

# **BLOCKCHAIN-BASED LENDING – A PEER-TO-PEER APPROACH**

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Before the rise of banks, a peer-to-peer system of loans and repayments used to take place where transactions occurred just on the basis of trust. Then came in the concept of collaterals where one had to keep their belongings as security to get a loan. But over time as trust began to break and globalization came into picture, third parties and middlemen started to thrive as they provided that extra layer of safety which was much needed. But, with time the centralized nature of these third parties made the system very complex due to extra layers of regulations and time-consuming manual process leading to huge costs on consumer's part. To tackle these issues, people are looking towards blockchain technology<sup>1</sup> as it is built on the peer-to-peer model, providing a trustless, decentralized and a secure platform for lending practices.

## **Introduction**

A common person might be more aware about the equity and stock markets, but the debt markets are much bigger. It is a trillion-dollar industry and is growing even faster than before courtesy emergence of Asian markets. But it is plagued with inefficiencies due to barriers in interoperability between regions and markets leading to liquidity risks. Blockchain technology-based lending provides a solution for this as it is based on a peer-to-peer model and can make the entire process smoother and safer leading to obsolescence of traditional banking system and third parties. A borrower sitting in any part of the world can access the loan market and lenders can bid to deliver it due to the decentralized nature of blockchain technology as geography is not a concern in it. According to a report by Santander, by 2022, blockchain technology can help banks save \$20 billion a year in infrastructure costs. Overall, blockchain technology adds transparency, reliability, trust in this complex lending process which will reduce parties' risk and decrease settlement delays. According to a report titled 'Peer-to-Peer Lending by End-User Types and Business Model type' the peer-to-peer lending market is projected to reach \$460,312 million by 2022, growing at a CAGR of 51.5% from 2016 to 2022. With such a huge growth potential, blockchain technology can empower the P2P lending market to make it reliable and faster process.

## **Bank based lending vs P2P lending**

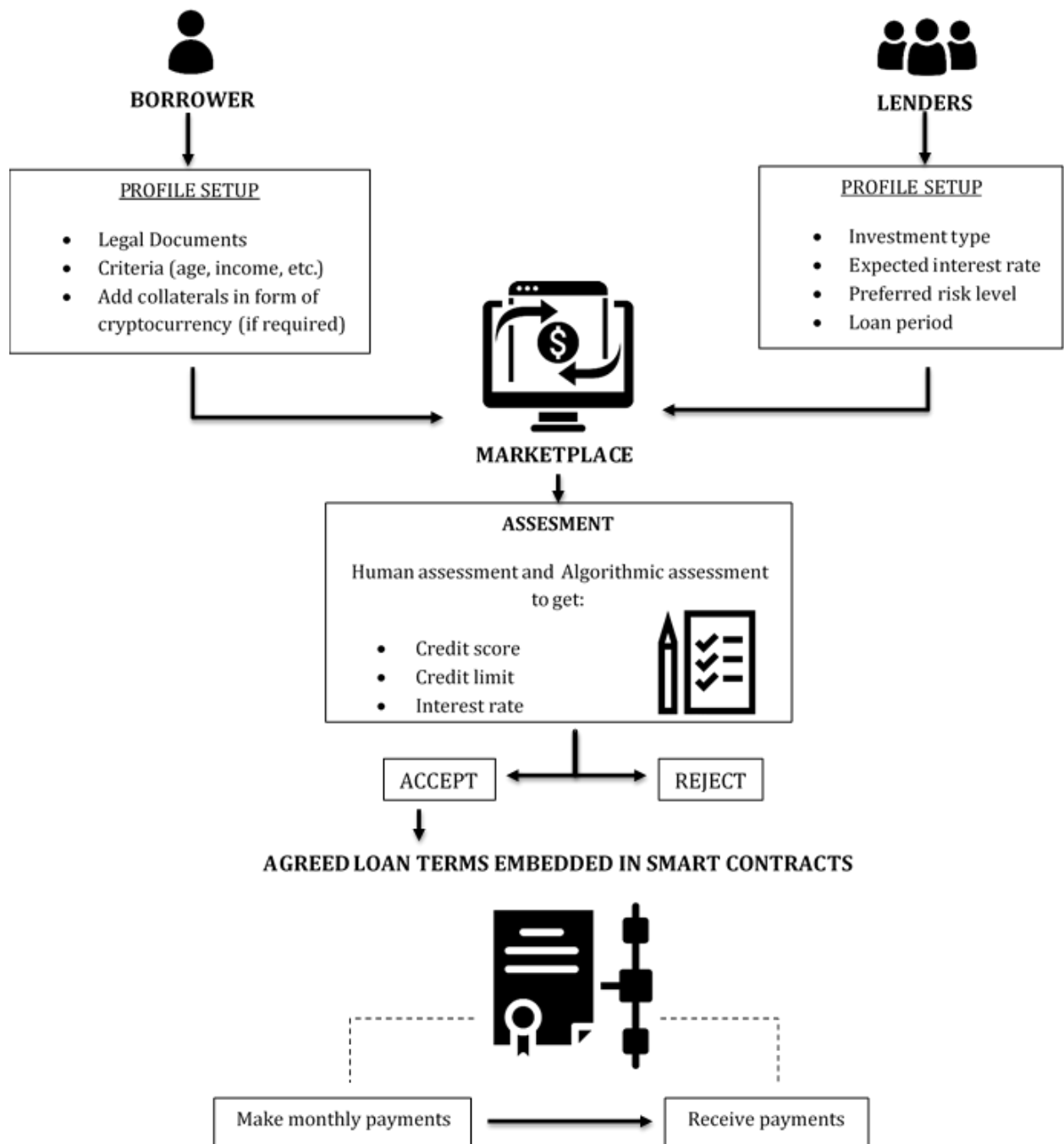
Traditionally lending process involves intermediaries like banks or lending institutions to build trust and reliability which leads to extra costs and several weeks for a loan to get

