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Smart P&L

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Risk assessment of the project

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Directory

1. Summary

"Smart P&L" SME financing platform focuses on the financing and guarantee of small and medium-sized enterprises, providing loans and guarantee between enterprises, fast borrowing from financial institutions and other services. Through the enterprise partnership network, it can help SMEs to establish a normative inter enterprise loan and guarantee process, and promote the financing difficulties of SMEs, contributing to settle the difficulty of financing.

However, the platform can only provide another fast and convenient channel for the financing of small and medium-sized enterprises. The financing of SMEs are still faced with the market risk, credit risk, operational risk and other common risks. Therefore, it’s of great significance to assess the risk of the project.

Risk matrix is a structural method of identifying the importance of risk in the process of project management, and it is also a methodology to evaluate the potential risk of project risk. Using the risk matrix to evaluate the venture capital project risk can clearly shows that what kind of risk identification is the key risk for the influence of the project, can evaluate and manage risks in the whole process of venture capital projects, and provide the basis for risk management measures and detailed historical records for further research. The risk assessment method system of venture capital project based on risk matrix is mainly composed of risk matrix design, risk factor importance ranking and overall risk level evaluation.

We will measure and identify the above risks and establish a risk identification matrix for analysis. Our analysis of the project is divided into the following parts: (1) risk identification based on risk matrix; (2) risk quantitative analysis based on risk matrix; (3) develop risk response plan based on risk matrix; (4) the conclusion of risk assessment based on risk matrix

2. Risk identification based on risk matrix

There are many kinds of risk factors in the project. According to the actual situation of SME financing platform, it can be summarized as market risk, credit risk, operational risk, policy and regulation risk, reputation risk

2.1 Market Risk

Market risk is a risk that the new products of the project do not match market demand. It is mainly displayed by uncertainty about accepting ability, length of accepting time, speed of products diffusion and so on. Concretely, in our project which is platform providing debt financing service oriented to small and medium enterprises, for one thing, in the early stage when products entering market, market risk is uncertainty about whether small and medium enterprises users meet the requirements of how they should submit their information to our platform. For another thing, market risk is uncertainty about whether financial institutions' results of credit evaluation of those small and medium enterprises that have the need to take out loans can connect with that of our platform seamlessly.

2.1.1 Risk that small and medium enterprises do not submit their operational information regularly.

Managing businesses such as publishing information about enterprise financing and mutual guarantee among enterprises, helping enterprises guarantee each other to take out loan from banks, assisting enterprises in taking out loans and so on, is based on building networks of partnership among enterprises, while networks of partnership are based on business contracts, bills of lading and other operation data provided by enterprises. As for small and medium enterprises users, limited by their scale and management level, they may complete production and operations management badly or manage finance arbitrarily. These facts will cause enterprises to submit unreal or incomplete operation information, or refuse to register on our platform, or just register. In this case, these problems cause losing customers and the difficulty for our platform to expand the market to increase. It's possible that this kind of market risk occurs and it causes spending on the project and the project cycle to increase just a little. Besides, when it occurs, every indicators of the project is guaranteed. Therefore, this market risk is in low level.

2.2.2 Risk that the project can't connect with financial institutions on credit evaluation.

As for financial institutions users, relationship between our platform and those users is not only relationship between provider and users, but also partnership. Through the platform, financial institutions can evaluate credit of enterprises that apply for loans on the platform, and then simplify the process of lending. Also, financial institutions users can participate in the transactions on debt. As an intermediary platform, the platform connects enterprises that have needs of taking out loans and transactions on debt with financial institutions. In the early developing stages of the platform, the recognition of the platform is low and number of users is small, so it's difficult to cooperate with financial institutions. However, after the early stages, the platform will have information that enterprises users submit when registering, their operation data, history of lending and taking out loans and so on. These information and data will be a large amount and derives results of credit evaluation of enterprises. However, the results may be different from those from financial institutions, which has an influence not only on the platform's launching business cooperation, including assisting enterprises taking out loans, helping transactions on debt and so on, with financial institutions, but also on the whole development and market acceptance of the platform. It's also possible that this kind of market risk occurs. Once it occurs, spending on the project and the project lifestyle will increase by a small amount. However, in this case, some important requirements of the project can still be met. Therefore, this kind of market risk is in middle level.

