CoVEX Loan: A Peer-To-Peer Loan Platform

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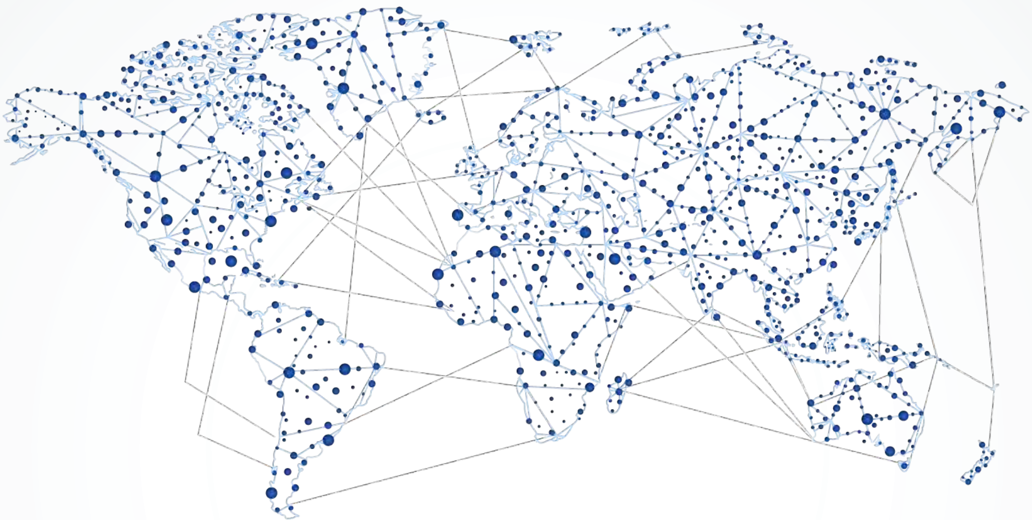


Abstract

Peer-to-peer (P2P) lending is emerging as an alternative form of investment that provides investors with relatively low risk-adjusted returns. As such, P2P loans are increasingly being incorporated into portfolios in the interest of diversification. A truly P2P version of loaning would allow direct interaction between the borrowers and lenders, enabling the former to take out loans without involving any financial institution. Backed by Machine Learning (ML) algorithms that score the recommended fraud, identity, and other credit rating agencies, P2P Loans can significantly simplify the loaning process. We are implementing a P2P Loan platform to be incorporated into our investor's portfolio in the interest of diversification. CoVEX intends to tokenize P2P lending by offering a completely free market platform with all the ingredients that a credit business requires to do business. This paper outlines the model, strategy, and roadmap for the implementation of CoVEX's P2P Loan.

Contents

Introduction

P2P lending—an innovative financial process whereby lenders provide unsecured direct loans to borrowers using inline platforms—are flourishing, just like the popularity of e-commerce. Today, securing a loan in a traditional bank is a cumbersome process. This has alienated many people from the mainstream loaning. The emergence of P2P loans promises to fill this void adequately.

P2P loans can be viewed from 2 perspectives: conventional and Emerging Blockchain-based platforms. Whereas the former is based on Web 2.0 technologies, the later leverages Blockchain and latest AI/ML technologies. Naturally, the uptake of conventional P2P loans has been growing at an exponential rate.

This rapid expansion of conventional P2P lending is fuelled partly by innovation and development of efficient platform technologies such as ML, the ability to make transactions securely, and the promise for more competitive returns and expansion of virtual societies. This combination of factors is helping P2P loans to emerge as a disruptive force in the financial industry.

Compared to conventional bank loans, the current P2P lending systems offer two main features. Firstly, the information asymmetry is low because lenders make direct contact with borrowers on the lending website and can learn detailed information about them. Secondly, the lending platform provides a variety of features which allow borrowers to indicate their credibility.

While some platforms like Lending Club and Prosper are open to any borrower so long as they meet loan requirements, the majority of platforms are only accredited to qualified investors.

One crucial issue for investors is that conventional P2P loans marketplace and its service providers are not regulated by the governments or even insured by government agencies. As of this writing, there are no liquid trading markets for P2P loans. As such, these loans are largely hold-to-maturity investments.

