



FINANCE BLOCKS

# White Paper

Credit Access, Transparency, &  
Financial Inclusion

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# 1.0 Executive Summary

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Despite all the infrastructural and technological developments in the financial sector globally, 25% of the world's total population still does not have access to basic financial services such as bank accounts. This population relies on informal financial systems such as moneylenders and pawnbrokers or cooperative credit societies and rural financial institutions (RFIs) to access credit in times of need.

Informal moneylenders and pawnbrokers, who often give credit without demanding collateral, may set exploitative terms of repayment, pushing the rural poor into a vortex of debt and poverty. Cooperative Credit Societies and RFIs, while they are formed with the aim to promote financial inclusion among the unbanked, are limited in their scope and impact by factors such as insufficient resources, corruption and mismanagement.

Furthermore, lack of identity documents, credit scores, and awareness about financial products and services, are an impediment to rural consumers availing credit opportunities and prevent RFIs from maximizing their potential. The complexity of procedures for accessing these solutions combined with slow and inefficient legacy systems further aggravate the problem.

To combat these problems in rural economies, Finance Blocks has developed a blockchain powered product that will serve both RFIs and the unbanked.

For RFIs, Finance Blocks has developed a platform that will help them switch from paper-based legacy systems to a secure, easy-to-use, and efficient digital system for all their processes. RFIs will be able to create unique digital identities for all their customers, compute their credit scores, manage their financial data, loans, FDs, savings accounts and more on a single platform. They will also be able to amplify the reach of their products and services with the in-built marketing functionalities of the dashboard.



For users, Finance Blocks has an app that will help them stay updated about their financial activity such as withdrawals, deposits, transactions, loan EMIs, and interest on FDs. The app will provide instantaneous updates about any changes that occur to their accounts with RFIs. The app will also report information about new financial products and services relevant to the needs of the users. Based on the age of their account and financial activity, users will be given Smart Credit Scores computed by blockchain-powered Smart Contracts.

Blockchain technology is an integral component of the solution Finance Blocks presents. The role of the platform is to enable immutable recording of all transaction data, ensuring transparency and accountability. This will enhance the efficiency of operations by automating banking processes. The use of a blockchain will also enable RFIs to interact and transact with other members on the Finance Blocks platform in a seamless and secure manner.

With the Finance Blocks platform and app, providing financial inclusion to the unbanked and helping them achieve upward economic mobility will not be just an abstract idea. It will be turned into a tangible reality when rural users have the right financial tools in their hands and RFIs are empowered with the resources and infrastructure to achieve their aims.

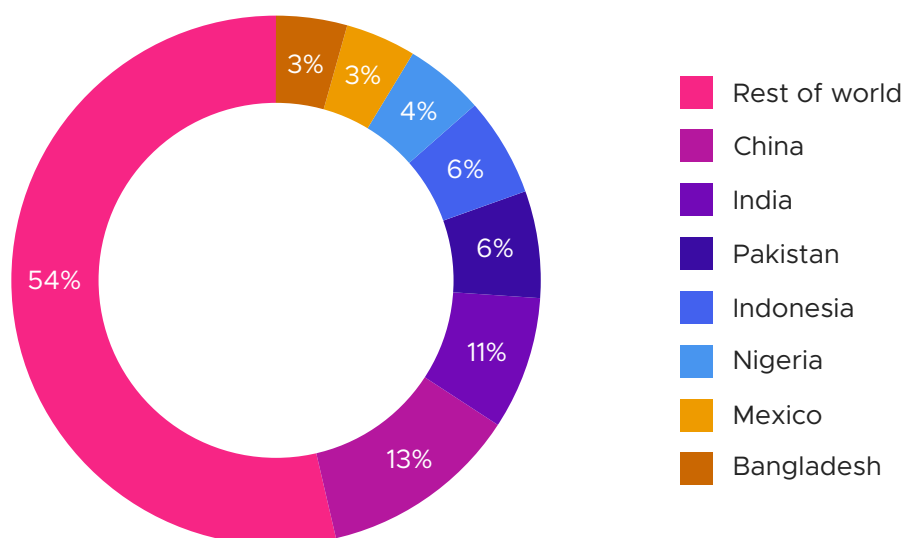


## 2.0 Rural Population and Financial Services

In 2021, nearly 3.4 billion people reside in rural areas, which is 45% of the world's population. Out of this, nearly 1.7 billion people, accounting for 50% of the rural population, do not have access to basic financial services such as banking. This segment of the population is called "the unbanked".

According to a World Bank report, nearly half of the world's unbanked population is concentrated in 7 economies.

Adults without an account by economy (%), 2017



As per the report, with 225 million unbanked adults, China has 13% of the world's unbanked population. India, with 190 million unbanked adults, accounts for 11% of the world's unbanked. Pakistan and Indonesia, with 100 million and 95 million unbanked adults respectively, make up 12% of the world's population without bank accounts. Nigeria, Mexico and Bangladesh follow on this list with the highest number of adults without access to financial services.

In the absence of banking access, rural communities, especially in Low-to-Middle-Income Countries (LMICs) across the world, have developed their own informal financial systems. People in these communities are usually engaged in agriculture, dairy farming, fishing or other forms of self-employment, and they often turn to these informal financial systems for availing credit. For example, in Asia - indigenous/informal financial institutions such as the curb market in Korea, the Corporate Societies in India and Chit-funds in Thailand offer financial services to the unbanked in huge volumes.

In Africa, the predominant form of indigenous financial institutions are the rotating savings and credit associations, called Ekub in Ethiopia, Djanggi in Cameroon, Tontine in Benin, Chilemba in Malawi, Uganda, Zambia and Zimbabwe, Esusu from Zaire to Liberia and Stokvels in South Africa. Some of these informal creditors, such as moneylenders or pawnbrokers, often exploit borrowers with high rates of compound interest on the principal amount. New borrowers without adequate collateral or income are commonly denied credit extensions. Such exploitative and exclusionary financial systems, instead of enabling upward financial mobility, push the rural population into a never ending vortex of debt, unemployment and poverty.

There are Credit Societies across the world that are playing crucial roles in lifting up underprivileged and marginalized communities by emphasizing socio-economic development. However, the scope and extent of their contributions to economic growth is restricted by factors such as inefficient management and corruption.

The following is a brief overview of Credit Societies around the world -



**India** - In India, agricultural credit societies have been formed to facilitate quick loans on fair conditions to the rural community. While this financial system has strong potential to relieve the underserved from exploitation by moneylenders, lack of agile management and corporate governance has kept it from achieving ideal expectations.



**Sri Lanka** - In Sri Lanka, the credit societies known as SANASA have attained good reputation and built trust through ground level community connection. Flexibility, sharp-focus, and institutional structure sans political intervention or bureaucracy are key factors that have helped SANASA make significant contributions to rural development.



**Bangladesh** - In Bangladesh, though several credit societies have helped rural sectors including agriculture and dairy farming, most of them are ineffective in achieving their objectives. This is due to lack of professional management, frequent conflicts between members, political interference, limited supply of capital and biased allocation of resources.