2.2 Credit Risk

2.2.1 Credit Risk of SME Financing

Credit risk refers to the potential loss to the credit party when the party refuses or fails to pay the debt on time and in full. Loans and claims transactions and other activities require enterprises, financial institutions to sign the contract before the borrower to determine the level of credit, so as to determine the loan, transaction request acceptance, and credit lines. Due to the small size, low profitability and unstable operating conditions, small and medium-size enterprises have a lower level of credit. Additionally, they haven’t established a relatively sound credit system. At the same time, because of the small and medium-sized enterprise default cost, especially in the current stage of development in China where the financial system is not effective, the moral risk caused by information asymmetry is severe. It is common that borrower does not take all consequences but chase for their own utility maximization, damaging the interests of the lender's, which increases financing of small and medium sized enterprises credit risk.

2.2.2 Credit risk based on the partnership network

Credit risk is asymmetric, transitive and its data is not available. The asymmetry is that lenders were more likely to recover the loan in the loan contract period and obtain the agreed revenue, but when the loan is default, the lender will suffer massive loss that is far greater than the expected loss of interest income, and the loan is increased with the deterioration of the operating performance of the borrower. Transitivity is in the process of financial transaction the credit risk will be transmitted and extended along with the increase of the trading parties, which will lead to an exponential increase in the total credit risk. Credit risk data is not as easy to obtain as market risk because of the poor liquidity of credit assets, the length of loan holding period and the low frequency of default events. Especially under the environment of the enterprise that China's credit system is not perfect and the credit system has not been established, the serious lack of historical breach default data has seriously affected the establishment of credit risk system. The platform based on trading contract, bill of lading, invoice and other operational data to establish enterprise partnership enterprise network; based on massive historical operational data, borrowing information for intelligent evaluation of enterprise credit, loan audit send claims information, to improve the authenticity and disclosure of data, reduce the credit risk of SMEs to a certain extent.

2.2.3 Credit risk of enterprise financing guarantee business

The platform relies on the enterprise partnership network to promote mutual guarantee between enterprises and loans to financial institutions. When enterprises with financing needs are not able to successfully obtain loans from financial institutions, enterprises can through partner circle of friends issues corporate guarantee request, gain guarantee with certain fee from payment the partnership enterprise network, to obtain loans.Although the loan guarantee enhance enterprises credit, improve the possibility and credit limit to obtain loans from financial institutions, because of the credit enhancement guarantee function, the credit risk often through leveraged amplification, amplifies the power to influence its net assets, and has great influence on the whole economic relationships, which makes individual project guarantee loss will need to be covered by more guarantee business. What’s more, there is a transfer of credit risk between partners, between the upstream and downstream of the industry chain and the industry. If one of the companies has a risk, credit risk will ripple between the related subjects, and the risk of individual project may affect a number of subjects, even lead to more losses directly. What ’ s worse, guarantee corporation undertakes joint and several guarantee liability, once the losses occurs, guarantee corporation will unconditionally subrogate, directly expressed as monetary fund loss.

To sum up, the credit risk is the risk that has a certain probability to happen, and once the risk occurs, will lead to increase funding in general, while the project cycle is greatly extended, produce a bad influence. It has a greater impact on the project target, so the credit risk is the key risk project.

2.3. Operational Risk

Operational Risk refers to the incomplete or failed internal processes, or the risk of loss due to human or system, and the risk also includes the risk of loss caused by external events.

Operational risks that the project "Smart P&L" faces mainly come from technical risk, risk of the security of enterprises' data, risk of credit evaluation of enterprises and risk of information tracking on the platform.

2.3.1 Technical Risk

Technical risk refers to risk of uncertainty about development of new products and new technology in development process of a project. It comes from many aspects and mainly comes from uncertainty about technical success, technology landscape and technical effect.