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<sup>1</sup> <http://vinodkothari.com/2019/06/blockchain-technology-its-applications-in-financial-sector/>

cleared. Also, interest rates differ widely from country to country making global lending difficult. By using blockchain technology in peer-to-peer lending system, the role intermediaries can be minimized. Through the help of smart contracts<sup>2</sup>, the lending process can be made fast as all the terms and conditions and regulations of the loan can be encoded in the contract. Also, smart contracts can be developed in such a way that they could autogenerate fixed interest rate of a borrower based on their profile or credit score.

## How does it work?



<sup>2</sup> <http://vinodkothari.com/2019/06/an-introduction-to-smart-contracts-guest-post/?fbclid=IwAR0QND62LjBNbszx3d3CR1rrkkEP20Eki6oSmn5NXubzftZBxWogGulkw8>

- People who are willing to borrow or lend need to open their accounts on a lending platform (example of these are SALT, ETHlend, Ripio Credit Network).
  - Lenders need to provide information about their type of investment (if they wish to lend for a specific kind of investment like for business purposes), loan criteria (expected interest rate, loan period, etc), bank account (crypto account or normal bank account) and personal information.
  - Borrowers need to provide personal information like identity proof, income proof and some other legal documents. As collateral they might be required to provide crypto-coins or third-party guarantors.
- Both borrowers and lenders submit their request in the marketplace platform.
- Assessment of the loan request by the borrower is done to rate the loan. Human assessment is done to check the validity of personal information and legal documents provided. Algorithmic assessment is done to generate the credit score of borrowers and the resulting interest rate of loan. *This is one of the major benefits of blockchain lending as smart contracts decides the rate of interest of a particular borrower based on their creditworthiness.*
- Once the loan is accepted both parties establish the transaction on smart contract where all the terms and conditions of the loan are encoded in the smart contract which is embedded with a digital wallet in order to receive loan from the lenders and periodic payments from the borrowers.
- Borrowers make the interest payments through crypto-wallets and if a borrower defaults then the smart contract automatically adds fine or late fees to the actual amount and updates it on the ledger.