**South Africa** - In South Africa, some credit societies have achieved tangible success in minimizing poverty levels among communities. Most however, are unable to function optimally due to several factors. Outdated technology becomes a performance barrier and keeps them from realizing their goals. Furthermore, the lack of trained and qualified talent in such societies has resulted in substandard services and mismanagement.



**South America** - In South America, some credit societies have achieved tangible success in minimizing poverty levels among communities, but most are unable to function optimally due to several factors. Outdated technology becomes a performance barrier and keeps them from realizing their goals. Furthermore, the lack of trained and qualified talent in such societies has resulted in substandard services and mismanagement.

Thus, Financial exclusion of the rural population, caused by the lack of easy access to financial services, and exacerbated by inadequate and exploitative informal financial systems, is one of the major reasons for slow and uneven economic growth across LMICs.



# 3.0 Challenges to Financial Inclusion

Financial inclusion, in the context of rural population, refers to providing easy access to financial solutions that enable sustainable growth. Solutions include bank accounts, savings schemes and short-term and long-term credit. All of these solutions could be made accessible to the target population via banks and formal financial institutions. However, several obstacles stand between the unbanked and the financial inclusion that could be fostered by financial institutions.



## **Lack of banks and financial institutions -**

The localized economies of rural populations are often insufficient in size to incentivize setting up banks and financial institutions that will cater to them. In many countries, a single bank in a fixed location services several rural communities. The physical distance between the bank and a rural consumer coupled with the lack of convenient and affordable transportation options may discourage the consumer from availing the bank's services.



### **Limitations of existing rural financial institutions -**

Not all rural areas are underserved because of the absence of banks and financial institutions. Apart from credit cooperative societies, many rural areas have cooperative and rural banks, financial support schemes run by local post offices and other governmental institutions for promoting financial inclusion. These rural financial institutions (RFIs) offer an array of products and services to the rural poor including subsidized low-interest loans, crop insurance, provident funds and saving schemes. These bridge the gap between service providers and beneficiaries. However, these RFIs face several challenges including poor policy and regulatory framework, scarcity of financial resources, lack of information and awareness on financial matters, missing stakeholder participation, absence of diversified rural financial infrastructure, growing overdues, inadequate trust among stakeholders caused by paucity of transparency and accountability, and non-cooperation between the RFIs and customers, which prevent them from achieving their potential.



### **Lack of identity documents -**

Identity verification is an important step in availing financial services such as opening a bank account and availing loan facilities. The rural poor in LMICs often have inadequate identity documents or no identity documents at all, which prevents them from completing the identity verification procedures mandated by financial institutions and the government. For financial institutions, compliance with identity verification norms is a requisite, and without it, they are unable to extend their offerings to consumers.



### **Lack of credit histories -**

To sanction credit, a financial organization requires the applicant to prove a positive credit history. Majority of the rural population lacks documented credit history, which becomes an obstacle for them in obtaining loans. The irregularity of income and absence of income-related documents, further reduces their chances of availing credit. Without documents to prove their credit histories and incomes, the rural poor are obstructed from availing financial support in times of need. This situation is not only unfavorable for credit seekers, but it also affects RFIs adversely as they may lose the opportunity for business. In fact, RFIs should be looking to promote economic development and financial inclusion in rural communities as opposed to the current market scenario. Furthermore, it may even lead the RFIs to a point where they are unable to sustain their operations.



### **Lack of education and awareness among consumers -**

Rural consumers that have been using traditional rural financial systems are often unaware of the existence and availability of solutions offered by banks and formal financial institutions. When consumers are presented with information related to the solutions in the form of pamphlets and brochures, often their illiteracy and lack of education may prevent them from comprehending the benefits of switching to these products and services. On the other hand, financial institutions do not have the budget, resources, and strategies for marketing their solutions to the rural sector effectively.



### **Complexity of systems -**

From opening a bank account to making a deposit to applying for a loan, every process of traditional banking involves filing forms, verifying identity, and submitting documents. Even when presented with opportunities to avail the products and services of formal financial institutions, many rural consumers find it difficult to perform the complex, time-consuming and paperwork heavy procedures associated with them.



### **Lack of digitization in legacy systems -**

Digitization in most RFIs is still in its infancy when compared to the modern banking systems. Even today, they rely on outmoded legacy software. Such software has limited capabilities, making it hard for the RFIs to operate efficiently. The older systems are often incompatible with the modern systems, creating serious operational issues. For example, moving data from legacy systems to modern software is a tedious, time-consuming process prone to errors. In several legacy systems CUI (character user interface) is the only medium of instruction. In many areas, data is still recorded using pen and paper, before being fed into the computer by a data entry operator. This process is not just lengthy but inefficient as well and susceptible to human errors. Furthermore, most RFIs do not have web-based applications for consumers to make it easier and more convenient for them to access and utilize their products and services.

# 4.0 Proposed Solution

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The COVID-19 pandemic has wittingly or unwittingly turned into a powerful booster of digital financial services around the world. Throughout 2020, a substantial number of new accounts were created worldwide that were equipped with mobile monetary, fintech, and online banking services. Growth in internet usage, smartphone penetration, and easy-to-setup-and-use financial apps has led to the rise of cashless societies. Bearing in mind the challenges due to Covid-19, Finance Blocks offers key features for our customers and RFIs like our mobile application, domain name and dashboard creation to facilitate contactless banking operations.

This wave of digitization has been concentrated in largely urban areas, while its flow to rural areas has been limited. However, rural areas were not intentionally ignored from financial initiatives and stimulus packages rolled out by governments for lifting up the pandemic hit sectors. Several LMICs brought out specially tailored stimulus initiatives for rural areas.

