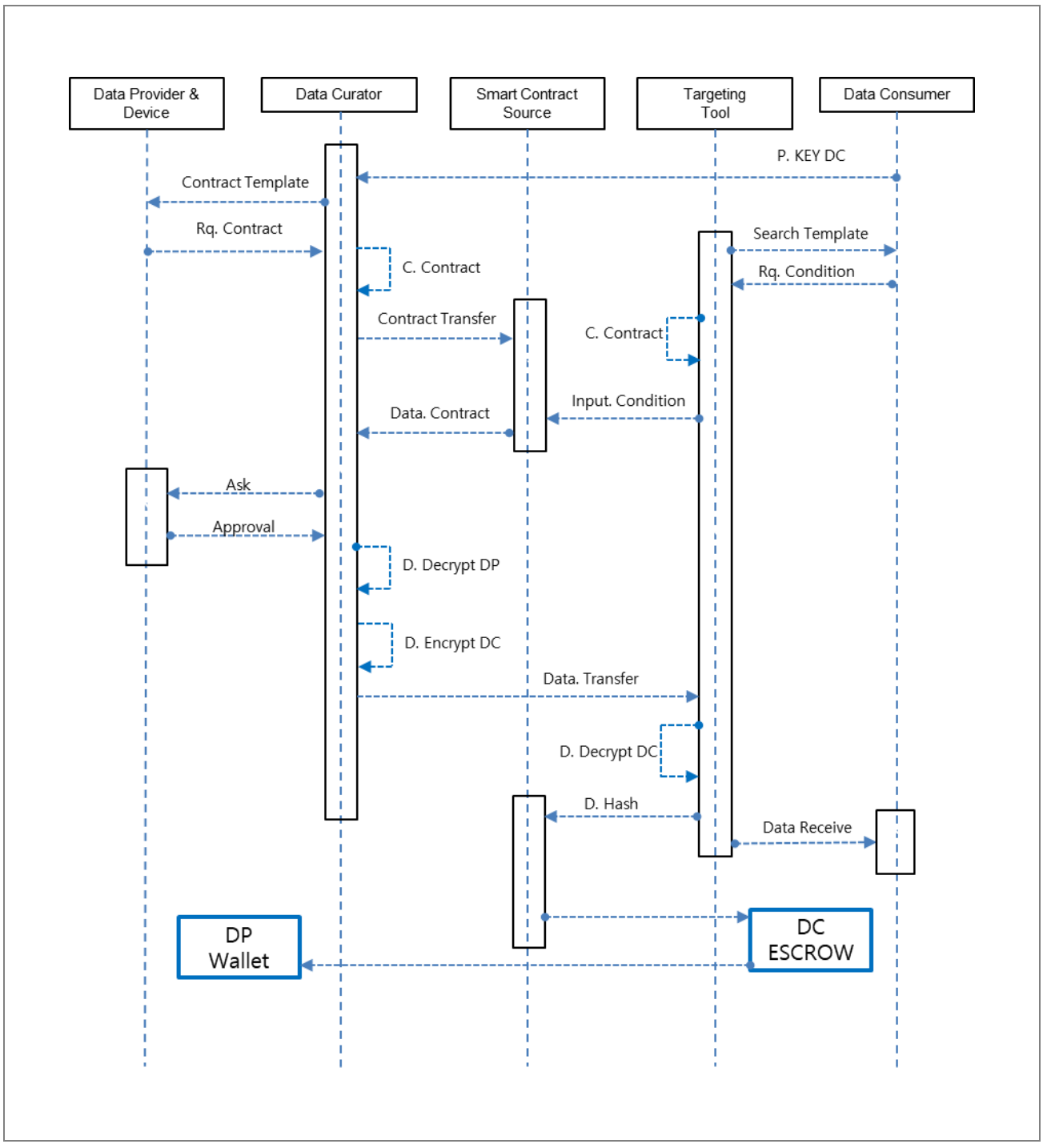
Smart contract signing and flow of data and tokens from Data Providers' perspective

Data flow consists of three key components of Data Providers, Tink System, and Data Consumers. Within this part, Tink System is composed of 1) Data Curator, 2) Smart Contract Source, 3) Targeting Tool.

Data Providers receive Contact Template that they want to set from Data Curator and input Contract Request (Rq. Contract). Upon Request, Data Curator process Contract Creation (C. Contract) in Code, and the result is saved to Smart Contract Source (Contract Transfer). Data Providers can update the Contract Code whenever they desire.

