Review: Impact of Blockchain Technology in Lending

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Abstract - *This paper analyses a pattern that helps SMEs (Small and Medium Enterprises) to assess Loans taken from the bank through the usage of Blockchain. It's a decentralized system that records debt history – Debt repayment of debt default. With this system in place, SMEs would be able to gain access to loans even without any collateral. In this system, SMEs with low risk and high appetite for quality would be able to display their credibility and their risk factors through distribution of information.*

Introduction of Blockchain in Peer to Peer lending ensures a faster and a more transparent process of accessing loan funds without going through the conventional banking processes. This paper also talks about defining a feasible business model for Peer to Peer lending from a technical and business standpoint.

Key Words: Blockchain; Lending; Peer-to-Peer; SME;

1. INTRODUCTION

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P2P Lending is a lending system that is free from the involvement of any collaterals. The market segment targeted is essentially those with negligible or no credit history. Typically, this form of lending in risky as compared to regular lending methods as it involves no collateral or security against the loan offer. P2P lending is facilitated by the process of Bidding, Profiling, Matching of Offers, Loan Amount Transfers and Loan Collections or Recovery.

This entire process is performed digitally, and hence is bound to include certain extra costs like Processing Charges, Maintenance Charges, etc. Operational Charges, however, would be reduced because it is an online process and the intervention of a human being would be much lesser as compared to a traditional process. This method of P2P lending helps with faster onboarding processes and financial inclusion. This paper explores the usage and the power of Blockchain technology in the Peer to Peer lending space. [1]
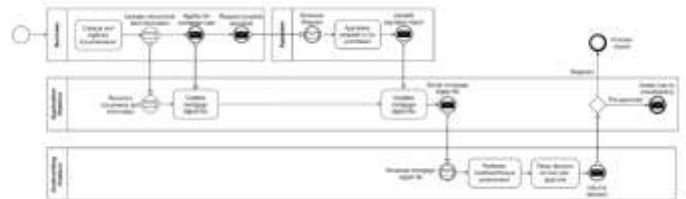

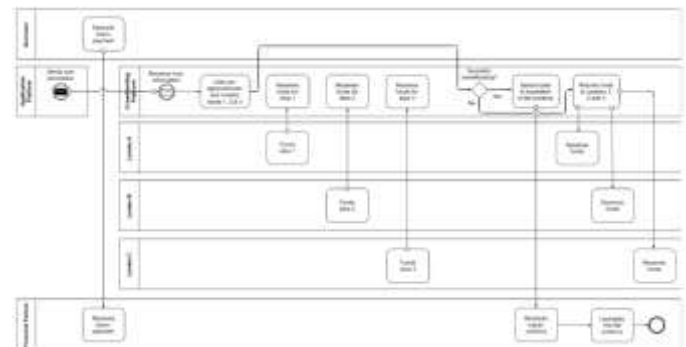Fig. 1.0 – BPMN Flow – Application and Underwriting Flow
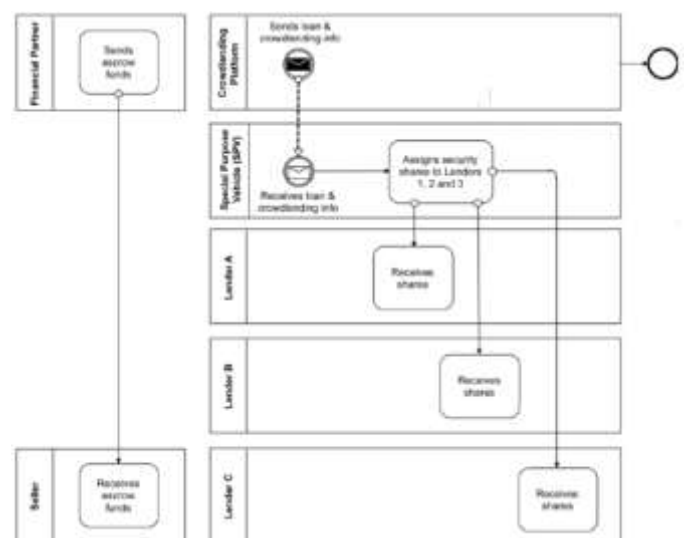