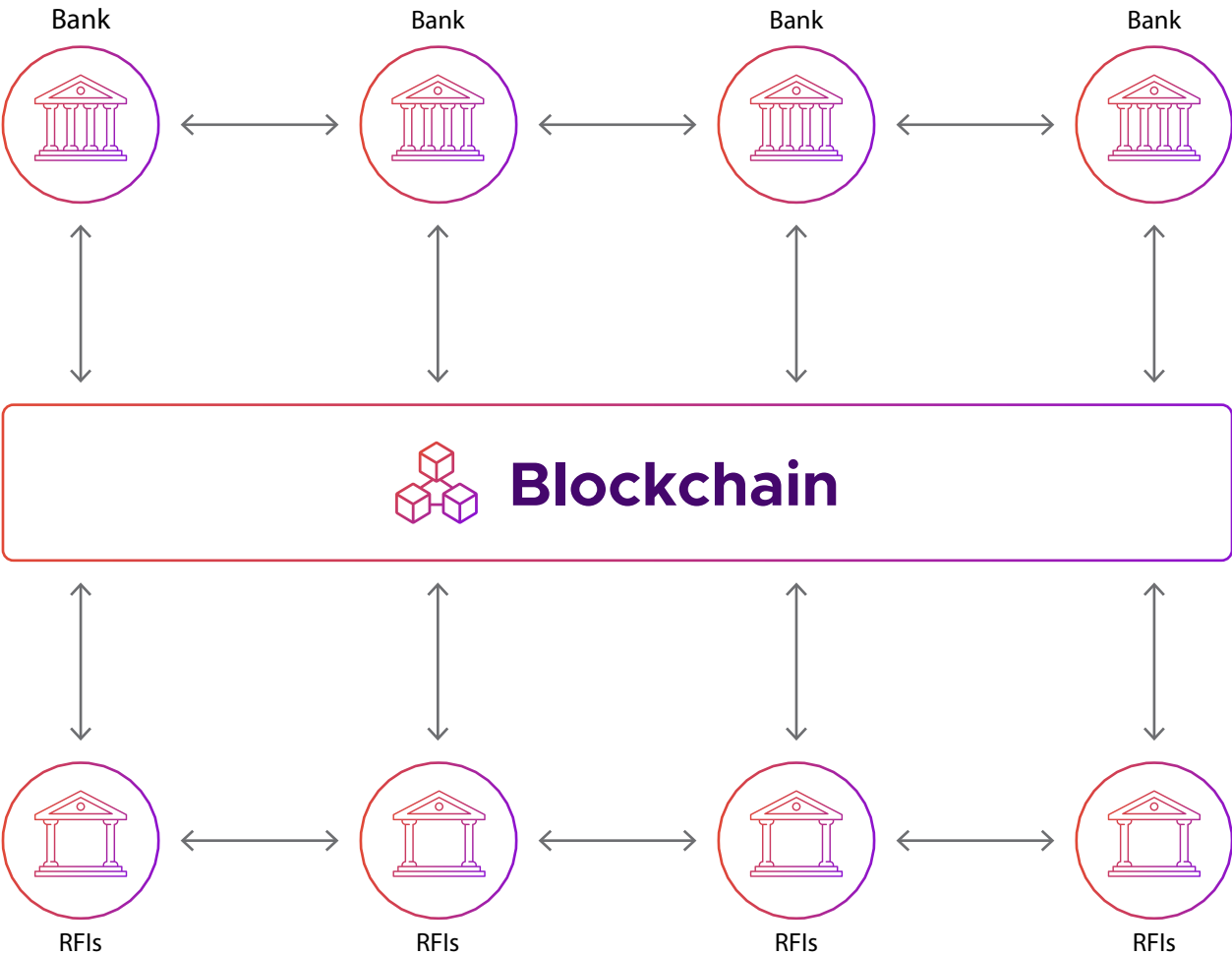
For instance, in India, in order to promote formal lending institutions, several methods of procedural simplification have been introduced for delivering credit that involve rationalization of internal returns for banks. A greater autonomy has been delegated at lower levels of lending institutions to regional branch managers to aid acceleration of the credit flow in rural India. In Bhutan, the government extended soft loans to agriculture and cottage industries at interest rates as low as 2%. In Myanmar, the government allocated nearly \$50 million USD towards spending programs to support rural and agriculture sectors. However, the impact of these financial initiatives were limited by the gap between the rural population and the infrastructure that would have enabled them to access this aid.

In promoting financial inclusion of the rural population, a twin-pronged approach focusing on the development of both physical and digital infrastructures will be effective. The development of banks and credit institutions in rural areas will play a key role in providing convenient access to financial support, financial stability, liquidity, and security of the rural population.



Along with banking the rural population, the provision of a robust digital infrastructure in rural communities will ensure consumers can access information easily. Solutions and financial services such as loans and savings schemes can be correlated, even when there are restrictions on mobility and in-person interactions.

This development of digital infrastructure will bring together RFIs and the rural communities in a mutually beneficial relationship. Finance Blocks is aiming to play a transformational role in the development of this process.



## 4.1 Finance Blocks - A Comprehensive Blockchain Powered Platform for Powering Rural Finance

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Finance Blocks is driven to provide a secure, sustainable, and comprehensive solution aimed at facilitating upward social mobility of rural consumers and enabling RFIs to amplify the reach of their products and services. Our solution utilizes innovative cutting-edge technologies to raise the living standards for the rural population through economic and monetary empowerment in accordance with government financing policies and initiatives.

For RFIs, Finance Blocks has a digital platform for managing customer data, recording account activity, verifying identity and credit worthiness seamlessly and securely. This translates into greater productivity and competence for RFIs, which allows them to play a greater role in deploying current financial initiatives.

For rural consumers, Finance Blocks has an app which allows users to stay updated on the status of their finances and the latest financial products. The app notifies users about account transactions, available balances, and upcoming payments. In the future, the application will enable rural consumers to apply for competitive rural credit opportunities along with a host of other financial services.

## 4.2 Why Now?

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Technological advancements over the years have transformed the global economy and the way in which the world interacts. These advancements have changed the way financial services are delivered by financial institutions and consumed.

Finance Blocks is developing a technology backed rural financing ecosystem, which can take credit closer to the underserved in a safe, sustainable and affordable manner, bolstering the global rural economy worth trillions of dollars.





## Better global internet connectivity

Internet usage has seen phenomenal growth over the last few decades. From just 413 million internet users in 2000, the number of users soared to 3.4 billion in 2016 and in 2021, this figure reached 4.66 billion, accounting for nearly 60% of the world population. The USA, China, India, Indonesia, Brazil, Nigeria, Japan and Russia recorded the highest number of internet users. However, internet penetration is the highest in Denmark, UAE, UK, South Korea, Sweden, Switzerland, Netherlands, Saudi Arabia, Germany and Canada.



## Smartphone penetration

From 3.6 billion smartphone users in 2016, the figures have nearly doubled and reached 6.3 billion smartphone users in 2021. This means nearly 80% of the world is using smartphones in 2021. The USA, China, and India have the highest number of smartphone users. As per forecasts, this number is expected to grow to 7.5 billion by 2026.



## Growth of the fintech sector

The term “fintech” encompasses technological innovations that aim to complement or replace traditional financial methods to improve user experience. The fintech market, fueled by increasing internet connectivity and smartphone penetration, is projected to be worth \$161.2 billion by 2026, growing at a CAGR of 8.7% from 2021 to 2026. As per Google, 73% of smartphone users have used a financial services app in August 2021. This is good news for upcoming fintech apps as they have a ready market that is familiar with such products.





## Developments in blockchain technology

Blockchain has come a long way from being just a technology that powered Bitcoin. Nowadays, it is being explored and customized for applications such as peer-to-peer transactions, data storage, smart contracts, and more. From 7 transactions per second (TPS) on the Bitcoin blockchain, modern blockchains can handle up to 1000+ transactions per second while providing greater security and cost-effectiveness than traditional transaction systems. The disruptive potential of blockchain technology is poised to transform the fintech industry in more ways than one.

With the current market scenario, the time is ripe for Finance Blocks to develop and roll out its solution. Current factors within the market are working in favor of making the vision of transforming rural economies into a feasible idea.

