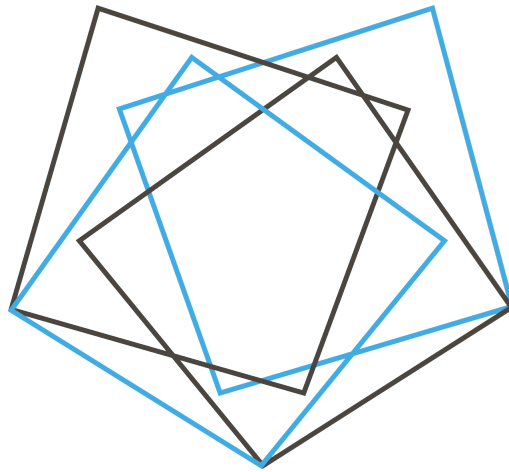


IRON BANK NETWORK



Decentralized Agreement Platform

v.2.0

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Abstract

The objective of this project is to implement a banking infrastructure without third parties or intermediaries. Blockchain users could self-manage themselves in order to supply their financial needs and raise capital in a free peer-to-peer frictionless environment.

Open-source and completely free.

`ironbank.network`

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1. Nature of Project

The iron Bank Network is a platform that enables peer-to-peer agreements and the creation of decentralized contracts and assets. Under this scheme, there is no central authority that defines the nature of the agreements.

Therefore, everyone could create financial relationships with each other around the world without regulatory frameworks or supervision. This freedom allows people to supply their financial needs by using a trustless and frictionless environment due to smart contracts. Thus, every user can make a deal with any counterpart within this network, known as peers, by creating financial assets and agreements; such as loans, donations, bets, automatic conditional transfers (ACT), or any kind of financial instrument. This ecosystem is possible through Solidity, an ethereum-based programming language.

Everyone can be both, a banker and a customer as every single user is able to create digital agreements and interact with them. Thus, is possible to create new ways of funding and decentralized services based on blockchain technology, changing how the depositors-borrowers scenario works. Get access to wealth was only possible by borrowing from huge institutions, such as banks, which gather large amount of financial resources. As they have the assets, they impose their rules. This project wants to banish this structure and brings funding worldwide through decentralized sources.

Hence, the goal of this project is to set a banking infrastructure without third parties or intermediaries. Therefore, the blockchain users can self-manage themselves in order to supply their financial needs, raise capital and spread wealth all over the world by helping early stage projects, communities or initiatives in a direct peer-to-peer frictionless environment. As such, this project is based on Ethereum and its long term goal is to implement our technology and infrastructure on top of the Ethereum Blockchain.

2. Decentralized Banking based on Agreements

Decentralized Banking can be defined as the ease to trade wealth and financial resources among a group of individuals without a central entity.

This banking model allows the creation of new financial relationships, products and entities in a decentralized way. Thus, every individual that holds assets can trade them properly according to its own interest and needs. This approach provides three main advantages: *Direct Cash Flow Swaps*, *Unbiased Financial Entities* and *Lower Systemic Risk*.

The first advantage, *Direct Cash Flow Swaps*, is defined as the ability to trade cash flows without a central entity or supervision. As a result, everyone can borrow from each other under flexible conditions.

The second one, *Unbiased Financial Entities*, refers to neutrality within the financial system. Nowadays may exist hidden interest behind certain loans and payments, mainly because of opacity, lack of control and centralization of wealth. This can be solved by simplifying wealth access. A clear example of this could be seen over any undeveloped economy, where the non-wealthy individuals try to get financing resources in order to set up a small business. Meanwhile, the current wealthy individuals would try to stop these newcomers from accessing financial resources. If these wealthy individual are coordinated enough, they could dismiss the newcomer initiatives by constraining the financial resources available. Although, the existence of a decentralized and open banking network may reduce these effects and bring welfare all over the world, no matter how small your economy would be.

Finally, the third one, *Lower Systemic Risk*, refers to how wealth is spread between many hands instead of a few, making finance more sustainable, as the risk of default is not longer concentrated within a small number of actors. Hence, financial resources are more diversified, heading to more stable and strong economies against crisis or defaults from central entities.

Therefore, the absence of central authorities or geographical jurisdictions makes this scheme a very flexible banking infrastructure that enables peer-to-peer agreements. As a result, this technology allows any user to send and receive funds under specific conditions settled within smart contracts. These features encourages more fair and transparent deals, enabling people around the world to get access to financial resources.