In the development of project "Smart P&L", technical risk is small compared with other kinds of risks. The project can be divided into several parts, including recording and auditing information from enterprises, building database, applying financial models and presenting matching of relative businesses on the platform. Through specific and clearly defined roles, we find good solutions of these problems. Data will mainly come from information provided by enterprises users and all their transactions on the platform, and will be sent to back end by the front end; then those data will be applied in some financial models to match relative businesses; finally, results are shown on the platform.

To obtain data, the platform will be regularly updated according to audited information about enterprises and their history transactions on the platform, so that credit level of enterprises can be updated continuously. Therefore, technical effects are relatively guaranteed. And uncertainty about technology landscape is mainly shown in how to implement the process from publishing businesses to getting matching results, and the later integrated process where they communicate with each other. This implementation requires multi-technology automation and is involved with cooperation with back end handling businesses. The multi-technology automation has some risks, and that is the uncertainty about technology landscape. For another thing, with development of small and medium enterprises, situation about loans and loans guarantees is changing all the time and that will become a unpredictable challenge to technical implement because financial models also need to develop and become more and more complex with this kind of development. In general, the technical risks that the whole project faces are relatively in low level.

2.3.2 Risk of the security of enterprises' data

The platform may be attacked by hackers for technical or system reasons, which will cause information leakage or dropout, or even cause enterprises and financial institutions enormous losses. Once this kind of accident happens, it will cause users' distrust and leaving, and even cause a large loss of users, increasing much difficulty for the platform to run normally and to be maintained. Last but not least, flaws existing in internal management may also make it possible for insiders to reveal information about users for profit.

2.3.3 Risk of credit evaluation of enterprises

Risk of credit evaluation of enterprises refers to the results of credit evaluation may be incorrect for some reasons, increasing risks of loans among enterprises and financial institutions, which has a bad influence on profit and reputation of the platform. This kind of risk results from two aspects.

Firstly, if internal control is faulty, then it will become easier for insiders to alter information provided by enterprises users, like information about asset, operation situation, credit record on the platform, etc. Such behavior interferes with audit process and increases risk of loan default, leading bad effects on the platform. In general, faulty and loose internal management will increase risk of this kind since it doesn't well guide behaviors of insiders. Secondly, this kind of risk also comes from some difficulty to ensure the authenticity of information provided by enterprises. If the platform receives fake information that has not been recognized and uses it in the process of credit evaluation, then the results are probably unreliable, decreasing the validity of results and increasing risk of loan default further.

2.3.4 Risk of information tracking on the platform

Since the platform has some difficulty to track actual offline situation all the time, information the platform obtains may not accord with facts. For example, in order to reduce charge when taking out a loan, enterprises users can tell the platform a smaller amount of money than how the amount of loan they get with the help of the platform. Obviously, this problem decreases profit of the platform.

2.4 Risk of policy and regulation

On the borrowing business between enterprises, according to the Supreme People's Court promulgated in 1991, "on the people's court to consider a number of cases of borrowing cases" on the private loan is limited to at least one party is a citizen (natural person), and between enterprises and enterprises Borrowing, in accordance with the Central Bank promulgated in 1996

"General Principles of Loans" and the Supreme People's Court of the relevant judicial interpretation of the provisions of the general violation of national financial supervision was identified as invalid, which in a very long time limit the development of inter-enterprise lending.

Although the judicial interpretation of the Supreme Court in September 2015 began to recognize the legal and effective inter-enterprise private lending, but in the inter-enterprise lending rates and other factors still lack a clear provision. At the same time, although the country has encouraged the development of the private lending business, which has included the inter-enterprise private lending since 2010, the local government has held a wait-and-see attitude for the signing of an inter-firm loan contract for some time thereafter. In addition, the platform for the way of mutual assurance between enterprises business, is still a lack of precedent, with the policy and regulations relatively uncertain.

2.5 Reputation risk

Reputation risk is a derivative of other risks. This risk is mainly reflected in the financial institution customer relationships. As the financial business reputation and business of operating performance and financing costs are closely linked, so although this measure of risk is very suffering, it gained more and more attention.