Moreover, the securitization of the P2P loan marketplace is a field that is still in its infancy. Because of these challenges, the required transparency and liquidity to investors who are seeking potentially greater returns than they might obtain from comparable high-yield or asset- backed securities are lacking.

Today, multiple lawsuits have been filed against leading P2P lending platforms such as Lending Club and OnDeck. These lawsuits mainly concern the disclosure of necessary information to investors during their IPOs. Other platforms like Ezubao—a Chinese P2P loan platform—just turned out to be a pyramid scheme.

A truly Blockchain-based P2P Loan marketplace backed by advanced AI/ML technologies which incorporate the traditional lending processes can transform the financial industry.

Cryptoeconomics of Blockchain-based P2P Lending

The exponential growth of the Internet and the mismatch between the supply and demand of loans necessitated by the broken financial industry have given rise to P2P lending platforms. Because the credit system is not perfect, many conventional platforms such as Lending Club relies on the borrower to provide their own data. Based on data provided, the platform determines their own credit history or situation.

In some cases, the traditional P2P platforms cannot track and trace each borrower's loan which inevitably increases volatility. Here are a few observations that can be noted about P2P loan platforms:

· Lenders bear the greatest risk of financial security;
· If the lender and borrower are rational people (both elect the maximum returns between default and non-default under Nash Equilibrium), then lenders would only consider their own funds that can be repaid on time;
· If the lender's income includes the interest of the borrower, then the cost of the borrower would consist of interest costs; and
· If the two parties in the game are under the conditions of complete information, there will be no uncertainty with regard to the lending processes.

Consider the following game table below:

	Lender		
Borrower	No default	Invest	Don´t invest
	Default	(V+α+R-β,-α-R)	(0,0)
		(V-R,R)	(0,-R)

The table above shows the utility matrix between the P2P lending platforms and the decision-maximization factors. To construct the model and analyze the game, we assume that:

· R is the interest rate on the capital;
· P is the capital borrowed;
· V is the amount (Principal plus Interest);
· β is the default loss;
· α is the total investments to the Platform by lenders;

· Lenders will have two strategies (investment and non-investment); and
· Borrowers can either be in default (not on the debt service) or non-default mode (on time debt service).

Assuming that the borrower's default probability is P, we can derive the following equations:

The expected return on the lender's decision to invest ($\pi 1$) is:

$\pi 1 = P*(-\alpha-R) + (1-P)*R$.. (1)
This translates to:

$R-P\alpha-2RP$.. (2)

The expected return on the lender's decision not to invest ($\pi 2$) is:

$\pi 2 = P*0-(1-P)*R$.. (3)

Which translates to:

$RP-R$.. (4)

Obviously, when the lender's decision to invest is greater than the expected return on the lender's decision not to invest, i.e., $\pi 1 > \pi 2$, then the lender will decide to invest. When ϖl is less than $\pi 2$ $(P>2R/(\alpha+3R))$, then the lender will decide not to invest. As such, whether or not the lender chooses to invest depends on the probability of the borrower's default behavior.

Incentivizing lenders to invest in such cases would require a neutral third-party that spreads the risk. For instance, if the lenders invest their funds via an Investing House, then P (borrower's default behavior) will not have an impact on the lender's investing ability. The following game table assumes the same structure, only that this time lenders have used an Investing House to spread their risks as follows:

		Investing house	
		Invest	**Don´t invest**
Borrower	**Default**	$(V+\alpha+R-\beta,-\alpha-R)$	$(0,0)$
	No default	$(V-R,R)$	$(0,-R)$

In case lenders decide to invest ($V+\alpha+R-\beta>V-R$) namely $\beta<\alpha+2R$, borrowers will opt for the default mode. Because the cost of default is minimal, the borrower's income will be relatively high. On the other hand, if the cost of default is high enough, borrower compliance value will be higher than the default income and the borrower will opt to comply with the loan terms.

If lenders opt not to invest in the P2P platform, the borrower's income will be 0. As such, the borrower can opt for the default mode. Naturally, (0, 0) and (0, R) are not realistic values in the system since the P2P lending platform will not act as information intermediary for matching both parties.

Conventional P2P loan platforms do not provide the necessary incentives in the ecosystem to promote desirable behavior. Therefore, achieving Nash Equilibrium is a herculean task. It is because of the lack of incentives and penalties that these systems are allowed to fail. Furthermore, the securitization of the P2P loan marketplace is still in its infancy.