Fig. 1.1 – BPMN Flow – Crowdlending Flow

Fig. 1.2 – BPMN Flow – Mortgage assignment, SPV shares assignment and financial flow to the seller

2. Objectives and Significance

A.   Reduction of Costs

It would facilitate direct dealing of borrowers and lenders, thereby reducing intermediary costs in the process. [2]

B.   Reduction in total TAT (Turnaround time) [2]

Blockchain technology used in the process of digital lending could make the overall process much faster by reducing the barriers of regulations and by adding additional controls.

C.   Smarter Interest Rate Generation [2]

Analysis of profile of borrower and automatic generation of an interest rate on that basis is possible with the help of Blockchain technology.

The major stakeholders that are involved in the entire P2P lending system are:

1. Lenders: Individuals/Institutions who give out money

2. Borrowers: Individuals/Institutions who take credit or a loan from the lenders with an intent to repay with interest

3. Guarantors: Individuals/Institutions who take guarantee for a borrower's repayment of a loan amount.

3. Discussion Points

A.   History of P2P lending and its growth [1]

Earlier known models of P2P lending were mainly about lending money to friends, family and close ones – This is where a factor of trust began to show importance as the lending bandwidth grew in terms of people and ticket sizes.

A problem of this kind gave rise to a lending system based on Blockchain that facilitates Peer to Peer lending without involvement of an intermediary in the entire process.

In India, P2P lending is primarily regulated by the Central Bank (Reserve Bank of India). The RBI typically grants licenses to market players to operate under the P2P lending space.

Companies with licenses can borrow money from central lenders and lend it further to their customers but cannot lend it out from their own books. The limit on lenders is INR 10 Lakhs and the limit on borrowers is also the same at INR 10 Lakhs

B.   Blockchain

The role of Blockchain in reducing costs, time of processing and the elimination of intermediary, in turn reducing operational costs have been covered in the previous sections. [2]

Blockchain facilitates decentralization of data – this helps the eliminate the dependency of a single source for data storage and retrieval.

Data immutability helps make the data encrypted cryptographically. A hashtag considered as an identification point for such a situation. To enhance and to add another layer of security, computers can act as validators for the data – this improves transparency and adds to the accountability of the process. [3]

Elimination of sub processes and/or simplification of the same using Blockchain technology helps reduce costs as compared to traditional lending procedures.

Blockchain technology holds the potential for being applied in financial processes like Govt. cash management, transaction processing, clearing & settlement of financial assets, bank ledgers etc. Blockchain also offers solutions to problems like:

- Efficiency

- Lag in transactions

- Fraud

- Risks in operations

Cryptocurrencies are implementations of Blockchain that fit in the architecture of Peer to Peer lending. Flow of funds into the system would be faster and would take place without any additional bank processing charges or delays. This platform also has the capability of being scaled to various geographies globally and would limit the role of bankers to such implementations.

This system could possibly eliminate the need of a third-party credit rating system. This is because the blockchain system is robust to keep track and would also be able to maintain the credit score of borrowers. [3]

C.   Methodology

Fig. 2.0 – Mortgage Loans Process Steps

The process of mortgages or loans using Blockchains typically has 5 steps:

- Origination: Borrower or the individual applies for a loan, and the loan application is sent for a review to the lender. The lender processes the application and sends out a response.

This step can be improved with the help of Blockchain by accurate record keeping. This would provide lenders with a detailed level of access to the information of the borrower. This information would mostly be collected from the lead generation form that the customer would have to fill up.

- Fulfilment: This is the stage where the lender gives a calculated value for the loan amount and issues the loan.

  With the help of Blockchain technologies, the process of providing estimations for loan amount can be done within 3 days. It could also help with time-stamped receival of documents.

