A Decision Support System for Borrower's Loan in P2P Lending

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Abstract─**Recently, P2P lending has become a hot research topic in finance, especially after the global financial crisis. Most existing research did not consider the efficiency from the borrowers' perspective. This paper proposes a decision support system based on intelligent agents in P2P Lending for borrowers. The system provides borrowers with individual risk assessment, eligible lender search, lending combination and loan recommendation. The system is developed in JADE and evaluated with the PROSPER's sample data. The result shows that, the model can meet borrower's needs better and help borrower getting loan more efficiently. Furthermore, it contributes to finance industry by accelerating the funds flow and does favor to economic recovery.**

Index Terms─**online P2P lending, loan recommendation, decision support system, intelligent agent system**

I. INTRODUCTION

Financial crisis and subprime crisis have caused serious problems in finance over the past years. However, at the same time, large number private capital is out there idle and not efficiently utilized [1]. P2P lending or person-to-person lending (also known as peer-to-peer lending or social lending), helps the free funds to flow and favorable to economic recovery [2]. Therefore, P2P lending attracts much research efforts in recent years.

Most of P2P lending platforms are built online [3].

This mode reduces the lending risk and can raise the ratio of successful transactions. Previous research efforts have been focused on loan risks, credit of borrowers and so on. However, the research on loans' efficiency is insufficient. We noticed that the borrower or lender accepts different loan expectation for different reservation utility, and the expectation will impact on whether he will successfully make a deal. The user's expectation is mainly composed of loan rate, risk and loan purpose, all of which are subjective. The process of the borrower's decision is complex and uncertainly. Borrowers need a decision support system (DSS) to help them make decision. With the development of artificial intelligence and intelligent agents, they can be integrated into a DSS. That system further can be used to help borrowers to make decision. All these motivate our research in online P2P lending especially to design a DSS to help borrower getting loan.

In intelligent science, ontology is widely used as knowledge representation, and intelligent agent is used to make decision such as recommendation [4]. This work proposes a DSS model which used to recommend loan design to borrower in P2P lending (P2PL-BCS). P2PL-BCS uses ontology to set up the knowledge base, and uses intelligent agents to recommend the most optimum lenders to borrower by their expectations. As far as we know, most of the existing work considers recommendations for lender only [5][6]. In order to introduce the work, the rest of this paper is organized as follows. Section II gives background of this work. Section III analyzes loan process of online P2P lending. Section IV introduces realization of the model. Section V is case study and evaluation of the model. At last, Section VI is conclusion of the research.

II. BACKGROUND

This section gives the background of P2P lending, Herbert A. Simon's model, background of intelligent agent system and intelligent agent-based DSS. All of

them are the base of our research.

A. P2P Lending

When loan come from multiple lenders or multiple borrowers in P2P lending, the circumstance becomes dynamic and the loan process becomes complex [5]. Borrower can get loan from different lenders at different loan rate. In his loan, He meets higher rates or lower rates at one time. But these rates aren't important because the borrower cares for mixed-rate only. It is same to lender. Furthermore, decentralized loan will reduce the lenders lending risk. So, borrower needs to find the optimal lenders and get ideal loan. But it is very difficult for borrower to make decision in dynamic lending circumstance.

The service of DSS for borrowers could make loan process more efficiency. This paper mainly analyzes the loan for borrower. In fact, loan process involves the translation of borrower's objectives into specific plans and implements them. Refer to the website of PROSPER and the ordinary decision process [7], the borrower's P2P lending process is logical, six-step procedure: The first step of borrower's P2P lending is to determine the borrower's current credit situation with income, loan use, loan period and debts so on. The second step involves developing borrower's financial goals indicate the loan needs and the loan constraints (e.g., the credit, the rate, and regulation restrictions). The third step is identifying alternative courses of action. Considering all of the possible loan plans will help to make more effective and satisfying decisions. The fourth step is evaluating the alternatives, taking borrower's credit situation, individual values, and current economic conditions into consideration. The fifth step consists of creating and implementing a loan plan. This step requires choosing ways to achieve borrower's goals. The last step is to reevaluate and revise the loan plan. Loan is a dynamic process that does not end when a borrower takes a particular action. Changing individual, lender, social and economic factors may require a reassessment of loan decisions. Regularly evaluating the loan decision will help to adjust loan plan.