2.1. User-agreement Approach

Nowadays the world is more connected and its cash flows are global. There is no easy way for current financial architectures to manage this new situation apart from applying new regulation. Thus, the iron Bank Network aims to change this perspective through a free and open-source platform where these new decentralized relations will be developed under free markets conditions, not through regulation. Fig 2.1.

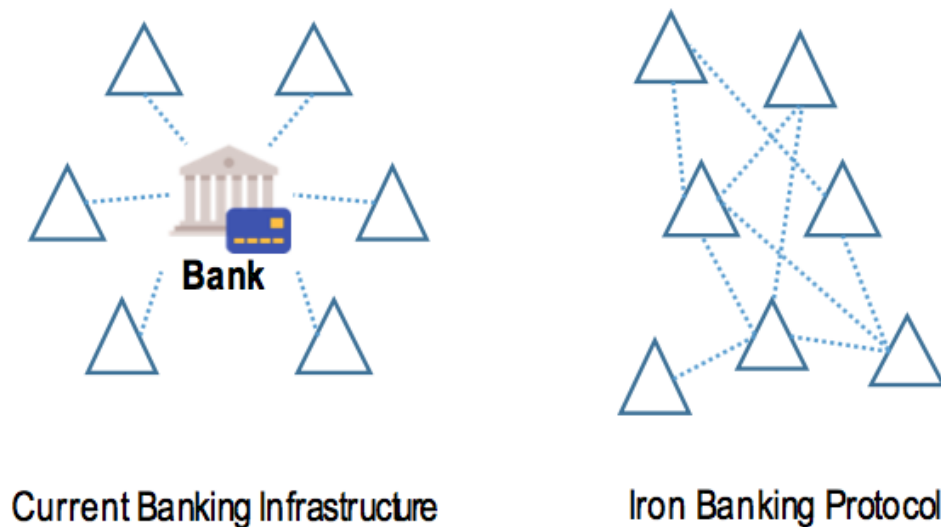


Fig 2.1 **Banking Infrastructure Comparison.** Source: Prepared.

Although, this architecture has drawbacks and may lead to bad use of this ecosystem by fulfilling unfair deals between counterparts. However, this feature can be solved through the principle of peer-to-peer agreement, which brings the ability to refuse unfair contracts made with bad faith. As the market makers are decentralized, everyone can take, or not, any agreement that satisfy its personalized financial needs.

Therefore, this project wants to prove that unsupervised markets are possible. However, a completely free market needs solid decentralized organizations as well as currency stability and consolidation schemes in case of non-performance agreements. Fortunately, there are further projects on

the space that try to solve these issues, creating decentralized organizations (@Aragon), or focusing on currency stability (@MakerDAO). As the project moves along, it is highly probable that different technologies merge in order to push a value-added product within the Ethereum Ecosystem.

Thus, our project will focus on decentralized agreements between users, creating smart contracts for this purpose and enhancing the community in order to meet the right agreement per user over the Blockchain.

2.1. Functionality and Properties

The blockchain technology allows us to establish direct relationships using smart contracts. For instance, you can create an individual loan contract through the iron platform. This environment provides immutable infrastructure where your agreement will lay securely in order to be executed by any other individual in the network. In other words, you will be part of a peer-to-peer banking system run by independent actors using smart contracts.

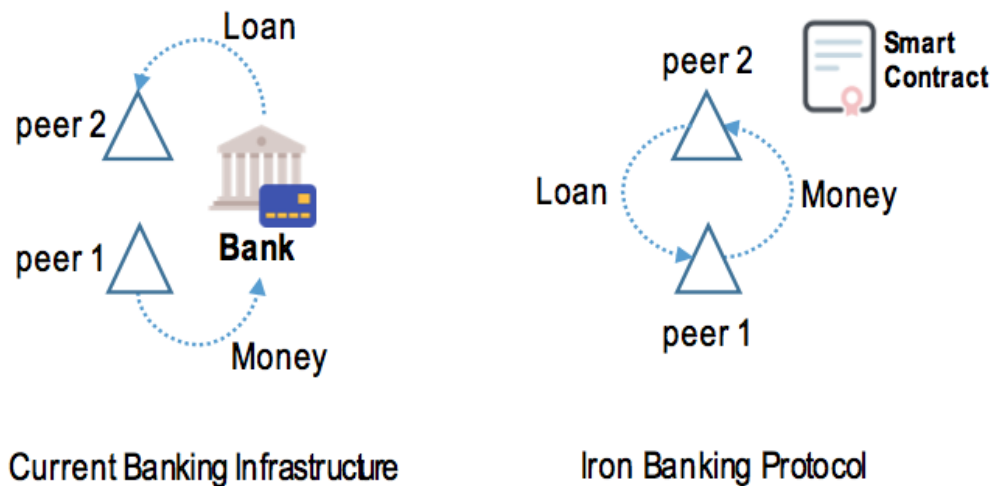


Fig 2.2 **Banking Functionality Comparison.** Current banking structure (left) and iron Agreement Platform (right). Source: Prepared.