## 4.3 Key Features and Functionalities of Finance Blocks' Platform and App for RFIs and Users

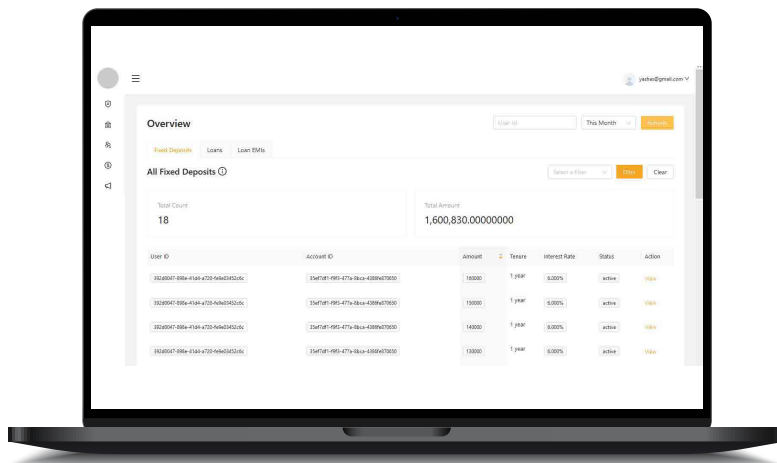
Finance Blocks' platform and app has been designed and developed by visionary leaders, engineering technologists, and finance experts who bring years of experience and in-depth understanding of rural economies and financial expertise. Combining technological sophistication with an empathy for the unbanked and cognizance of the problems faced by RFIs, the solution has features that can transform banking operations in rural areas.

Developed for the purpose of serving both RFIs and rural consumers, Finance Blocks combines revolutionary blockchain technology with banking and credit frameworks to accelerate the process of credit loan sanctions and inspection of documentation while maintaining the highest level of security, transparency and ease of accessibility between lenders and borrowers.



Finance Blocks has separate interfaces for the RFIs and users, designed to serve their needs. The following are the features of Finance Blocks' platform and app for RFIs and users.

## 4.3.1 Finance Blocks' Platform for RFIs



### 1. Personalized Domain Name and Dashboard

Every financial institution that adopts the Finance Blocks platform gets a unique domain name and dashboard. Simplified search command on the dashboard gives institutions access to the financial data of their users such as their KYC information, account balance, credit score, deposits, withdrawals, transaction history and ongoing loans.

### 2. User identity smart contract

When a new user registers an account at a Finance Blocks affiliated RFI, a user identity smart contract will kick into action. With the user's identity documents in place, our solution then creates a unique digital identity for the user. The platform connects seamlessly with national identity systems and offers a secure repository for user identification data on the blockchain. This is a one-time process, and the financial institution will be able to use this digital identity for faster identity verification in future processes. The ID match of the applicant will be sufficient for performing subsequent KYC processes, which will reduce paperwork and the time involved for both RFIs and consumers. This digital identity will also be shared with other Finance Blocks affiliated RFIs if the user seeks a financial service that requires KYC.

### **3. Immutable real-time data documentation**

With the Finance Blocks' platform, processes performed in relation to a particular user or their account such as a KYC verification, loan approval, deposit, withdrawal, or transaction will be recorded immutably in an encrypted form on the blockchain and updated on the RFI's dashboard and the user app in real time. This reduces paperwork and associated costs for RFIs, saves time, and makes the process of data recording immune to human errors. Blockchain technology's robust security features ensure that the data recorded is tamper-proof.

### **4. Convenient Tracking of Users' Account Activity**

Currently, RFIs still operate using Excel spreadsheets or physical paper books to maintain records. This process is not just time consuming and expensive, but highly susceptible to errors. Paper based documents are not just vulnerable to being tampered with, but risk being lost or destroyed. Finance Blocks solves this problem by providing RFIs with a simplified digital interface that allows them to track and monitor activity associated with users' accounts such as deposits, withdrawals and transactions. The activity details also include the name of the agent that conducted the process, thus ensuring enhanced accountability.

### **5. Credit Score Smart Contract**

RFIs affiliated with Finance Blocks are able to access the platform's credit score service which uses smart contracts for computing the credit scores of users. The Smart Credit Score score includes information such as the age of the users' accounts, nature of transactions, number of transactions, and timeliness of payments for computation. The credit score is updated regularly based on the financial behavior of the user. Finance Blocks affiliated RFIs can also access this credit score if a user goes to them for obtaining a loan.

### **6. Access to User Analytics**

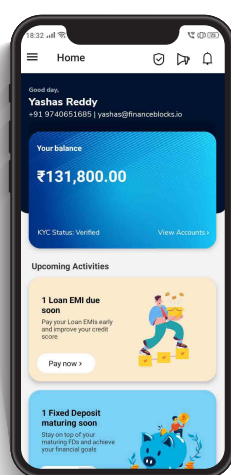
In the current market, managers of RFIs rely on their knowledge and experience to arrive at business decisions that, if done improperly, can cause the RFI heavy losses. Therefore, there is a need for embracing analytics to drive decision-making, improving efficiency and reducing risks. Finance Blocks' platform can be used for feeding data to user analytics software, which will provide important insights to help RFIs to make informed decisions regarding business, mitigate risk, and design solutions that are aligned with emerging market trends.



## 7. Digital Marketing Support

Most RFIs do not possess the operational budget nor the resources for marketing activities, this often results in lost business opportunities. With Finance Blocks, RFIs can market their products and services at an affordable cost in the form of messages and notifications sent to their users. This will benefit the RFIs by boosting the overall reach of their solutions thus generating more business.

## 4.3.2 Finance Blocks' App for Users



### 1. Immutable record of all their account activity

Currently, users have to go to the bank to get their passbooks updated for keeping a record of account activity. But, with the Finance Blocks' app, this changes. Any time a user or bank employee performs any action related to the user or their account, it is reflected on Finance Blocks user app in a read-only format in real-time. Thus, users always have access to their account activity. Since this information is recorded immutably on blockchain, it is impossible for anyone to tamper with it.

### 2. Timely notifications and reminders

The app continuously updates the status of various financial processes in real-time and notifies users of any changes that may occur to their status. For example, if a user has applied for a loan, they will no longer have to visit the institution to find out if it has been approved. Users will be notified of the loan approval as soon as the RFI updates it on their dashboard. Furthermore, the app sends timely reminders to users about upcoming events such as EMI payments, recurring deposit auto-debit payments, etc.



### **3. Easy access to product information**

Many rural consumers, when in need of credit, often fall prey to predatory financial services such as informal moneylenders and pawnbrokers. This is often due to lack of awareness about government approved low-interest rate credit initiatives that offer reasonable terms and conditions. With the Finance Blocks app, users will be informed about such initiatives and the process to avail them from the RFIs. Users will receive in-app notifications which will direct them to easy to understand PDFs or Youtube videos in their regional language, to assist in understanding the offerings and eligibility requirements involved in availing these solutions.

### **4. Simplified KYC processes**

Submitting physical documents every time a user wants to apply for a loan, open a fixed deposit, or buy insurance can be a timely and frustrating process. With Finance Blocks, users have to submit physical documents for KYC only once, and that is at the time of opening a new bank account at a Finance Blocks affiliated RFI. From then on, the user will have to share only their identity document number or phone number linked to their bank account for KYC, and the process will be completed automatically within minutes.