B. Herbert A.Simon's model of the decision making process

In Herbert A. Simon's classic work [8], he proposed a decision process comprising four phases —intelligence, design, choice, and review. Referring to Simon's model and the borrower loan process described in the previous section, we formulated the decision-making process model for borrower, which includes gathering information about the loan problem situation(intelligence), identifying various alternatives (i.e., formulating models) through which the problem can be solved (design), choosing the best alternative that meets the criteria (choice), and evaluating and revising the alternative (review) (see Section 3 for more details). It is clear that Simon's model of the decision-making process matches the loan process very well. However, very little previous research has adapted Simon's model to the loan domain.

C. Intelligent agent-based DSS

The development of intelligent agents (IAs) and multi-agent systems (MASs) are becoming popular in the field of IS research [9,10]. Wooldridge and Jennings [11] suggest a precise description of agents: one that may be widely adopted in artificial intelligence communities as well as general computing areas. An agent is computer system that is suited in some environment, and is capable of autonomous action in that environment in order to meet its design objectives. It has a set of goals, certain capabilities and some knowledge about the environment. In order to achieve its goal, agent needs to reason about its environment and other agent's behavior, to generate plans and implement these plans. Many agents are grouped together to finish certain specific task. They are partners of MAS.

In recent years, there has been considerable growth of interest in the design of a distributed, intelligent society of agents capable of dealing with complex problems and vast amounts of information collaboratively. Various researches have been conducted into applying IAs toward real-word problem. Ontology is core of intelligent agent. It plays an important role in artificial intelligence field in knowledge representation, language understanding and so on [12, 13]. In this paper, ontology was used as knowledge representation in P2PL-BCS. According to the reasoning on ontology, the optimal loan was recommended to borrower.

The potential contribution of intelligent agents to DSS has been described as enormous [14]. This has been reemphasized in special issue of DSS journal. Intelligent agents appear in an increasing number of DSS applications. Intelligent DSS are able to provide services to users and they try to satisfy the user's requirements through interaction, cooperation, and negotiation. In order to recommend optimal loan design to borrower, intelligent agents are used in DSS for borrower's loan.

III. THE LOAN PROCESS OF P2PL-BCS

The design purpose of our research is to propose a framework for an intelligent agent-assisted DSS that targets improved borrowers' loan efficiency. In order to realize this purpose, we need to describe the loan model firstly.

A. The model of borrower's loan in P2P lending

To the borrower, when he wants to get loan, he logged into the platform and input his requirements, and the P2PL-BCS lists the loan designs in order of the feasibility of a loan.

Let the loan recommendation rule denote as f, the process of borrower denote as formula (1):

$$Dl = f(Bi, Re) \tag{1}$$

Here: Dl is the loan list of P2PL-BCS results for the borrower; Bi is the borrower's request information; Re is the information which can be used to help P2PL-BCS decision. Rule f is defined by borrower which meets his loan conditions in loan rate, loan period and so on(e.g., Borrower defined f as loan rate lower than 0.15, loan

period is longer than 60, loan use is tuition; Lender's information is that loan rate is higher than 0.12, loan period is shorter than 70, loan use is anything. Then the lender is electable to borrower. If lender's loan period is shorter than 30, P2PL-BCS doesn't recommend the lender to the borrower by rule f). This formula explains that loan design can be computed by the borrower's information and the lender's information by recommendation rule f.

So, borrower get the loan is determined not only by the borrower but also the lender in P2P lending. The partiers have different utility of the loan rate, loan amount, and loan period and so on. Borrower can choose from many lenders and lender can choose from many borrowers too. In a loan, borrower can choose from different lenders at different loan rates. The loan list will tell the borrower who are the optimal lenders. All the recommendation is based on the reasoning process of the knowledge to solve the problem.