Because of the lack of incentives and penalties that would promote transparency and encourage desirable behaviors, the conventional P2P lending industry is broken.
Blockchain can help these platforms achieve the Nash Equilibrium and offer incentives and penalties that foster the performance of the system. Blockchain protocol contains rules which prevent miners from mining on top of the new chains that have been created by the invalid blocks.

CoVEX P2P Loan Platform

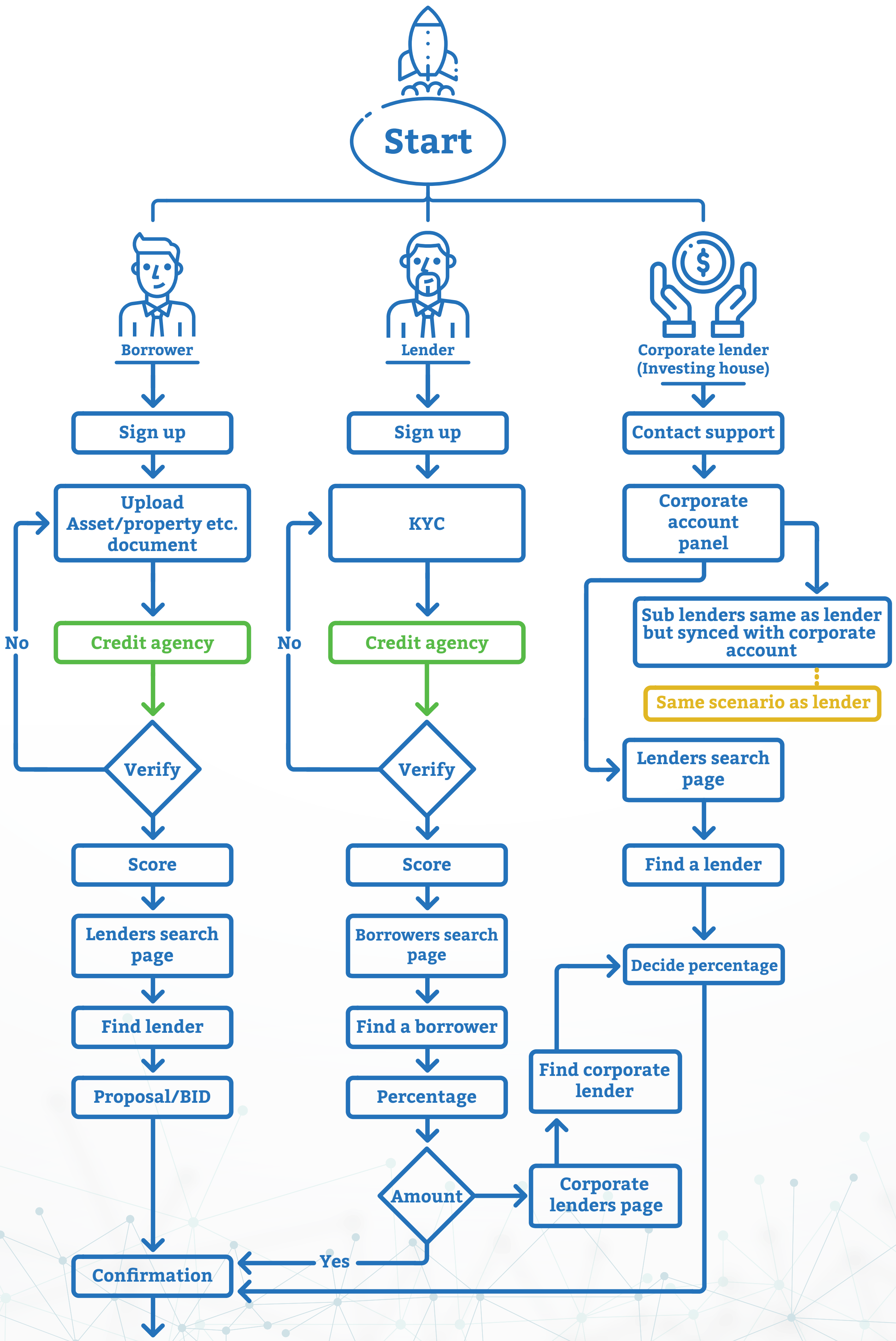
CoVEX is a P2P lending platform that is primed to connect international lenders and borrowers and lenders via an easy and trusted platform, leveraging the benefits of Blockchain and smart contracts. CoVEX will provide multitude loaning solutions to cater to the needs of lenders and borrowers by integrating global third-party systems that will verify, score and perform roles in the collection.