### **5. Simplified access to credit offerings with credit score**

One of the biggest hurdles in the way of rural users obtaining a loan from a formal financial institution is their lack of credit history or credit score. With Finance Blocks, all of the financial activity taking place in users accounts such as deposits, withdrawals, transactions and savings contributes to the calculation of a Smart Credit Score. For users, this will assist in availing a loan from any RFI affiliated with Finance Blocks.



## 4.4 Technology Overview

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The following sections explain the technical architecture behind the Finance Blocks platform, focusing on how blockchain technology plays an integral role in lending robust security and efficiency.

### 4.4.1 Conceptual Description

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#### Conceptual Description

Blockchain is a type of distributed ledger technology, and one of its most important applications, apart from powering peer-to-peer transactions, is acting as a database that has decentralized ownership and is replicated and synchronized across the systems of all members on the network.

Blockchain differs from centralized repositories in that it decentralizes the source of trust. An individual deposits funds into a digital wallet, the new value of the wallet is recorded on the blockchain. If this individual makes a purchase using the funds in their wallet, the transaction is recorded on the blockchain along with the change in the level of funds in the digital account. The bank is not required as a trusted third party to facilitate transactions. The record is documented on the blockchain and all the parties on the network are notified about the change simultaneously.

### 4.4.2 Technical Description

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#### Technical Description

Transactional data of each party, or node, on a blockchain network is replicated and stored across every copy of the blockchain, and that is why it is also known as a distributed ledger. Conflicts, or inaccuracies within the database, are automatically resolved with predefined ledger rules. The fundamental characteristics of the distributed ledger include:



- Operation with peer-to-peer networks
- Decentralized record keeping
- Consensus or trust-based transactions
- Tamper resistance

Blockchains, while similar to databases, are not used for general data storage, but rather hold information about transactions in an encrypted form. The process of this encryption is called hashing, in which transactions are encoded into an irreversible fixed size value. Sometimes the blockchain will contain the transactions themselves or may include the proof of a transaction.

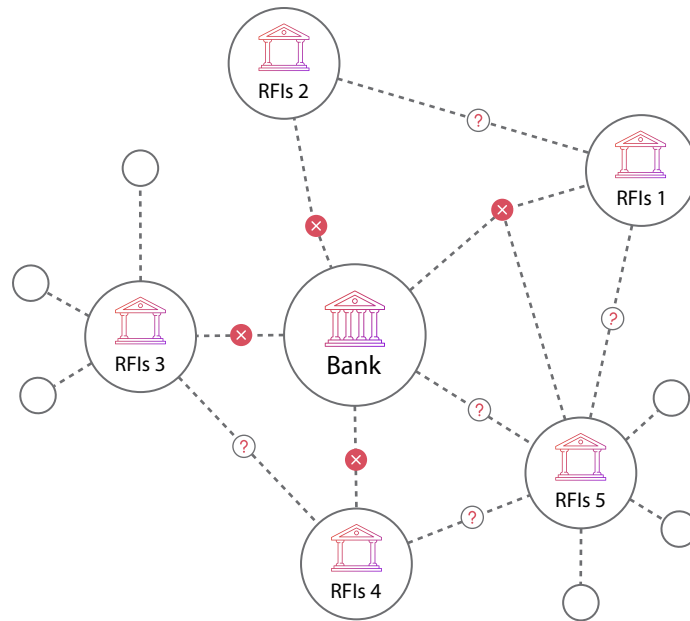
## 4.4.3 The Role of Blockchain

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### **The Role of Blockchain**

Currently, RFIs operate to serve the unbanked, but are limited in potential by lack of transparency, time consuming paper-based processes, complex identity verification procedures, and inefficient legacy systems. Since many of the unbanked open their first bank account with RFIs that are not connected to one another or to a nationalized banking system, their financial footprint remains low. Oftentimes, because of this lack of connectivity the unbanked are unable to obtain a credit score, which prevents them from becoming eligible for loans in the future from other financial institutions.



In Finance Blocks' solution, blockchain aims to solve all of these pain points of RFIs and users.

Finance Blocks utilizes a trustless network built on top of ethereum and polygon that helps RFIs digitize their processes and maximize their efficiency, and enables the unbanked to build their smart credit score. The use of blockchain technology lends the following features to our solution -

**Transactional transparency -**

All transaction data will be hashed and stored on blockchain.

**Unique universal identity and a smart credit score -**

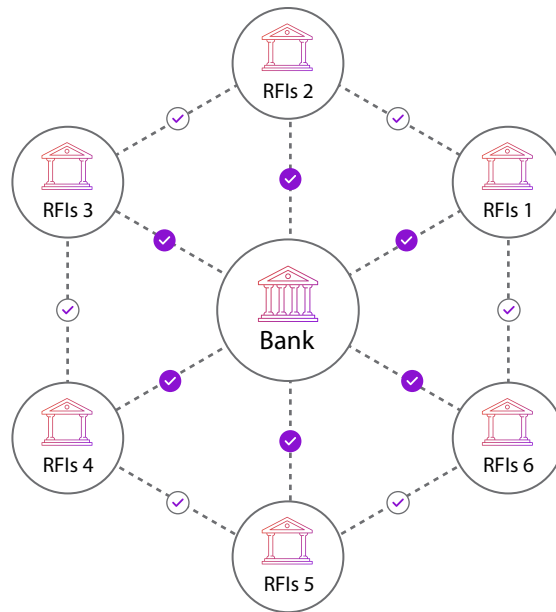
Blockchain powered smart contracts will enable the creation of a unique digital identity backed by KYC documents and computation of a credit score for every user.

**Interoperability protocol for exchanging messages and information -** Blockchain protocol will allow banks in the network to communicate with one another and exchange data such as credit scores of users in a secure, peer-to-peer manner.

**Trustless, instantaneous, cost-effective payments across banking institutions -** Banks and financial institutions on the network will be able to conduct trustless, peer-to-peer transactions without any intermediaries incurring a very small cost called gas.







With the Finance Blocks protocol, RFIs can communicate with and transfer data to other RFIs and nationalized banks in an efficient and reliable manner. RFIs can make real time banking decisions based on smart credit score and unique identity calculated by the Finance Blocks protocol. To power these operations, Finance Blocks leverages the Ethereum and Polygon networks. These blockchain protocols offer the following advantages -



### Security

A proof of work validation on blockchain makes the data record immutable.



### Scalability

A dedicated blockchain for finance equipped with a scalable consensus algorithm.



### Sovereignty

Dedicated throughout all transactional needs using Polygon.



### Interoperability

The blockchain protocol has support for messaging and data sharing and bridge to external systems.