Data Consumers receive Search Template from Targeting Tool and can enter required conditions (Rq, Condition) to search Data Providers. Those conditions process Contract Creation (C. Contract) at Targeting Tool, and Targeting Tool enters those conditions to Smart Contract Source (Input. Condition). Smart Contract Source matches Contract Data, and contract information of matched Data Providers and Data Consumers is sent to Data Curator (Data. Contract). Data Curator asks Data Providers to approve transaction. When Data Providers approve transactions upon notifications, Data Providers' Social Profiles undergo encryption process using Public Keys of Data Consumers (D. Decrypt DP, D Encrypt DC). Social Profiles generated by Data Curator is then transferred to Targeting Tool (D. Transfer), while Hash signed by Data Consumers' Private Keys are sent to Smart Contract Source (D. Hash). Upon receiving the Hash, Smart Contract Source orders Tink Token transfer from Data Consumers ESCROW [Ref. ESCROW] to Data Providers' Wallet. At the same time, Targeting Tool provides Social Profiles of Data Providers to Data Consumers (Data receive).

Profile information and token exchange flow from Data Providers

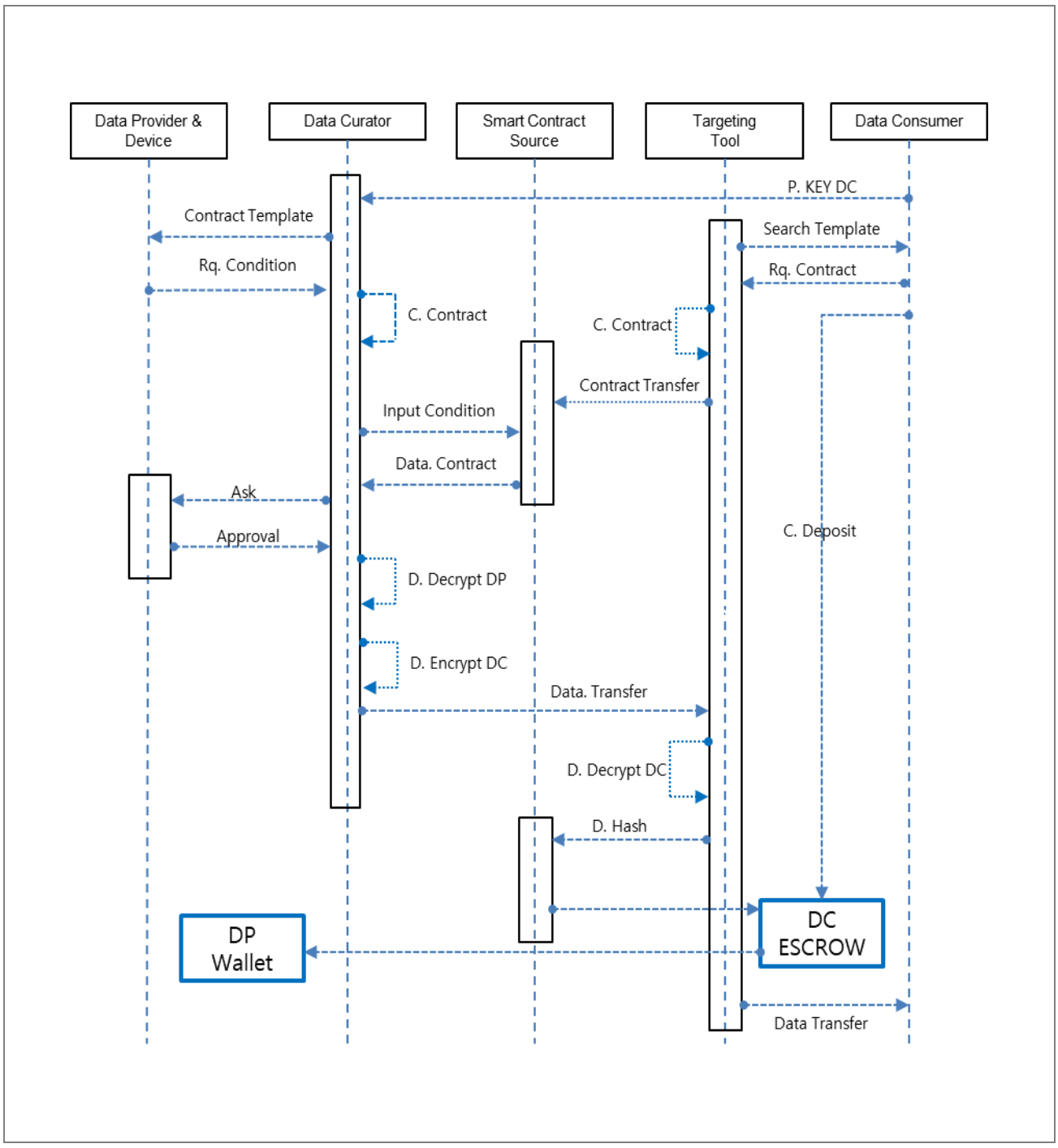


Smart-contract signing and flow of data and tokens from Data Consumers' Perspective

Targeting Tool provides Template to enter required information of desired Social Profile to Data Consumers. Targeting Tool asks for contract requirements (Rq. Contract) and deposits to Escrow according to appropriate Tink exchange rate of each social information and required Threshold levels. Targeting Tool creates condition (Code) to the requests (C. Contract), and those contracts are transferred to Smart Contract Source (Contract Transfer).