## Benefits of Blockchain Technology in Consumer Lending

Blockchain technology has proved to be useful in many fields like cross-border payments, trade finance, settlements and consumer lending is also a sector which can benefit immensely from it. Here's how blockchain can help consumer lending industry:

### ▪ Low operational risks

Financial markets were plagued by news of fraud and defaults of loans provided by government backed lending institutions. Decentralization of data improves security and takes off risk of counterparties. Blockchain technology is based on hyperledger fabric and it provides a common platform and not controlled by an individual financial institution which enables to transparently yet securely share information which reduces the chances of fraud.



### ▪ Improved servicing efficiency of loans

There are a lot of paperwork and data management challenges involved in loan industry which leads to high costs and more transaction time. Blockchain technology can help make the system more efficient as the



whole process can be completed faster and data can be stored chronologically in a blockchain system and cannot be tampered once stored. New regulations and changes can also be encoded in the smart contract easily. Smart contracts make sure that lenders receive timely payments automatically.

- **Identity authentication**

A single borrower faces the hassle of updating KYC norms every time they apply for some kind of loan. Blockchain system can ease this process as they provide a robust system for member identification. Borrower can create a digital ID which contains all information like his income, credit score, loan history, etc. in one place or in a block of blockchain network. When applying for different kinds of loan they can use their unique ID at the lending institutions and can secure loan quickly. The details provided in the unique ID can be checked by credit agencies and identity verification departments for validation.



- **Flexible Markets**

Smart contracts powered by blockchain technology can help in creating flexible markets for loans where borrowers and lenders can negotiate the interest rates and other conditions of loan. Algorithms can calculate interest rates by evaluating the borrower's credit score, income and other information and thus it provides the genuine borrowers an opportunity to get low interest rates. On the other hand, it provides the lenders an opportunity to set the terms they wish for their investment.



## Case in Point

Recently **Yes Bank** has facilitated the issuance of a **commercial paper (CP) of INR 100 Cr for Vedanta Ltd** using blockchain technology<sup>3</sup>. This is one of the very first examples of blockchain based lending by a bank in Asia. Commercial paper (CP) are not usually backed by collaterals and are an unsecured money market instrument issued as a promissory note. Amid a CP market slowdown, Yes bank has issued this commercial paper digitally by being an issuing agent. The recent slowdown in issuance of CP can be attributed to liquidity crisis in the market caused by frauds and defaults faced by IL&FS due to operational errors. The implementation of blockchain technology for the issuance of CP can help reduce the turnaround time for issuance and redemption of CP's and operational risks. Blockchain's transparent & decentralized nature will help to increase real time visibility of the loans. GR Arun Kumar, Group CFO, Vedanta Group, said, "Vedanta will benefit from the digitized and simplified workflow which shortens the laborious process

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<sup>3</sup> <https://www.yesbank.in/media/press-releases/yes-bank-implements-asias-first-commercial-paper-issuance-on-blockchain>

running into hours to just a few minutes and complete transparency that this platform offers to all stakeholders.”

## **The Road Ahead for Blockchain Based Lending**

The concept of blockchain based lending might bring in a new era in the lending business as automatization of loan agreements can vastly improve the process, but blockchain technology itself is in its nascent stage with a lot of new updates every day. Building a blockchain network itself is very costly and requires great technical expertise. Also, the volatile nature of cryptocurrencies may prove to be a barrier to entry for new peer-to-peer lending start-ups. There are a lot of legal uncertainties around cryptocurrencies in many countries which also is a hindrance. Automatization of evaluation of customers and finding their credit scores require robust oracle systems, which at this point are in their development stage. Many consumer lending companies are in there planning stage at this point of time except a few early adopters. But, blockchain technology is the technology for future and it lays groundwork for great transparency and efficiency in lending environment and analytics give the firms the edge they need to convert this transparency into decision making, This new version of age-old peer-to-peer lending system has the potential to completely revolutionize financial lending by adding accuracy and efficiency to the outdated centralized system.