As a result, you are able to find the right agreement according to your needs and current situation, all around the world. Fig 2.2

This approach is similar to how a regular bank operates nowadays, but decentralized. Any user has the power to decide where its financial resources are coming from, the conditions that come with it, as well as accept or decline offers according to personal interest. This scheme encourages the peers to offer the best possible option to the market, instead of force the consumer to take loans under certain conditions, as many banks do nowadays.

Hence, this scheme enables every user in the network to interact directly with the rest of the peers in a efficient frictionless environment. This is not only more flexible, but also more risk-free due to wealth diversification.

2.2. Main differences regarding current banking scheme

The main difference between our platform, Fig 2.2 (right) and the current banking system (left), resides in the nature of the financial relationship. For instance, today two individuals needs a third party to securely transfer funds and create a loan agreement. The nature of this behavior is based on trust, in particular the lack of trust between each peer in the transaction. The counterparts does not trust each other, neither the liability nor the fulfillment of the agreement previously specified. Thus, a financial third party becomes essential to secure the transaction.

On the other hand, the iron Bank Network can solve this lack of trust using smart contracts, which set the agreement into the blockchain, bringing immutability and executing the terms automatically when the conditions are met. As a result, once the agreement is deployed nothing can change it. All the contract specifications, time constraints and conditions will react automatically and autonomously without third parties interaction of any kind. This new paradigm allows more self-manage relationships between users. The main properties lays down on security, immutability and trust. Under these circumstances, decentralized agreements are possible.

To sum up, the peers in the network are the ones who create and accept these agreements according to their needs, strategies and circumstances. The number of agreements you can establish with other peers is unlimited. You can both interact with unknown partners around the globe, or perform secure agreements with local partners.

3. Smart Contract Ecosystem

The blockchain architecture is mainly based on public smart contracts that can be accessed by any peer in the network. These contracts can be created and executed by anyone, allowing users to set up agreements by their own. The development of these smart contracts ecosystem comes from the iron Bank team and contributors. The number of agreements available is always increasing, as new needs, projects and functionalities appear.

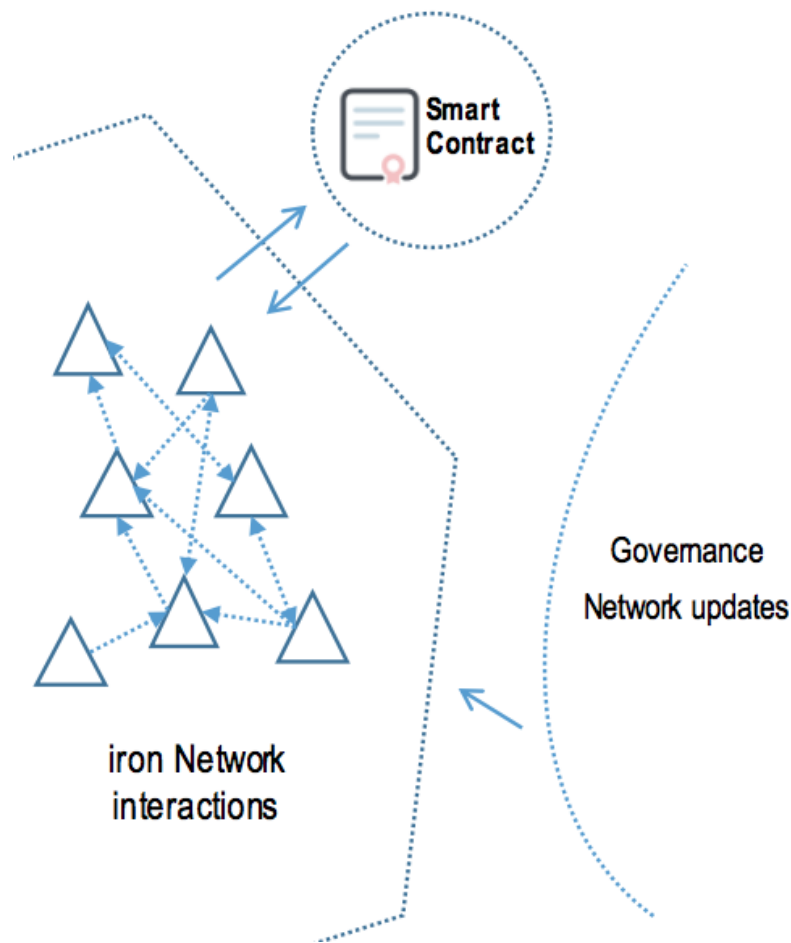


Fig 3.1 **iron Bank Network Ecosystem**. Source: Prepared.