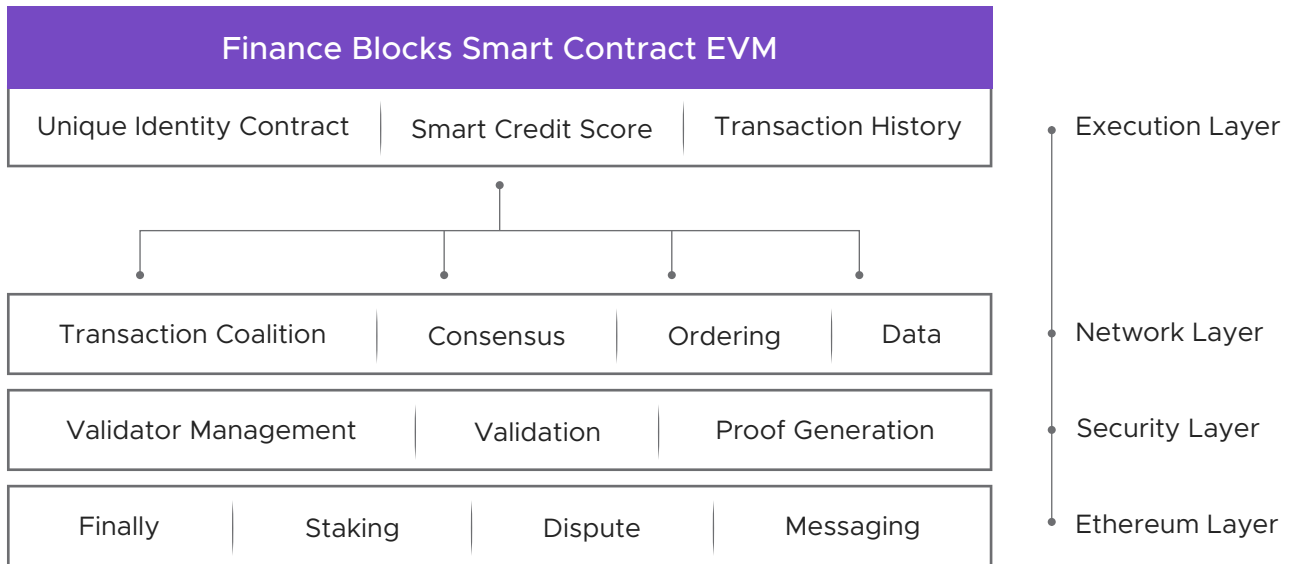
### Smart contracts

The creation of unique digital identities for users and computation of credit scores is governed by blockchain powered smart contracts.



## 4.4.4 Technical Architecture

The Finance Blocks protocol, developed on top of Ethereum and Polygon, has four abstract layers.



### 4.4.4.1 Ethereum Layer

Finance Blocks uses the Ethereum blockchain, one of the most secure programmable blockchains in existence today, to host and execute critical logical components. This layer is implemented as a set of ethereum contracts.

- Finality
- Staking
- Messaging



## 4.4.4.2 Security layer



Security layer serves as the “validator as a service”. This layer is implemented as a meta blockchain which runs parallel to the Ethereum blockchain. This layer is in charge of:

- Validator Management
- Secured Chain Validation

## 4.4.4.3 Network layer



This layer is a constellation of polygon secured chain networks. Each of the networks serves its respective community, maintaining functions like:

- Transaction Collation
- Local Consensus
- Block Production

## 4.4.4.4 Execution layer



### 1. Execution environment

A pluggable virtual machine implementation

### 2. Execution logic

This sublayer is normally written as smart contracts. Finance Blocks smart contract utilizes the secured chains which internally uses the Ethereum network for fraud proof and validity proof. Thus, these 4 layers work in conjunction with one another to power the functionalities and features of the Finance Blocks protocol.

# 4.5 Onboarding Process

Banks and Financial institutions are onboarded onto the Finance Blocks platform by the Finance Blocks team. The process entails the following steps -

## Domain name and dashboard creation

When a financial institution is added to the platform, an admin account with a dashboard and a personalized domain name is created.



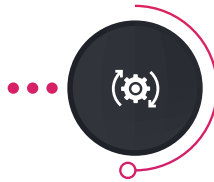
## Adding Branches & Staff

After creating the admin account and dashboard, the bank head will add all their branches and staff members. Once added to the platform, financial institution staff members receive their own login details to access the dashboard.



## System Configuration

Financial Institutions integrate their product offerings and configure interest rates, FDs, loans, etc. These configurations can be set for any banking operation that takes place within the platform.



## System Integration

Customers of the banks can now be onboarded onto the platform. A customer bank account is created beginning with a KYC process. The Finance Blocks protocol creates a unique digital identity for each user and stores it for future processes.



## Operational Functions

Banking operations can now be initiated for the customer. Money can be deposited or withdrawn from the account, FDs and loans can be processed. Interest calculation, settlement of interest on savings & FDs, EMI generation, etc are all taken care of automatically, as per the set configurations.



## Data Interfaces

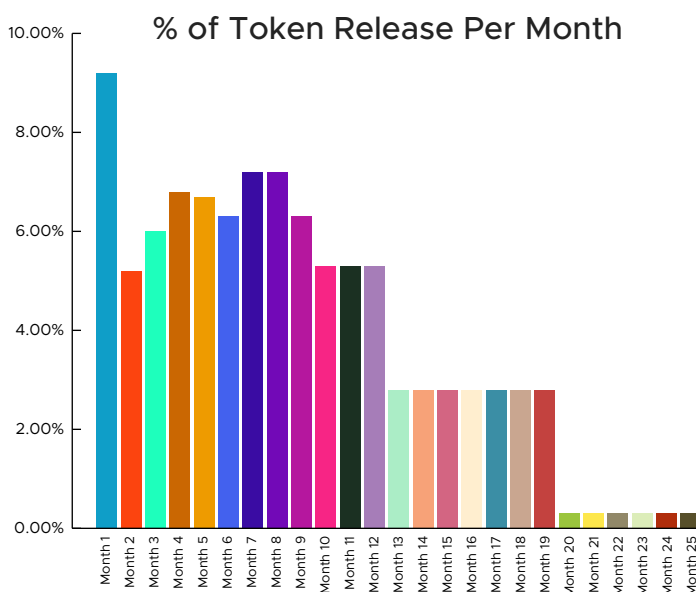
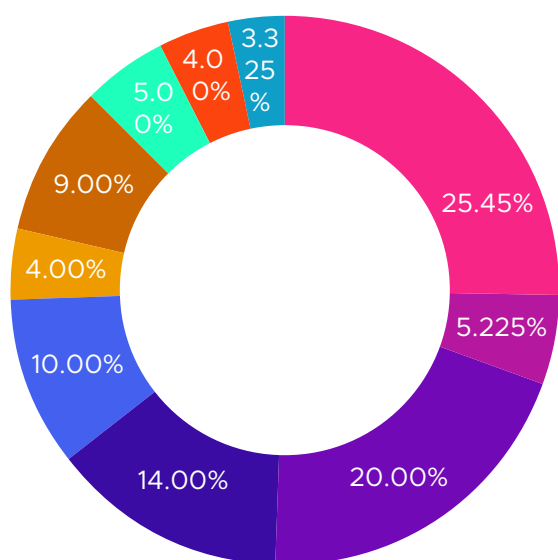
Users & Financial Institutions are able to view all financial data on the Finance Blocks mobile application. Users & staff members can register to the application by selecting their financial institution and entering login details. Once the account is registered, users & staff members have the ability to view financial data like balances, FDs, loans, and EMIs.