Through Data Curator, Data Providers are provided with Template to view Contract info entered by Data Consumers and request search for Contracts from Data Consumers that fit the requirements (Rq. Condition). Data Curator creates Contract requirements based on conditions entered by Data Provider (C. Contract) and inputs Contract requirements to Smart Contract Source (Input Condition). Smart Contract Source sends data of matched Data Providers and Data Consumers to Data Curator (Data. Contract). Data Curator then asks Data Provider for transaction approval and encrypts Social Profiles of Data Providers using Public Keys [Ref. Public KEY] of Data Consumers (D. Decrypt DP, D Encrypt DC). Social Profiles generated by Data Curator are transferred to Targeting Tool (D. Transfer), while Hash signed with Data Consumers' Private Keys are sent to Smart Contract Source (D.Hash). Upon receiing the Hash, Smart Contract Source orders transfer of Tink Token from Data Consumers' ESCROW to Data Providers Wallet. Targeting Tool sends Data Providers' Social Profiles to Data Consumer to complete contract (Data receive). This process is repeated until Smart Contract Source confirms that ESCROW Deposit is depleted; then Contract Request created by the Data consumers are deleted within Smart Contract Source and no further contracts are processed.

Profile information and token exchange flow from Data Consumers



V. Tink Token Economy

1. Tink Token Economy Overview

Within Tink, the compensation paid to the user is divided into internal reward and external reward to circulate the tokens.

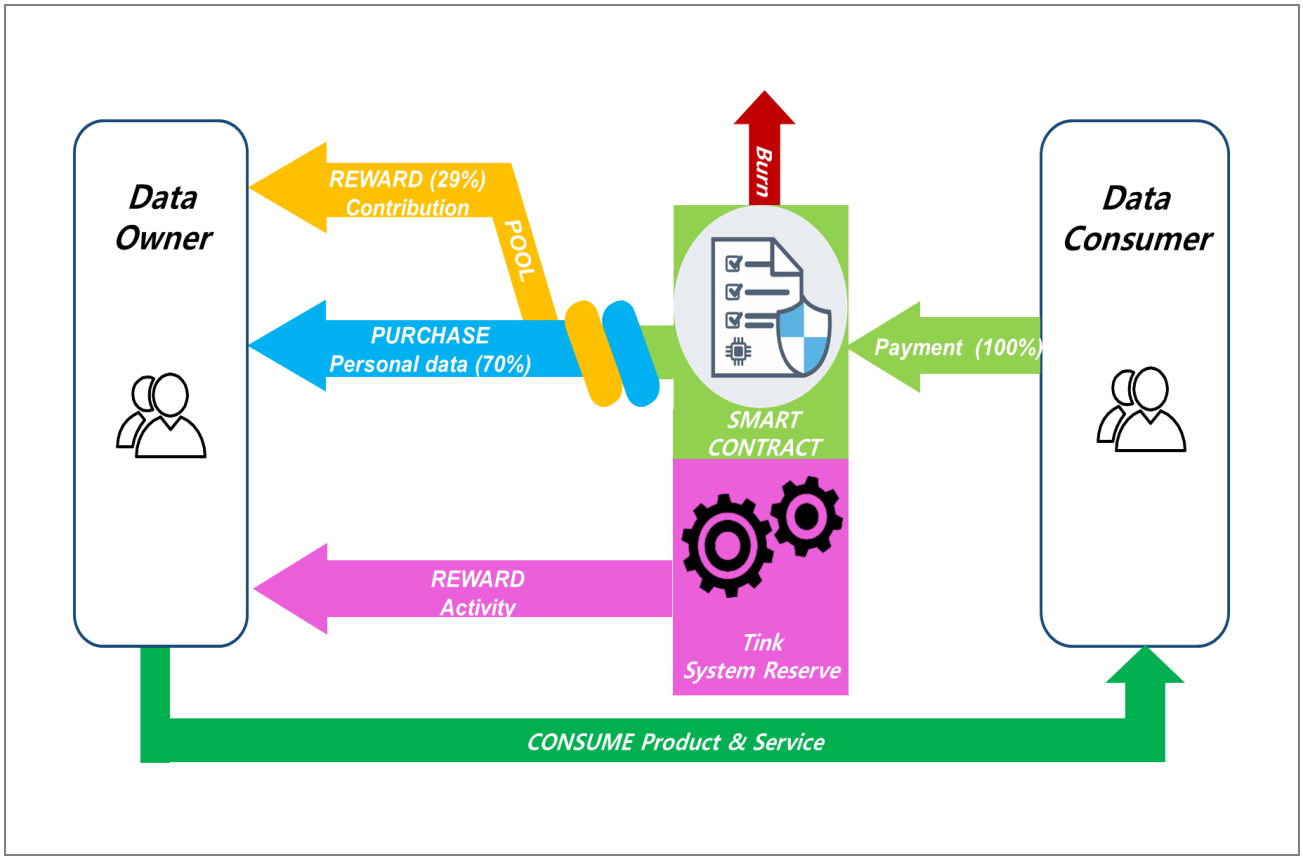
Data Providers are users of Internal Token Economy [Ref. Token Eco] and remain active within Tink System, gaining Token through Proof of Activity. At the same time, users can use possessed Token to check other users' Social Profile or utilize External Service. Each owner of Social Profile has full control and decides whether to open her own Social Profile.