Furthermore, this ecosystem will be developed in the main Ethereum blockchain. Our goal is to establish a solid and functional financial environment on top of Ethereum where everyone can fulfill its financial needs from other user in the network instead of looking to a central entity. Therefore, the iron project will be based on its own token (IRON), built on Ethereum. This token will define the governance of the network, future architecture changes and regular cash flows to the token holders. This will be explained in detail in section five of this paper.

3.1. Open Contract Development

The iron Bank Network is an open-source project. The development of the underneath smart contracts is the main mission of our team, but anyone can share its contribution to the network by releasing new contracts and functionality to the platform. As such, every version of this paper will include more functionalities and assets.

3.2. Smart Governance

Traditional banks usually play a crucial role in modern societies, due to their ability to transform liquid deposits into loans and further non-liquid assets. By doing this, banks generate liquidity for both depositors and borrowers, who are capable to pursue their investment or consumption plans.

The importance of this matter encourages governments and central financial institutions to regulate these relationships and set governance measures. This measures provides high benefits to final consumers, as banks have their influence attached to these set of rules and cannot put their interests above people's welfare. However, this amount of regulation becomes a burden under decentralized schemes, as the individual has neither enough power or influence to impose their conditions to the public. Therefore, a governance model based in smart contracts should be more convenient here, as the peers will be the ones who sets their conditions and demands as the situation requires.

3.3. Ethereum Infrastructure

A blockchain is a distributed and append-only database that provides a single shared source of cryptographically verified truth. This ensures that

the information inside will always be accessible, even if a central institution, government or any other third party tries to interfere. As long as Proof of Stake (PoS) infrastructure . However, nowadays the most effective and efficient blockchain is based on Proof-of-Work (PoW), this architectures can be obtained through a strong and large network that supplies computational power to fulfill transactions and contracts communications.

This goal has been achieved in many projects, Ethereum is one of them, and instead of setting a new blockchain from scratch, the logical path is to develop on top of the Ethereum network, taking advantage of all positive scale effects, as our goal is focused on smart contracts development.

4. Smart Contracts development Toolkit

4.1. iron Decentralized Application (DAPP)

As our project is geared towards the Ethereum technology and its community, we have proposed to develop and test our contracts functionality within local private networks. For this matter, we have developed a Decentralized Application (DAPP) that will serve as a intuitive front-end window to interact with the iron Bank Network and its smart contracts. A ready-to-use version of this platform is available at [github](#) for all computer systems (MacOS, Windows and Linux). Further versions and improvements will be released periodically.

4.2. iron Protocol Client

Our team has developed a Go client (go-IRON), based on Geth, where contributors and advanced users may implement the smart contracts and test them under certain conditions, it is even possible to modify the protocol if necessary. On the other hand, regular users can use Truffle tools, such as Ganache, to easily create private local networks to test smart contracts, or just play with the platform. These tools are essential, as users can start using the platform and its Dapp since minute one. The financial agreements will take place on these environments until the official release on Ethereum.

5. The iron Bank Network Token (IRON)

The iron token holders will be in charge of network governance and future updates, having the power to vote and perform an active role regarding network decisions. Moreover, they will receive benefits from contract fees.

5.1. Token Model

The iron Bank Project will be free to use for everyone. This means that our network token (IRON) will not be necessary to interact with the platform. In fact, the final objective is to implement all our contracts and assets generated during this project directly into the Main Ethereum Network. Then, all the transactions and agreements will be carry out using Ethereum token (ETH). Our final goal is based on generate true value to the Ethereum ecosystem, allowing all the blockchain users to deploy solid, secure and tested financial agreements. This could not be possible without currency normalization, as using different currencies for every service just makes no sense at all.