Reputation is one of the core competences of the platform "Smart P&L". When the platform has a huge reputation, other users will be more willing to use the platform and furthermore, a virtuous circle is formed because of agglomerate effect. However, if a good reputation can't be formed in the early developing stages, then it will be a large influence on the enterprise.

Commonly reputation risk is measure through some agent index, for example, the proportion of high-risk account is a commonly used indicator. If the financial institution to absorb a lot of detailed information, including accounts of beneficiaries unable to obtain, or between trading accounts are often not appropriate accounts pools, it may reflect the financial enterprise has a high reputation risk. Some other possible risk indicators include regulatory compliance indicators, customer relationship indicators (such as the number of legal disputes and seriousness, customer complaints, etc.), internal governance indicators (such as various accidents, cooperative disputes, internal disputes and work image, etc.). Measuring reputation risks related to consider the impact of changes in risk factors, and to consider the effect of various risk mitigation tools.

Reputation risk is difficult to make accurate quantitative analysis, it should focus on the management of reputation risk in terms of internal governance, related methods include establishing robust client risk contour file. It is important to establish clear and secure customer complaint handling procedures, improve risk management responsibilities and roles. In an ideal risk management environment, financial institutions should establish effective mechanisms, using a variety of qualitative and quantitative risk measurement and analysis, development of a variety of reasonable management system and rules for reputation risk.

2.6 Overall risk identification of project

According to the above 5 major aspects of analysis, we combine risk matrix model for analysis. The original form of the risk matrix is as follows:

Table 1. Risk matrix model

Risks(R)	Impacts(I)	Risk Probability (RP)	Risk Rating(RR)

Among them, the risk column (Risks) describes the specific risk factors; the influence column (Impacts) to assess the impact of risk on the project, generally Risk rating is divided into five levels; the risk probability column (Risk Probability) estimates the risk occurrence probability; the risk grade column (Risk Rating) is shared by the impact column and the risk probability column

Table 2. Definitions of risk impact levels

Risk impact level	Definition
Critical	Once the risk occurs, the target of the whole module fails
Serious	once the risk occurs, will lead to a serious decline in the target module targets
Moderate	once the risk occurs, the corresponding module goals are moderately affected, but it can partially meet the requirements
Minor	once the risk occurs, the corresponding module targets are less affected, the project still can meet the requirements
Negligible	the corresponding module target is not affected, and the project still can be fully achieved

Table 3. Explanation on the probability of occurrence of risk

Range of risk probability	Explanation
0-10%	Very unlikely to happen
11-40%	Unlikely to happen
41-60%	may be expected to occur in the project
61-90%	may happen
91-100%	most likely to happen

Table 4. Risk Rating

Impacts / Risk probability	Negligible	Minor	Moderate	Serious	Critical
0-10%	Low	Low	Low	Medium	Medium
11-40%	Low	Low	Medium	Medium	High
41-60%	Low	Medium	Medium	Medium	High
61-90%	Medium	Medium	Medium	Medium	High
91-100%	Medium	High	High	High	High

Therefore, based on the previous analysis of the risks in all aspects of the project, we can see that the overall risk identification of the project can be implemented through the following table.

Table 5. Overall risk identification of project

Risks(R)	Impacts(I)	Risk Probability (RP)	Risk Rating(RR)
Market risk	Critical	41-60%	High
Credit risk	Serious	61-90%	High
Operational risk	Minor	11-40%	Low
Risk of policy and regulation	Minor	11-40%	Low
Reputation risk	Serious	61-90%	Medium

3. Risk measurement based on risk matrix

3.1 To determine the risk weight

After having the risk grade (RR), it is also necessary to subdivide the impact of each risk on the project and introduce quantitative methods to determine the risk of the project as a whole. There are three initial risk levels: high, medium, and low. In order to identify the most critical risks from these risks and to provide more specific and accurate guidance for the development of risk management plans, the Borda sequencing method is used. Specific algorithms are as follows:

Let N be the total number of risk factors, I for a particular risk, and K as a criterion. There are two criteria for risk matrix: the risk is affected by k=1, and k=2 is the risk probability RP. RI. If the r_{ik} represents the risk level of the risk I under the standard k, then the Borda value of the risk I can be given by the following:

$$b_i = \sum(N - r_{ik})$$

After calculating the Borda value of each risk factor, the risk weight (Risk Weightiness) is used to describe the weight of each risk factor. The value of the risk weight RW is determined by the Borda value and the risk grade, and the sum of the weights of all risks is 1.