# 5.0 Tokenomics

Finance Blocks Token(FBX) is a fungible ERC20 utility token that will serve an array of purposes in the Finance Blocks ecosystem. The token will be tradeable on numerous cryptocurrency exchanges. The finite supply of FBX tokens is one billion tokens.

Total	100%
Token Sale (All Rounds)	25.45%
Treasury	5.225%
Ecosystem Development (Customer Aquisition)	20.00%
Product Development (FBX Protocol and R&D)	14.00%
Strategic Partnerships	10.00%
Bounties/Airdrops	4.00%
Team	9.00%
Advisors	5.00%
FBX Foundation	4.00%
Legal	3.325%



## 5.1 Use Cases of FBX tokens

Some of the ways in which FBX tokens can be utilized by RFIs and consumers are -



### Facilitating remittances

Utilizing Finance Blocks' international network of financial institutions, the FBX token will facilitate efficient and affordable cross border remittances. In the future, Finance Blocks will rollout a solution in which users will be able to perform real-time cross border transactions and avail discounts on cross-border transaction fees by using FBX tokens.



### Enabling access to different features of the platform

In order to use the dashboard for notifying users about their new and existing products, RFIs will be required to pay a fee in FBX tokens.



### Transaction Fee

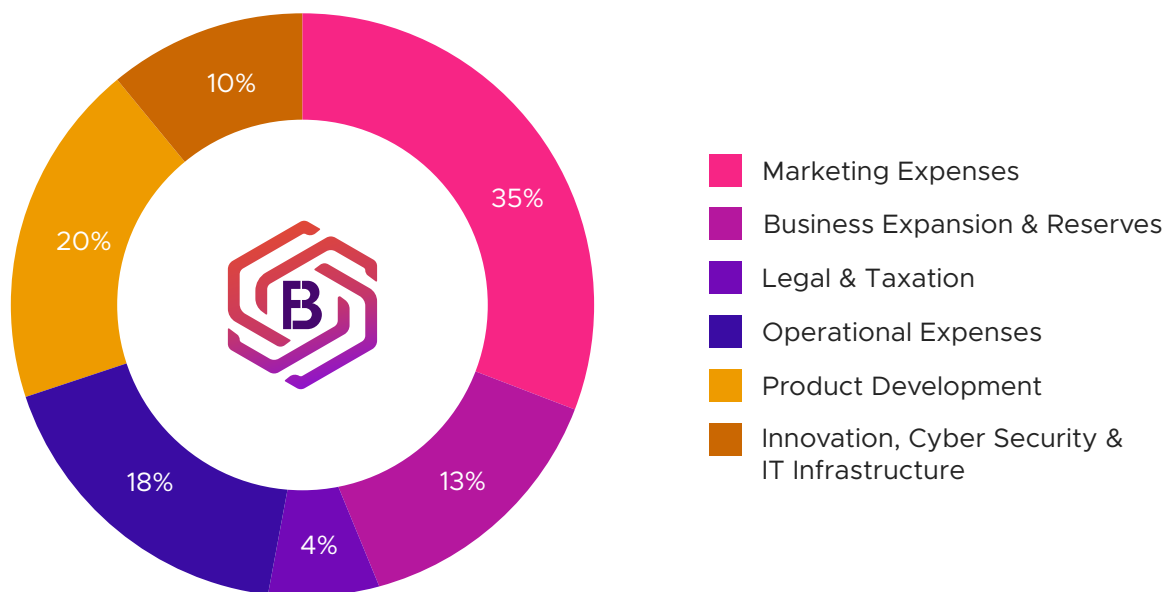
RFI's can use the FBX token to pay for transactions fees, in return they will get 10-20% discounts.



### Enabling other financial institutions to access the credit scores of users

Financial institutions that seek to obtain the credit scores of rural users in order to promote their solutions will be able to do so by paying a fee in FBX tokens for this analytical information.

## 5.2 Allocation of Funds



Represented in the graph above is Finance Blocks plan for its utilization of funds received from the sale of its token(FBX) on listing exchanges. Finance Blocks current utilization plan includes the following-

- **35% Marketing Expenses**- A full scale marketing plan to advertise our solutions globally and create awareness for our token.
- **13% Business Expansion & Reserves**- Finance Blocks has set goals to hire 50 full time employees by the end of 2022 and be listed on 3+ major exchanges.
- **4% Legal & Taxation**- As Finance Blocks continues its expansion, legal needs and taxable revenue will increase. Finance Blocks believes in full compliance with all laws and regulations, and respects the individual jurisdictions from which it operates.
- **18% Operational Expenses**- Onboarding and digitizing rural financial institutions. These funds will assist in providing financial support for our daily operations.
- **20% Product Development**- The design and implementation of our Protocol and further development of our mobile applications.
- **10% Innovation, Cyber Security & IT Infrastructure**- Research and development of new solutions we can implement within our platform. Implementing additional layers of security to our mobile application and banking dashboard.



# 6.0 Revenue Streams

## Co-Lending/Broker Agreements

Finance Blocks will broker loans between large financial institutions and RFIs operating within its network to financially empower RFIs and enable them to increase their contribution to rural communities by giving competitive credit offers to deserving applicants. For this, Finance Blocks will charge a brokerage fee of 1%-4% of the total transaction value.

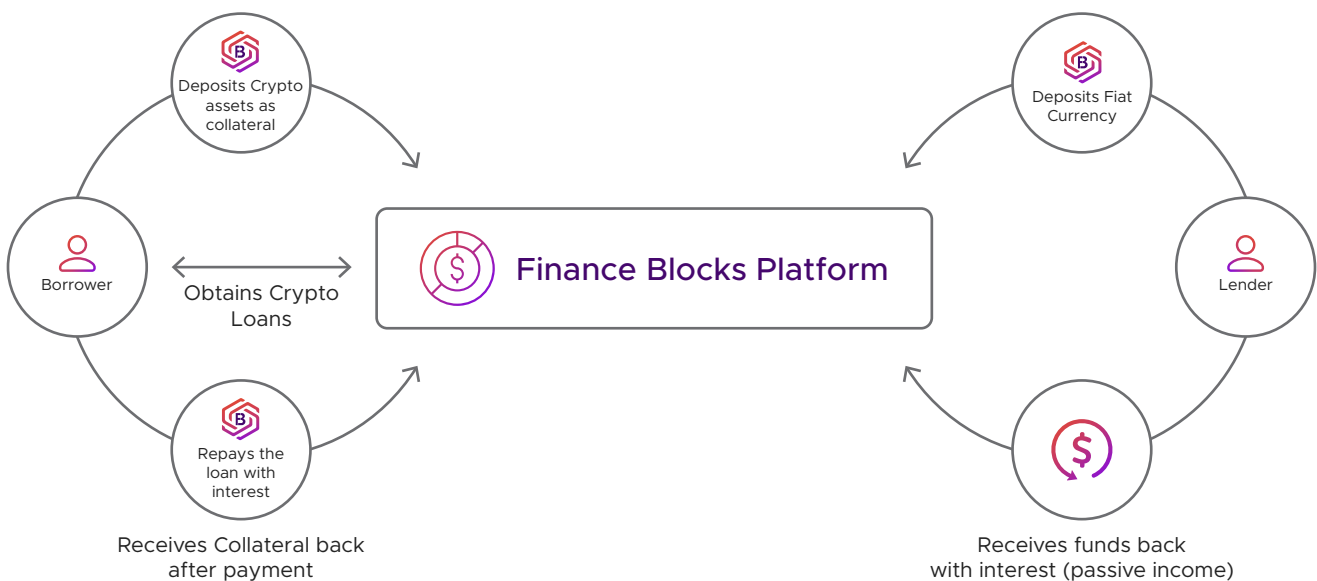
## Monetization of Data

With our access to rural areas of the world increasing, we will be gathering analytical and financial data of untapped markets, which can be used for marketing relevant products and services to these consumers by companies such as FMCGs, Financial Institutions and Insurance Providers.