Thus, the underneath reason to employ a custom token (IRON) is to create a community around it. The objective is to group and unify the best possible code towards the largest amount of users, similar to what a shopping center does in a town, it basically gathers bunch of people in the same space for the same reason, satisfy a need. Here at the iron Bank Network we want to be the community that unifies the financial transaction software and its active users, in order to become a useful piece within the Ethereum ecosystem and be used by the entire community. To enhance this feeling, every contract implemented by our project will implement a fee, a community fee that will be distributed between all the token holders periodically. This measure ensures them to hold their tokens and perform an actual role in the development of this project.

5.2. Platform Token Kickstart

To kickstart the iron Bank Network platform, a limited number of IRON tokens will be sold based on a price model that increases over time.

The capital obtained from the initial sale will be transferred to the iron Bank Network to finance the development of smart contracts using our pre-developed decentralized application (Dapp) and its client (go-IRON), in order

to provide secure, sustainable and efficient smart contracts written in Solidity, making a value-added decentralized banking system on top of the Ethereum.

5.3. Token Technical Features

The IRON token will be based on ERC20 standard with certain modifications, to allow voting power to holders and built-in community fee distribution scheme.

5.4. Uses and Benefits for Token Holders

To become an ecosystem beacon regarding financial agreements on Ethereum, the iron holders will receive certain benefits for holding their tokens. The main advantage that holders will enjoy is the voting power that every token provides regarding project updates and infrastructure. Besides, IRON holders will receive a fix percentage of community fees collected over the iron smart contracts. This scheme will be deployed once the platform is officially released on the main Ethereum network on regular basis.

5.5. Future Token Milestones

The Ethereum ecosystem needs certain currency stability to ensure that long term agreements do not either reduces or increase its underneath value sharply. A solution would be to stablsh certain collateral value, similar to what gold-standard did for the global financial system until the Bretton-Woods agreements. This collateral should ensure that ETH tokens maintains its purchasing power inside the network. Further projects are currently working on this issue (@MakerDAO), but probably the scope of our project will reach interest on this matter in the future, as to ensure long term agreements a certain level of stability is required.

This idea comes directly from economics. According to gold-standard, to obtain a stable and non-volatile exchange of value the currency needs to be attached to a collateral asset, which makes the underneath value of a currency stable. This property makes the currency independent about what happens regarding collateral fluctuations.

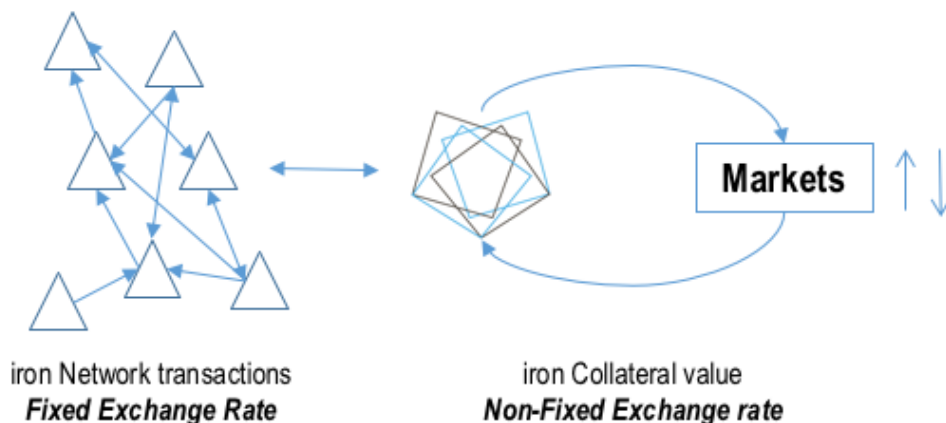


Fig 5.1 **iron Collateral Structure**. This system allows stable transactions in the network whereas the underneath value of the token has a market price. Future milestone. Source: Prepared.

6. Summary

To summarize, the iron Bank Network is a decentralized agreement platform that allows users to create and manage their financial needs through smart contracts. These agreements take place directly between users, without third parties or intermediaries. Thus, the main goal of this project is to provide secure, sustainable and efficient smart contracts on top of Ethereum written in solidity. In order to reach this goal, both a blockchain go-client and its Decentralized application (DAPP) are supplied to run and interact with the blockchain respectively.

The iron tokens will be created on top of the Ethereum network as ERC20 standard and will be spread around the community. The tokens holders are allowed to participate in the governance of the platform, such as voting for updates or infrastructure changes. Furthermore, these holders will receive regular cash flows in ETH from the community fees included in the Smart Contracts, once the project is fully integrated on the Ethereum main network.

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