The CoVEX Architecture

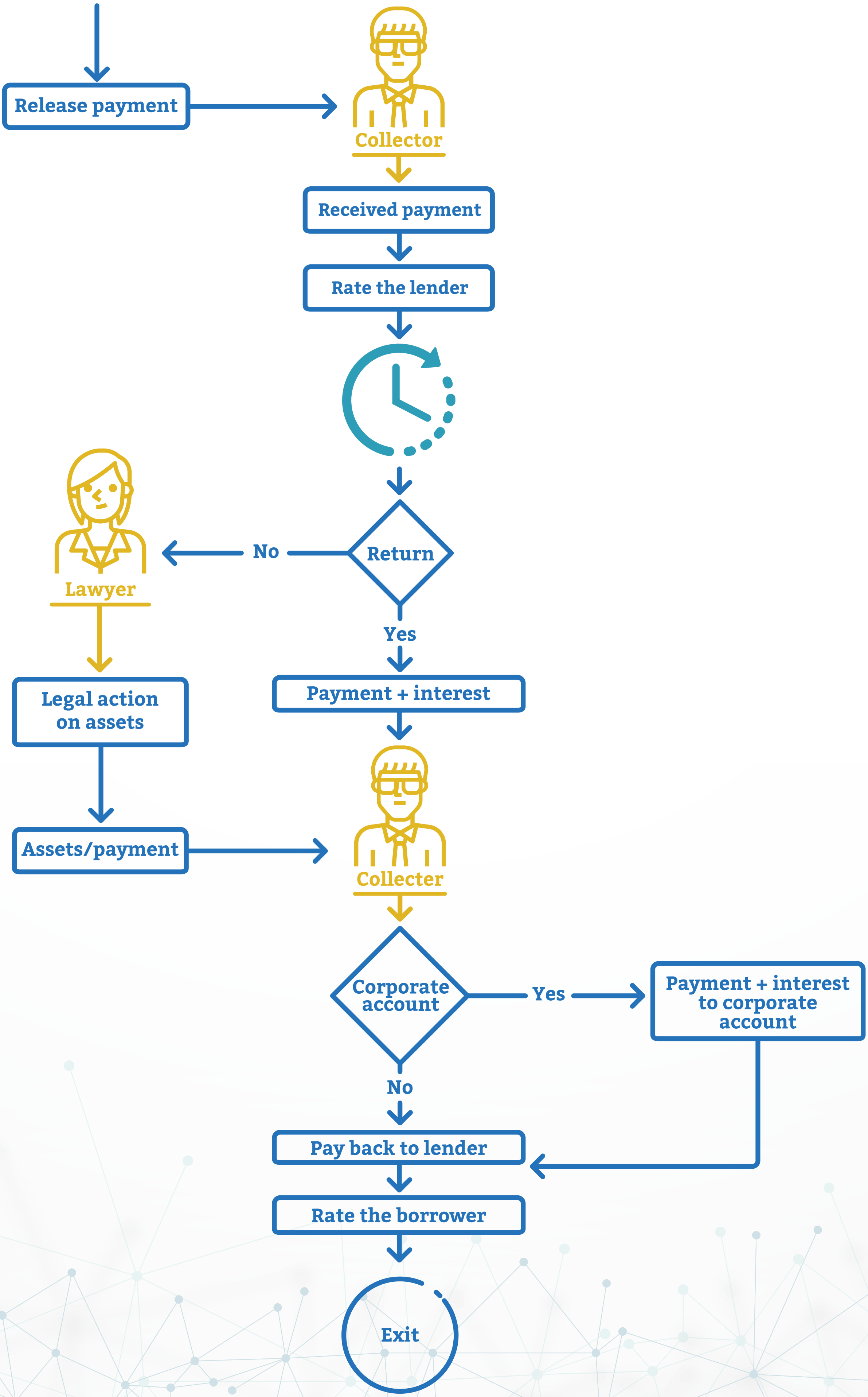
The CoVEX P2P Loan Platform will leverage Ethereum's smart contracts under ERC-223 standards with the following components:

Borrower **Lender** **Corporate lender (Investing house)**

In the next page is the CoVEX process overview:

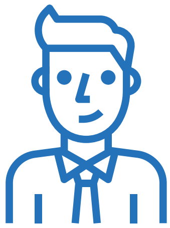


Start
Borrower
Lender
Corporate lender (Investing house)
Sign up
Sign up
Contact support
Upload Asset/property etc. document
KYC
Corporate account panel
Sub lenders same as lender but synced with corporate account
Same scenario as lender
No
Credit agency
No
Credit agency
Verify
Verify
Lenders search page
Score
Score
Find a lender
Lenders search page
Borrowers search page
Decide percentage
Find lender
Find a borrower
Find corporate lender
Proposal/BID
Percentage
Amount
Corporate lenders page
Yes
Confirmation



Release payment
Collector
Received payment
Rate the lender
Lawyer
No
Return
Yes
Legal action
on assets
Payment + interest
Assets/payment
Collecter
Corporate
account
Yes
Payment + interest
to corporate
account
No
Pay back to lender
Rate the borrower
Exit

Here are the definitions of the key actors:



#1 Borrowers

How borrowers will apply and access the funds on CoVEX Platform:

· The borrower will start by signing up and submitting his/her KYC and/or legal documents to a credit rating agency for approval;
· The credit rating agency provides a score indicating how accurate the documents are and his/her likelihood of repaying the loan;
· If approved, the borrower is redirected to the lender's page to access the lending services;
· The borrower uses the lender's page to contact the favourite offer post by lenders;
· The borrower bids on the offer and comes to an agreement with the lender;
· The lender confirms whether the bid is accepted or not;
· The lender releases the funds to the borrower; and
· The borrower receives the payment and rates the lender with a positive 1 if the loan has successfully been handed over.

#2 Lenders

How lenders will offer loan services on the CoVEX Platform:

· The lender signs up and signs up his/her legal documentation to a credit rating agency;
· The credit rating agency provides a score indicating how accurate the documents are and his/her likelihood of issuing out the loan.
· If approved, the lender is redirected to borrower's page to access the loan services;
· The lender searches for borrowers on the borrower page to offering them any good deal/loan;
· The lender sets a percentage on his/her loan offer;
· The lender offers the amount of the loan. If the loan exceeds his own amount, then the lender can ask for an additional amount from the investing house; and
· If the amount is confirmed by the lender, then payment is released to collectors for borrowers to receive their payments.

The lender rates the borrower with a positive +1 if the loan has successfully been handed over.

#3 Investing house

The investing house will contact support from fund managers to provide details and sign up on the CoVEX Platform as an investing house. Once they sign up, they will have their own corporate account setup and panel and sub-lenders or child accounts system.

How the investment houses will provide loan services on the CoVEX Platform:

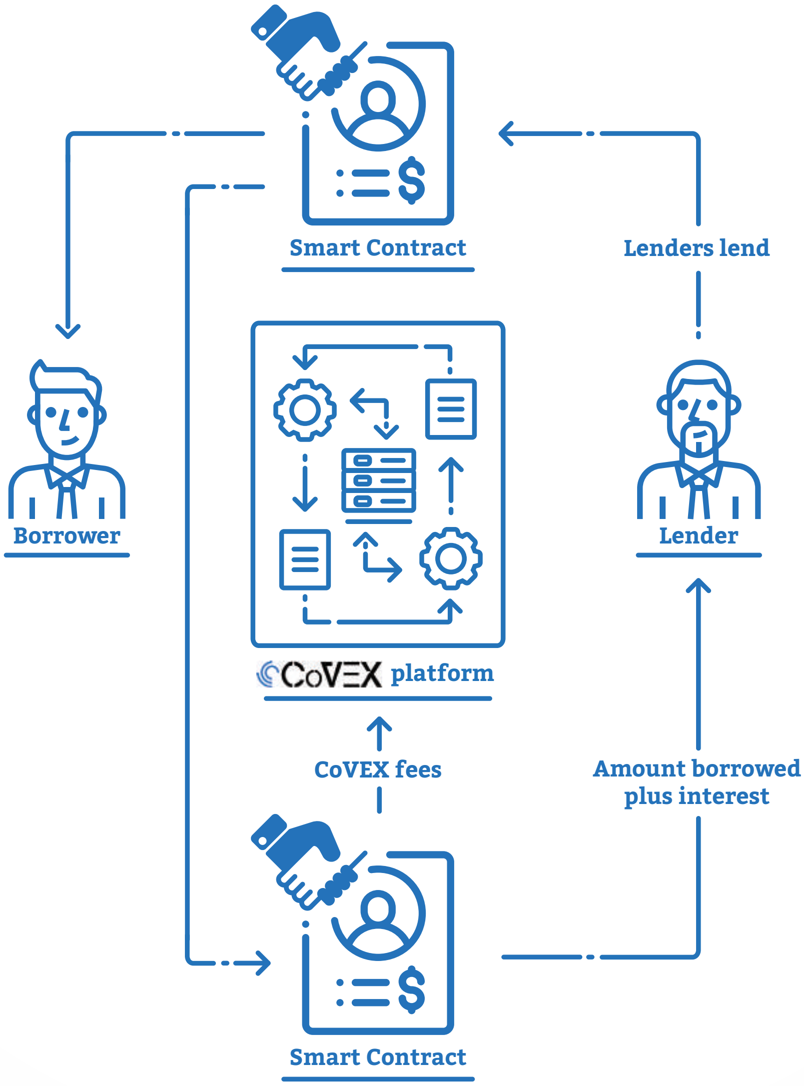
· They will contact the support fund managers to the furnish them with details and sign up on the CoVEX Platform as an investment house;
· Next, the investing house will be directed to search the lender's page where they will identify lenders and provide their investment plans or loans; and
· Once the lender has been determined, the investment house will float the terms of the loan and, if confirmed, the lender receives their payment

Loan repayment

The procedure for loan repayment on the CoVEX platform is as follows:

a) If the duration of loan repayment elapses, the borrower has to pay back the lender. Also, the lender has to pay back to the investment house if he/she took a loan from the investment house. There are two scenarios:
· The borrower/lender returns the amount within the agreed time; and
· The borrower/lender doesn't return the amount within the agreed time.
b) If the borrower or the lender returns the amount within the agreed duration, then the following procedure takes place:
· The collector receives that amount;
· The collector checks if the corporate account was involved in the loaning process. If this is the case, then the collector will pay an agreed percentage to the investing house and the remaining amount to the lender.
· If there was no investing house involved in the loaning process, then the collector will simply pay back the lender and the lender will rate the borrower.

The diagram of the next page summarises the processes:



On the other hand, if the borrower/lender doesn't return the amount within the agreed time, then the following chain of processes takes place:

· The collector contacts lawyers;
· Lawyers take legal action against the borrower/borrowers in the jurisdiction where the loan was offered;
· Lawyers get the money back (and deduct 1% of the whole amount as fees) and submit to the collector; and
· The collector transfers the amount to the lender or the investing house.

Besides borrowers, lenders and investment houses, the CoVEX Platform will also incorporate the following actors:

· Lawyers;
· Collectors; and
· Credit scoring agents

Lawyers will deal with all legal compliance with regard to loan processes. They will also suggest or reject any loan application that comes from jurisdictions that are beyond their reach.

Collectors will ensure local collection of debts in cross-border transactions by any legal means available to them in the jurisdiction of the lender. Each collector has the right to fix its commission for the recovery of the debt, depending on the complexity of the loan environment. When the collector signs a smart contract with the lender/investing house, he/she will have the right to act on behalf of the investor.

The credit rating agencies will provide tools that score the borrower, lender and investing house. They will score these actors based on any parameters that they find suitable, according to the prevailing mathematical models and expert opinions.

Benefits of CoVEX Platform

Benefits the CoVEX P2P Loan Platform:

Borrowers will have:

· ***Access to affordable loans*** due to CoVEX's innovative marketplace model, process automation, and online delivery;
· ***Enhanced borrowing experience*** via the easy-to-use online application system with real- time support;
· ***Branding opportunities*** where lenders will provide ratings and other transparent reviews on the Blockchain to establish the trusted agents and borrowers; and
· ***Transparency and fairness***, since the entire processes will be handled via a smart contract.