Table 6. System project risk weighting

Risks(R)	Impacts(I)	Risk Probability (RP)	Risk Rating(RR)	Borda	Risk Weightiness (RW)
Market risk	Critical	41-60%	High	1	0.24
Credit risk	Serious	61-90%	High	0	0.3
Operational risk	Minor	11-40%	Low	2	0.2
Risk of policy and regulation	Minor	11-40%	Low	4	0.1
Reputation risk	Serious	61-90%	Medium	3	0.16

According to the Borda in the table, the results of the risk ranking of the venture capital are as follows: credit risk, market risk, operational risk, reputation risk, risk of policy and regulation.

3.2 To calculate the overall risk of the project

After quantifying the risk grade RR of the risk matrix, and then multiplying the risk weights in each risk, the overall risk level of the project can be RT:

The overall risk level of the project is RT=0.686, and the overall risk is at a moderate level.

Risk rating(RR)	Quantization standard
High	1
Medium	0.6
Low	0.2

4. Countermeasures for risk control

Aiming at above risks, we take countermeasures below for risk control.

1. To deal with market risks

We found that the level of market risk second high, and once it happens, it will make our SME information standardization greatly reduced and make our platform highlights completely disappear. Therefore, we should take all measures to guard against market risks. Before applying into the market, we will make effective and effective communication, adjust according to the market and industry evaluation, and ensure that the information of the enterprise is true and effective on the registration side. At the same time, through repeated communication with the cooperative financial institutions, the credit verification system of the platform is continuously improved and the lending process of the financial institutions is effectively helped.

2. To deal with credit risk

We found that credit risk ranks the first and its impact on our platform is of great significance. Therefore, we need to strengthen the process of standardizing the information of enterprises, and give full play to the characteristics of mutual understanding among partners in the "partnership network" to carry out risk control. In cooperation with the relevant financial institutions, repeated communication, absorb financial institutions credit audit requirements, in accordance with the requirements of financial institutions to provide the most intuitive, detailed and effective enterprise platform credit information. At the same time, enterprises will constantly adjust their registration information, update them regularly and cooperate with the third party credit bureaus, so as to keep the integrity and effectiveness of the credit information. In addition, the platform will also provide a standardized online intention to sign process, using the credit score linked way to stop the credit risk of enterprise default.

3. To deal with operational risk

The threat of technical risk to our consultation system is still very important. Though the risk is small, but it should not be underestimated. There should be relevant prevention strategies. In the aspect of enterprise information audit and enterprise information security, we will be in strict accordance with the corresponding information can only be seen in enterprise network "principle for further development, and strengthen the training and management platform of employees, reduce the occurrence of operational risk.

4. To deal with the risk of policy and regulation

Although there is a trend that the government encourage private lending and the expected policy for the long-term development of the platform is favorable, we cannot belittle its importance. We therefore urge urged countries to accelerate the implementation of enterprise and improve the security and reduce consumer lending, scruples, also called on enterprises to establish the perfect credit rating system for third party development credit agencies and security agencies.

5. To deal with reputation risk

As the industry's first entrants will quickly get the leader position, so the platform can develop and maintain a good reputation in the early stage of entrepreneurship, and it is very important to complete the successful promotion. In this context, the platform in the prophase of the promotion process, increase promotional efforts, improve the visibility and influence through various forms of advertising, and through the management fees and waive the value-added services and quickly occupied the market, let the small and medium-sized enterprises fast receiving and recognition, so as to establish a good reputation.