## Transaction Fee

Finance Blocks will be Charging a 0.7% transaction fee for each loan disbursed.

We anticipate that each RFI we onboard will give us a value of \$5000-\$6000. The value for each RFI is calculated based upon, equity per bank, transaction costs, potential software fees, farmed data, and potential loan & co-lending agreements.





# 7.0 Competitor Analysis

The quest to ensure financial inclusion of marginalized communities had led to the emergence of several financial services startups with unique solutions.



## **Sandah**

Sandah is an Egyptian micro and home financing solution that has credit offerings starting from 1.000 Egyptian Pounds (EGP) up to 30.000 EGP. In addition, Sandah also works to improve project opportunities, create job prospects for young professionals, and enhance the skills of industrial workers.



## **Momentum Credit**

Momentum Credit is a Kenyan initiative that aims to advance structured working capital to people and SMEs. The startup provides a range of microloan products including invoice factoring, logbook loans, bid bonds and payment guarantees.



## **Rufi Rural Fintech**

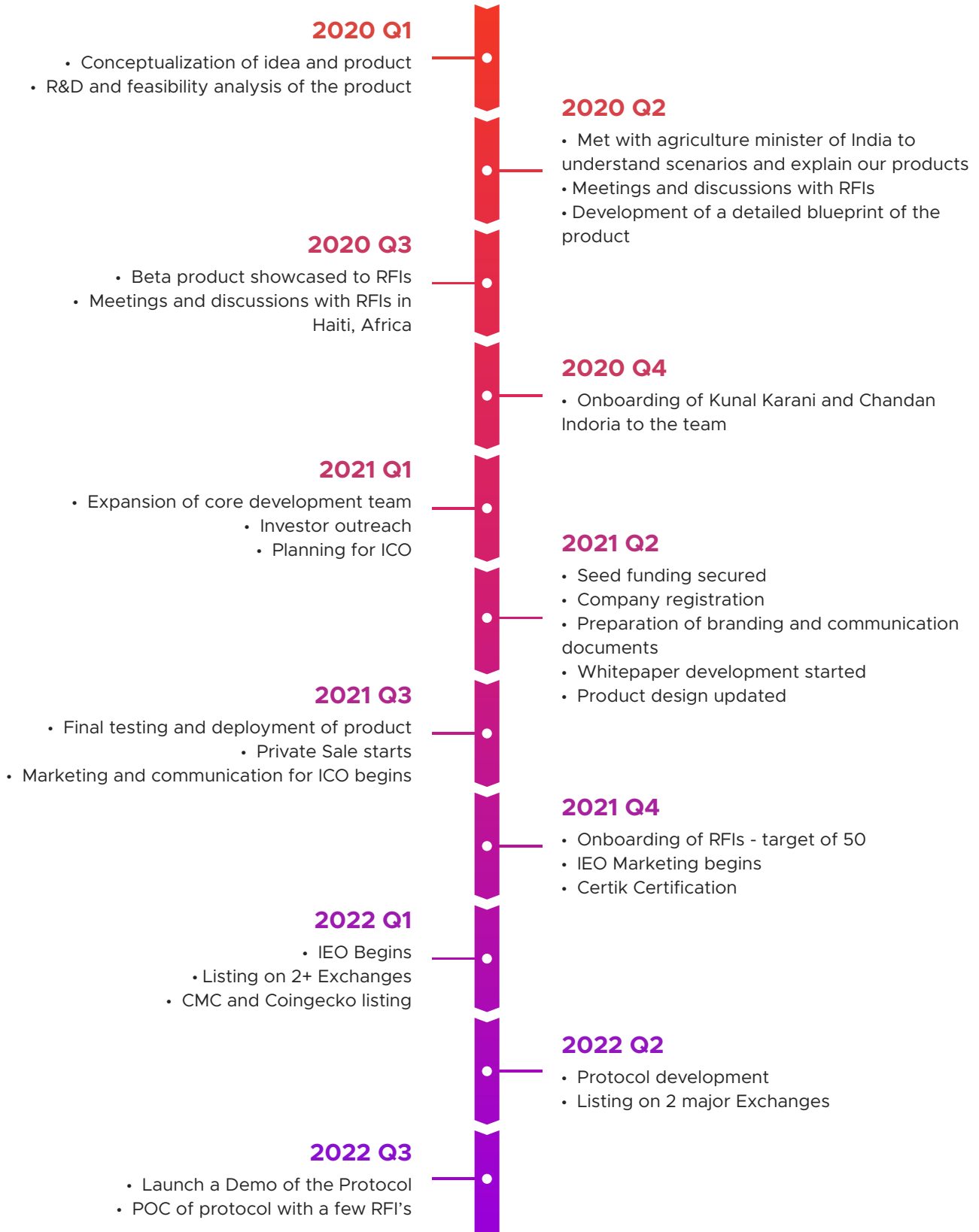
Mexican startup Rufi Rural FinTech applies big data analytics for extending micro financing services to rural communities. They offer payment, internet and software solutions to small businesses in rural areas.




## **Money Bank**

MoneyBank is a Vietnamese P2P lending platform that uses digital technologies to extend loans without requiring any paperwork or collateral. Borrowers have various options for selecting their loan terms and repayment methods.

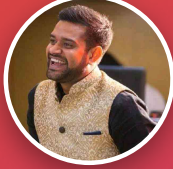
# 8.0 Roadmap



# 9.0 Our Team



**JAKE SELTZER**  
CHIEF EXECUTIVE OFFICER




**KUNAL KARANI**  
CHIEF OPERATING OFFICER



**AYUSH SHUKLA**  
CHIEF TECHNOLOGY OFFICER




**CHANDAN INDORIA**  
CHIEF LIAISON OFFICER




**HOANG VIET HO**  
SENIOR FINANCIAL ANALYST



**HAL GASSENHEIMER**  
CHIEF FINANCIAL OFFICER



**BRENDEN SICILIA**  
DIRECTOR OF BUSINESS DEVELOPMENT



**JACKSON CAMPBELL**  
CHIEF COMPLIANCE OFFICER

# 10.0 Contact Us

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Our team is always available to answer your questions and assist you in your quest towards financial empowerment.

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