Data consumers are users of External Token Economy and acquire Token externally to exchange with Data Providers' Social Profiles.

Example 1. Brad is interested in Jane's Social Profile within Tink System. Brad can check Jane's Social Profile after paying Token. In this case, Brad is both Data Provider and Internal Data Consumer.

Example 2. Recruiting Agency A is looking for a quiet Singaporean worker who likes to work alone. By offering Token within the system, Agency A can access demographic and contact information of users with high scores in target criteria.

Tink Token Economy Overview



2. Tink Token Circulation

The following is the Tink Token flow diagram. Long-term equilibrium value of Tink Token can be inferred from the diagram.

$$\sum_{n=1}^{6} Mn * Vn = P * Y$$

(M : Tink Quantity, V : Velocity, P : Price, Y : Transaction Volume)

According to quantity theory of money, 6 types of flow exist within Tink system; among those six flows, only flows 2, 3, 5 are controlled within Tink System. Within Tink System, Data Consumers exchange Tink Token for user data, providing portion of the purchase to Data Providers immediately while the other portion is pooled within Tink System to be given to users through Monthly Contribution Point (MCP) based on β to control velocity of Tink Token.

$$M2*V2=(0.7+0.29\beta)*M2*V2$$

β: periodic ratio of Tokens given to Data Providers from the pool

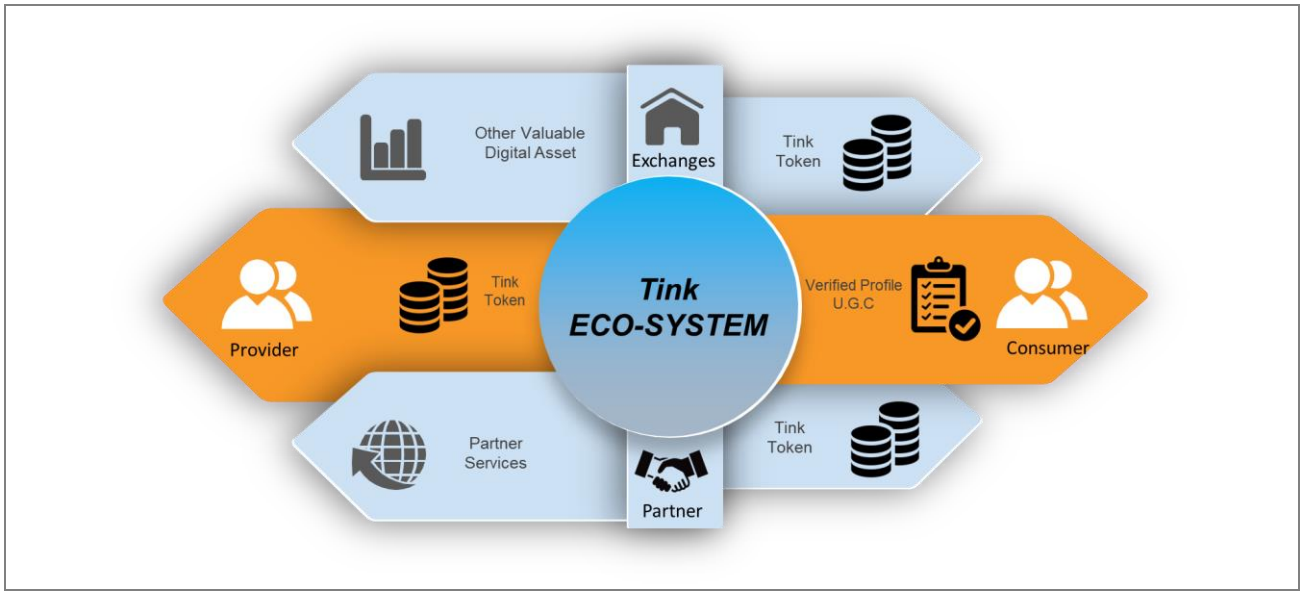
Token's velocity can be defined as following.