B. The DSS model of loan in P2PL-BCS

In order to realize above purpose and achieve decision support effectiveness, an ideal system should be built with reference to the adoption of a decision-making theory. We have developed a conceptual process model based on the well-known Simon framework [8], which identifies four different phases—intelligence, design, choice, and review. By comparing Simon's decision-making process model with borrowers' loan process which was analyzed above, we found the process logic matches perfectly, as shown in Fig.1.
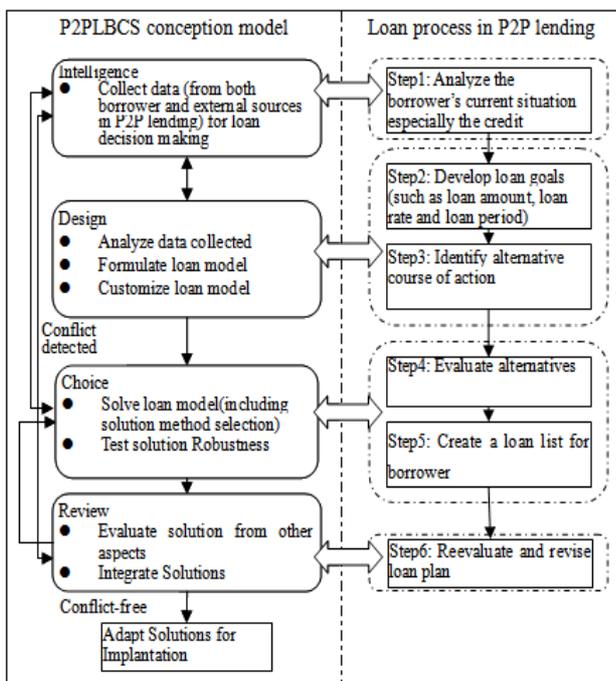

Fig.1: P2PL-BCS model mapping to loan process

According to Simon, the intelligence phase involves searching the environment for conditions calling for borrowers. However, as this phase relates to borrower's loan in P2P lending, it is difficult to articulate the general

reasoning process leading up to a problem statement. So the most common form of recommendation for this initial phase in designing P2PL-BCS is to provide convenient access to a variety of information sources, Such as the borrower's information, the lender's information and any external electronic sources. Use of agents for this task has been widely advocated. This intelligence phase is named "fact finding" procedure too.

In design process, borrower's loan model needs to be developed. To achieve this, it is necessary to first analyze the data collected from the intelligence phase. It is very important at this stage to assemble the information in order to establish a borrower's future intentions, goals, and ideals. This process is also the process translates borrower's goal into special plans. Furthermore, different utility level users have different tolerance to the loan rate even if the loan goal is same. It is necessary to develop tailored loan models for different users with various loan goals. The loan model is an optimization model, defined by decision variables, constraints and so on.

In the choice phase, the "solve model" activity is not as straightforward as it may first appear. There can be multiple variants of a solution method along with specialized computer implementations of the same. For example, we use matching method to solve P2PL-BCS model. To every electable lender, we compute the loan's possibility score and summarize the score by every loan design. At last, P2PL-BCS recommend loan design to borrower by score's descending order. The score is computed as formula (2):

$$Scorebl_i = \sum_{j=1}^{n} b_{ij} * l_{ij} * w_j \qquad (2)$$

This formula denotes score to every loan design. To every borrower, there are many kinds of loan design. To every loan design such as i, borrower can get loan from n lenders. The relativity of borrower and lender is described as $b_{ij} * l_{ij}$. The weight which loan design mapped on the borrower to the lender is w_j.

In the final review phase, the solution made from previous phases will be assessed. Since this solution is generated mainly from a financial perspective, a number of other aspects, such as loan risk and loan use, need to be evaluated in light of the solution. If there are any conflicts detected between different borrowers' interests, the previous solution will be revised based on some predefined rule-reasoning. This choice-review iteration will continue until the choice is conflict-free. Finally, the integrated solution is sent to the borrower for implementation.

Many research studies show that borrower's loan is a complex decision situation in which decision makers attempt to gather a good deal of information before making their final choice. Therefore, in our proposed framework, with the design, choice, and review phases, information corresponding to their tasks would be requested from the intelligence phase when required (bidirectional arrow means information requesting and providing).

IV. DESIGN AND DEVELOPMENT OF P2PL-BCS

With the loan implementing, borrower's credit and situation is changed now and then. The circumstance of borrower is high dynamic, uncertain and complex. Intelligent agent is widely used to solve problem in this kind of environment. In order to develop DSS for the borrower, data model was proposed firstly.