Lenders will have:

· ***Access to risk-less investments*** as a result of accurate customer appraisal systems;
· ***Branding opportunities*** where borrowers will provide ratings and other transparent reviews on the Blockchain to establish the trusted lenders; and
· ***Attractive returns*** by cutting significant costs that are associated with administering loans.

Investing houses will have:

· ***Access to risk-less investments*** as a result of accurate customer appraisal systems;
· ***Branding opportunities*** where borrowers will provide ratings and other transparent reviews on the Blockchain to establish the trusted lenders; and
· ***Attractive returns*** by cutting significant costs that are associated with administering loans.

Lawyers will have:

· **Access to increased revenue opportunities** in an automated Platform; and
· ***Access to risk-less investments*** as a result of accurate customer appraisal systems

Collectors will have:

· ***Access to increased revenue opportunities*** in a computerized Platform; and
· ***Access to risk-less investments*** as a result of accurate customer appraisal systems

Competitive Analysis

The P2P Lending sector is still in the initial phases of evolving from social lending—as it has been known in the past—to a global tokenized lending system. Whereas the traditional lending sector is practically built on the exchange of debt forms, this option is not available to P2P loan investors.

Currently, there are no liquid trading markets for P2P loans, and P2P loans are primarily viewed as held-to-maturity investments. Moreover, the securitization of the P2P loan marketplace is a field that is still in its infancy. Because of these challenges, the necessary transparency and liquidity to investors are missing, resulting in multiple lawsuits and Ponzi schemes.

The emergence of Blockchain fundamentally shifts how P2P lending systems and Fintech industries operate by bringing equality on a global scale. Global P2P platforms that rely on Blockchain will provide the same loan terms irrespective of inflation or citizenship.

CoVEX is primed to become one of the first firms to tokenize P2P lending. At the time of writing, less than 10 firms are in the process of leveraging Blockchain in the P2P lending industry. We can point out Lendoit and Salt Lending. CoVEX is different from these platforms in several aspects. The majority of these platforms are completely decentralized and leave out many traditional lending elements.

CoVEX P2P Loan will provide a completely free market platform with all the ingredients that a credit enterprise requires to do business. Lenders and borrowers will have access to a lending ecosystem complemented by smart contracts, sustained by a global network of scorers, underwriters, collectors, lawyers and fund managers that allows all the stakeholders to conduct business legally.

Our competitive edge will rely on leveraging smart contracts along with a blend of elements from the classical lending world to allow token holders to benefit from a trusted, seamless and secure lending platform.

Uniqueness of CoVEX Platform

CoVEX is leveraging the Blockchain technology to create a fair lending economy where borrowers enjoy the best interest rates while lenders receive maximum returns. The platform aims to enhance the level of trust in a P2P loan ecosystem by incorporating smart contracts. Here are some unique qualities of the CoVEX P2P loan platform:

• ***Regulatory compliance:*** We intend to create a platform that is wholly compliant across multiple jurisdictions. As opposed to other platforms that are entirely reliant on bots, the CoVEX Platform will have real lawyers, collectors, and credit-scoring agents who will play crucial roles, just like in conventional banking systems but in ”smart-contract” form; and

• ***All-in-one crypto trading features:*** From the very first time a user opts to trade in cryptocurrency, he/she will have access to a Crypto-Exchange, Social/Copy trading, Margin Trading, Payment Gateway, Prepaid Card Services and P2P Loan in the same ecosystem.

Conclusion

Blockchain has fundamentally shifted how P2P lending platforms and Fintech industries operate regarding fostering transparency and trust. Today, global P2P lending platforms can rely on Blockchain to provide the same loan services that banks provide, irrespective of inflation or citizenship.

CoVEX is primed to become one the first firms to tokenize P2P lending. CoVEX P2P Loan will provide a completely free market platform with all the ingredients that a credit enterprise requires to do business. Lenders and borrowers will have access to a lending ecosystem complemented by smart contracts, sustained by a global network of scorers, underwriters, collectors, lawyers and fund managers that allows all the stakeholders to conduct business legally .