Token Velocity = Total Transaction Volume / Average Network Value

Therefore, Average Network Value = Total Transaction / Velocity

According to the above formula, if all exchanges occur immediately without taking Token's Velocity into account, Token's transaction volume might increase linearly, but it is difficult to achieve long-term value appreciation. Within Tink System, controlling change in β within MCP and speed of Tink Token exchanged outside ecosystem through partner services can help achieve long-term value appreciation of TINK Token.

TINK Token Flow Diagram - Black lines: External TINK Token Market, Orange lines: Internal TINK Token Market



3. Data Providers

Internal reward system

Data Providers are key users for ecosystem expansion and participants who register and create profiles. Data Providers receive Token or MCP by creating their own accounts or updating other users' profiles. At the early stages, Token will be given sequentially according to completeness of Social Profile. As Token Value might fluctuate [Ref. Eco Fluctuation], reward will be linked to fiat currencies to prevent relative value differences from arising when subsequent users complete their profiles. Users should expect to receive proportional and fair rewards when they put in efforts to complete their Profiles. The following formula shows such process.

Rewards based on Social Profile Completion : $Rn = \sum_{k=0}^{n} f(Pk)/f(Tk)$

T : FIAT Value of Tink , P : Personal profile data price at External industry.

MCP was designed to encourage Data Providers to continuously use the App. User nodes are connected when a user invites new users to the System. Connected nodes share mutually received Tokens from external sources. Those Tokens are given out differentially from the pool to users according to the users' MCP index. Activities such as creating Profile, inviting new users, and external Link request activities accumulate MCP. At the end of each month, users are distributed Tokens according to their accumulated MCP. Each user's MCP is then set to 0 on the 1st day of each month. The following formulas show such processes.

$$Rn = \frac{1}{K} * \sum_{n=1}^{k}[Pn + MIN(Pk * Qk, \frac{Pk}{2})] - \sum_{n=1}^{k-1} Rn \ , \quad R1 = \frac{1}{2} * P1 + MIN(P1*Q1 , \frac{P1}{2})$$

R : Reward, K : Node Count, P : Point for each User, Q : Quantized Bonus Ratio

External reward system

Data Providers exchange Social Profile with Token at the request from External Data Consumers. Of the Token provided by External Data Consumers, 70% is given immediately to the Data Owner, 29% is reserved to Node pool to be differentially distributed according to MCP, and 1% is either burned or returned to System reserve to increase long-term Token value [Ref. Inflation].

4. Data Consumer

Data Consumers are key players of External Token Economy and acquire Token externally to exchange for Social Profiles of Data Providers. Data provided the system to Data Consumer is differed by System Development Versions.

Tink 1.0

At Tink 1.0, database of Social Profiles are saved to a Central Server, and Data Consumers are provided with Targeted Social Profiles from the Central Server. At this stage, individual pricing mechanism enabled by smart-contract is unavailable. Thus, rate of exchange is set according to going price of Profile in similar external transactions and distributed to Profile Owners.

Tink 2.0

At Tink 2.0, smart-contract enables individualized contract completion. Within Tink System, Data Owners set their own Profile exchange rate, and Data Consumers exchange Token for Data Owners' Social Profiles.