- Settlement: During the process of closing of a loan, the borrower is required to present a set of documents to the lender. This makes the system complex as a whole and this creates an opportunity to bring in the use of technology to improve the same

  Using Blockchain, loan closing can be accelerated by making contracts over the platform. It also increases the precision of the system.

- Servicing: This step involves timely collection of Interests and the principal amounts from the borrower. This involves the exchange of money and thus becomes a naturally complex process that needs to be solved using technology.

  By making use of Blockchain technologies, payments can be tracked, and data can be accurately read and represented. It also eases the movement of asset by making use of Blockchain's validation requirement.

- Secondary Market: This is a market space where loans are bought and sold by borrowers and lenders.

  In this respect, Blockchain helps increased transparency in asset ownership. It can additionally make the transaction process smoother and faster. Furthermore, the information updation feature of Blockchain can be used to keep the market information up to date. It would ensure the safety of market details.

Players in the field of lending typically include:

- Borrowers: Blockchain P2P lending opens new opportunities for those individuals who have less potential to avail traditional loans due to lack of or low credit information.

  In addition, Blockchain P2P lending helps remove intermediaries, and thus helps save 1-2% of the closing costs.

- Intermediaries: A typical loan process extends up to 2 months. One of the main reasons for the same is the involvement of intermediaries.

  Blockchain has the power and the potential to exclude intermediaries from the entire process of the loan application and approval. This reduces costs like:

  o Legal Fee

  o Consulting Fee

  o Underwriting Fee

  Etc.

- Secondary market: This market involves thousands of daily transactions between Lenders and Borrowers daily.

Through Blockchain, it is possible to create a standardized system for these engaging transactions. The system could include land records, country records, etc. that would help create smarter, more accurate and more consumer-friendly contracts in the market.

D. Research Methodology and Data Collection

This paper makes use of descriptive research to collect information and to analyze the growth of the P2P lending sector using Blockchain technologies.

The data is collected from multiple journal papers, as well as websites, and this study would particularly benefit peer to peer lenders, regulators and technology solution providers in order to make their processes more wholesome. [1]

E. Model Feasibility

- This paper presents and explores a Peer to Peer lending system model for the LOS (Loan Origination System) mortgage sector.

- Its future impact as well as feasibility would primarily depend on two factors:

  o If each sub-model has the capability of being instantiated.

  o Whether such a model can be integrated with modern systems.

- This model's feasibility also depends on the number of default cases. Past statistics say that old markets are more susceptible to defaults as compared to new ones. [2]

4. Further Scope of Study

- Regulations specific to countries can be studied in further details, and comparisons can be drawn.

- Alternate lending as a dimension for expansion can be studied and worked upon

- Additional usage of technology. For example – Machine Learning for the close to accurate prediction of repayment of a loan by an individual based on their previous records of repayment etc. [2]

5. Conclusions

This study contributes to the currently existing literature on the topic of Peer to Peer lending using Blockchain technologies.

This paper combines research from multiple reports and analyses how the industry is shaped currently. Furthermore, the paper also analyses how the model of Peer to Peer lending could be potentially scaled soon by adding newer technologies and by expanding into newer domains.

An analysis of the International and Indian system of P2P lending has also been performed in the paper. Considered influential factors for P2P lending include:

- Cost efficiencies
- Reduction of onboarding time
- Issue recovery time reduction
  Etc.

Additionally, the paper stresses on how decentralization of data using Blockchain technologies would help create a robust system and would also help extract data and process the same at a much faster rate – thereby reducing the turnaround time (TAT) significantly.

The paper also covers how small and medium enterprises – that are low in risk but high in quality – can avail such loans without providing any kind of collateral

This theoretical model derives results that lead to two main conclusions:

- Removal of asymmetry in information and problems pertaining to credit scoring can be achieved by making use of a decentralized information system for all participants.

- Risk mechanisms that that include Banks, Governments, and other firms make the system unique and innovative. Overall, they create a lower risk model for peer to peer lending using blockchain technologies.

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