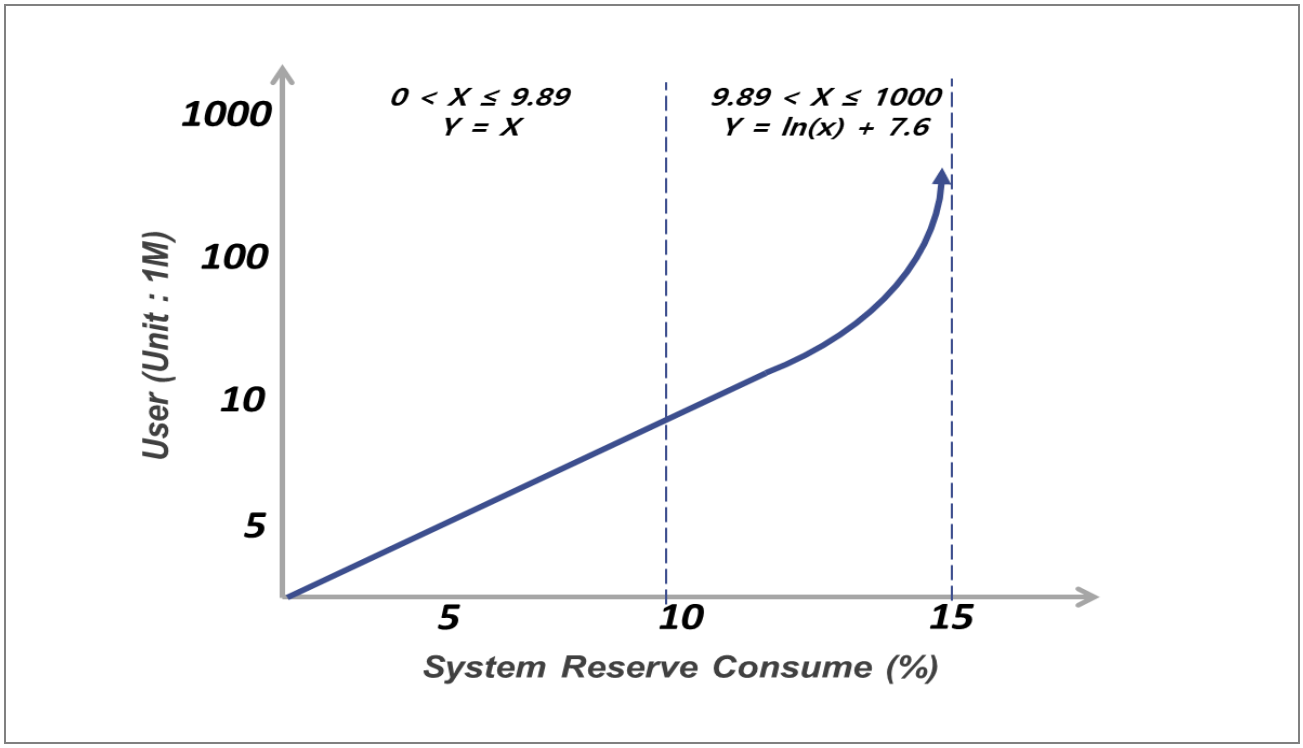
Tink 3.0

Individual personal information according to the DEX Model can be tokenized in the system, allowing individual exchange between personal information and Tink tokens.

5. System Reserve

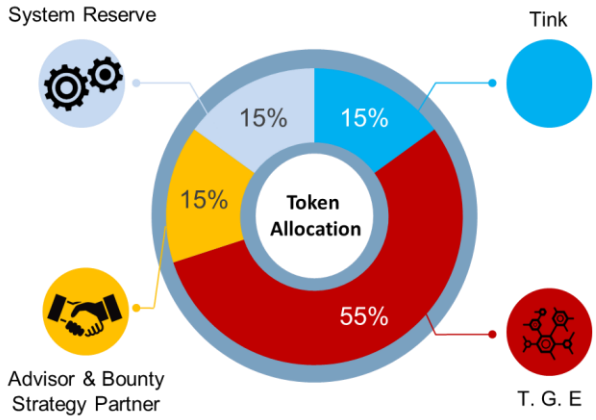
Reserve within Tink System will be utilized to reward user Profile creation and other activities to expand ecosystem. Total of 150 million Tokens will be used as System Reserve. Token will be given out at constant rate until the number of users within ecosystem reaches critical mass (i.e. enough users to be used by Data Consumers of External Token Economy - 10 million users). Thereafter, the number of Tokens distributed from System Reserve will decrease according to Log function to prevent the depletion of System Reserve as the system will continuously reward users as they update and complete their Profiles.

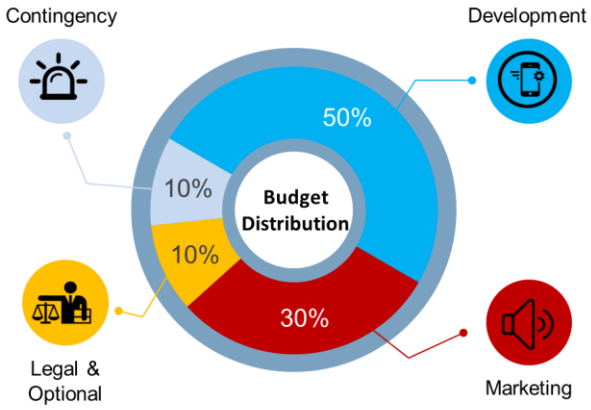
System Reserve Consumption Model



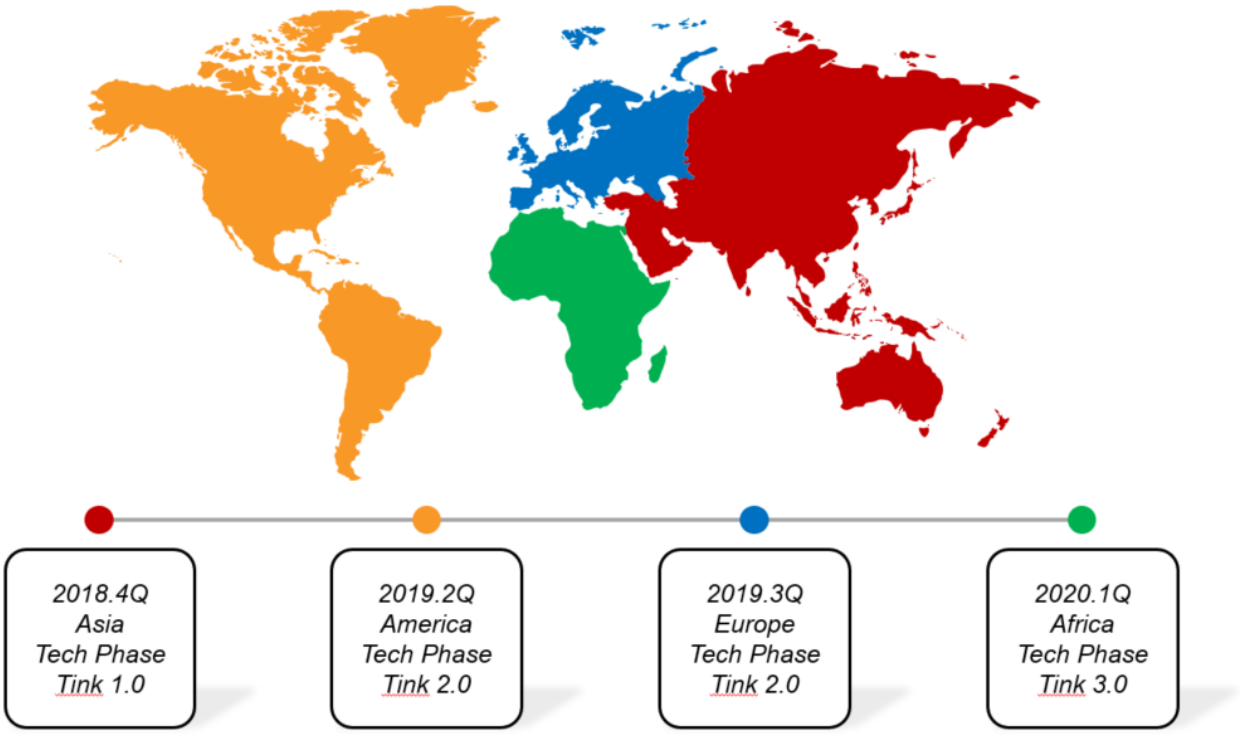
VI. Token Generation Event Detail

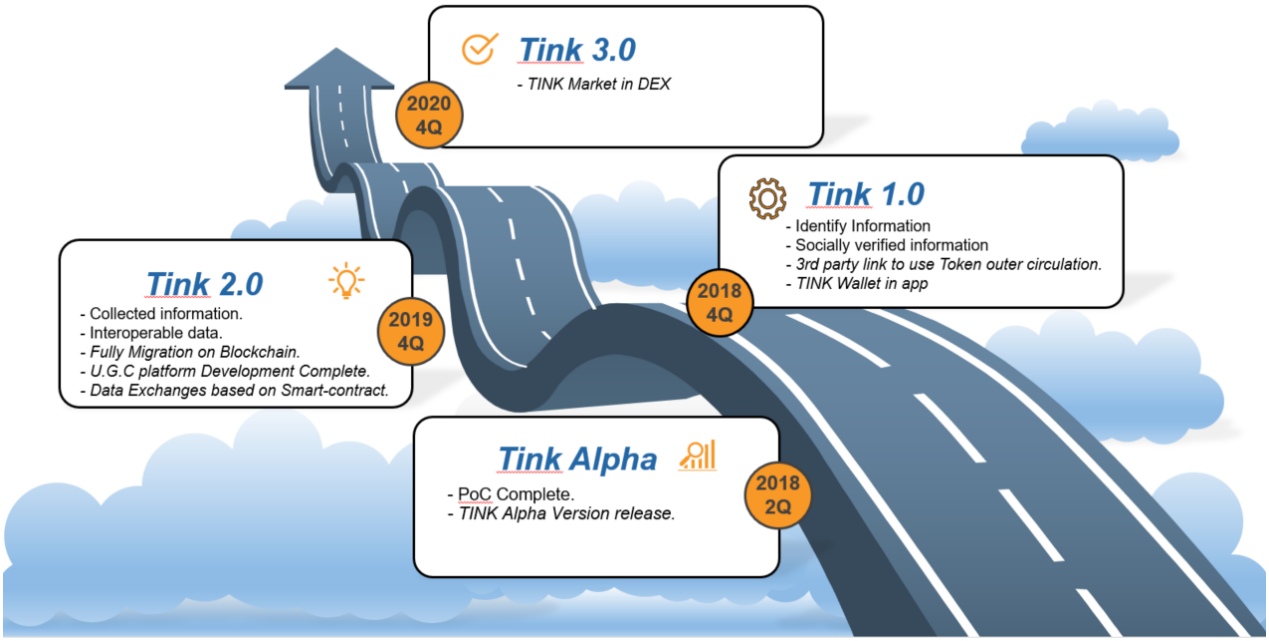
Name of Token	Tink
Simbol	TINK
Decimals	8
Role of Token	Utility Token
Use of Token	Purchasing Profile and Contents on the Tink platform
Total Supply	1,000,000,000 TINK
Token Generation Event	550,000,000 (55% of supply)
Remained Token Treatment	All remained token will be destroyed / No additional Token publishment
Exchange Rate	24,000 TINK per ETH
Soft-Cap	3,000 ETH
Hard-Cap	20,000 ETH
Accepted Currencies	ETH, ICX





VII. Tink Road Map





FAQ

1. Tink and General Data Protection Regulation

General Data Protection Regulation (GDPR) will be enforced from May 25th, 2018 in EU and is central to any platform dealing with personal data. GDPR mainly deals with platform service providers saving personal data on to a central server and utilizing such data to generate revenue. Tink System is designed based on blockchain, and all rights over information processing belong to individual users. The following are the summary of user rights under GDPR.

①The right to be informed

-Within Tink System, user information is not updated by the user, but by third parties or sensors, to be updated when user accesses the system as an authorizer. Users are instantly notified of changes in personal information as Tink System is designed to inform users of updated information once users access our system.

②The right of access

-Within Tink System, only the individual users can access personal information. If other users or third parties want to access a certain user's information, that user acquires right to appropriate Token payment.

③The right to rectification

④The right to erasure

⑤The right to restrict processing

-Tink system allows rectification, erasure, and processing of user's personal information if and only if that information belongs to that user (as evidenced by holding the private key to the data). Moreover, Tink System is designed to allow users to prove rightful ownership and access user data when personal information is processed, giving the entire rights of rectification, erasure, and processing to individual users.

⑥The right to data portability

-Within Tink System, users can freely move their own information within the system. It is up to the users to transfer personal information, and when transfers occur to third parties, users receive Tink Token as a reward.

⑦The right to object

-Within Tink System, users reserve rights to deny processing of personal data and to decline receiving Tink Token rewards.

⑧Rights in relation to automated-decision making and profiling

-Within Tink System, users will determine and manage all settings regarding data management and curation (some settings could prevent users from receiving rewards).

2. Fraud Prevention Processes

Tink systematically removes entrance of malicious users

This part deals with user activities that harm Tink ecosystem including malevolent user account creation. Even today, existing SNS actually suffer from unnecessary social costs from malicious users, ghost user accounts, etc.

①Creation of Multiple Ghost Accounts within Tink System

-Within Tink System, ecosystem is energized by users with profiles that meet certain level of information quality; simply creating accounts will give users almost no benefit. Therefore, creating shallow multiple accounts by malevolent users is not quite effective. We will create our system so that users who actively participate in the ecosystem with their own accounts to gain activity points share most of the reward within the system.

②Malicious Users within Tink System

-Tink System will be designed to fundamentally block economic reward from malicious uses. Information on Tink System is first created by third parties, and it is impossible to input users' own data themselves. Tink System adopts indirect certification system, making it difficult for users to create information with certain intent. When users effortlessly input information without unreasonable intent, their information within Tink System will become more valuable.

3. Why Blockchain?

Within existing SNS, the central platforms effectively own users' profiles.

Tink will distribute the benefits to the individual who owns the profile.

In addition, the privacy of the information can be obtained because the information access settings are set by individuals. However, because only objective information needs to be added to the profile, we use block-chain technology to prevent intentional changes to user profiles.

4. Is Tink a SNS like Facebook?

No. We are based on a reliable accumulation of personal profiles in various aspects. Based on this profile, we will provide various functions such as communication between people and receiving personalized information. As a result, Tink can be LinkedIn, Facebook, Civic, or Google.

5. Is Tink a Reputation Platform?

At Tink, user reputation and evaluation have different characteristics. Tink only deals with positive qualitative data such as user merits and praise, and negative ratings and reputations are not added to user profiles.