A. ontology of P2PL-BCS

Ontology is the base of P2PL-BCS. In P2P lending platform, borrowers face many resources, such as lenders, funding and other borrowers. According to the borrower's classify of www.prosper.com which is one of the largest P2P lending platform, The ontology which represents the knowledge and relationships of borrowers and resources have three primary kinds of classes and four types of relationship. The classes are borrower's class, resource's class and lender's class, and the relationships are represented by four types of arrows as subclass of, object property, instance of and datatype property. To this figure, datatype property is not used, as shown in Fig.2.
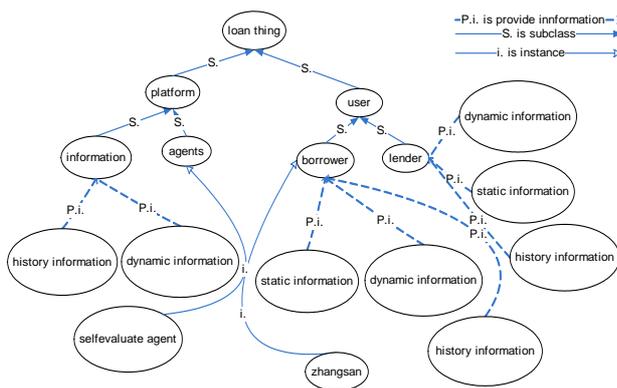

Fig.2 classes of ontology in P2P lending

These classes are basic data model for borrowers' DSS in P2P lending. They represent knowledge of borrower's loan process. All borrowers' loan design was computed by these data model. When we develop these ontologies, they are described as Web Ontology Language (OWL) first. To fig.2, these ontologies are described as follows:

```
……
<SubClassOf>
  <Class URI="&Ontology1277715002984;agent"/>
  <Class URI="&Ontology1277715002984;platform"/>
</SubClassOf>
<Declaration>
  <Class URI="&Ontology1277715002984;agent"/>
</Declaration>
……
```

OWL specification includes the definition of three variants of OWL, with different levels of expression. These are OWL Lite, OWL DL and OWL Full. When we use ontology, we call its OWL as we used XML (extensible markup language) which is an opening language to developer.

In fig.2, we customized ontology for borrower and lender individually. When we model lender and borrower within ontology, the ontology becomes more complex especially when one acts as lender and borrower at the same time. So, in our initial research, we defined ontology for borrower and ontology for lender separately.

To borrower's ontology, borrower's data model (borrower's model) is very important. It describes borrower's information such as dynamic information, history information and static information. In order to realize borrower's self-evaluation that it isn't in traditional online P2P lending as PROSPER, the borrower's model needs to be enhanced.

Reference to PROSPER's borrower's model, the borrower's model was defined as follows:

Br= (bi, hi, di), bi is borrower's basic information, hi is borrower's loan history and di is borrower's dynamic information.

bi= (id, password, name, address, sex, occupation, credit number, identity number, education, e-mail, telephone, age). In P2P lending, borrower's basic information cannot be changed frequently. The broker can find the borrower if there are some question in the loan. Some basic information will affect the loan such as occupation, age and so on.

Hi= (Id, loan number, lender, amount, rate, lender occupation, period, date1, date2, use). In P2P lending, loan history is main information to evaluate borrower's current credit. Id is borrower's loan order. Borrower maybe get loan from different lenders every time. So, we can split the loan design into part by lender. Loan number is the order that borrower get loan from lender. Amount is the money that borrows from one lender. Date1 and date2 are the loan's creation date and end date.

Di= (loan amount, loan period, current credit, rate, use). Di is temporary information of borrower's loan. It represents the requirements of borrowers. Some information (loan amount, loan period, use) comes from the borrower's input and other (current credit, rate) comes from P2PL-BCS self-evaluation.

In traditional online P2P lending, the lender's model is very simple. There is only lender's basic information because lender bids loan in artificial way. In P2PL-BCS, borrower gets loan automatically. When borrower gets loan, he needs to be familiar with lenders' lending. So, lender's model needs to be extended as borrower's model. In order to record loan information in P2P lending, broker model was set up as borrower's model, too. When borrower does self-evaluation, it will reference the information comes broker model.

B. P2PL-BCS architecture

In this paper, intelligent agent is used make decision for borrower. As discussed in the previous section, Simon's decision-making process logic was employed to model the P2P lending process, which in turn was converted to the design architecture of P2PL-BCS consisting of entities and agents, as shown in Fig.3.

Fig.3 is the architecture of P2PL-BCS. Borrower's loan is computed by these agents. Entities provide detailed data for agents.
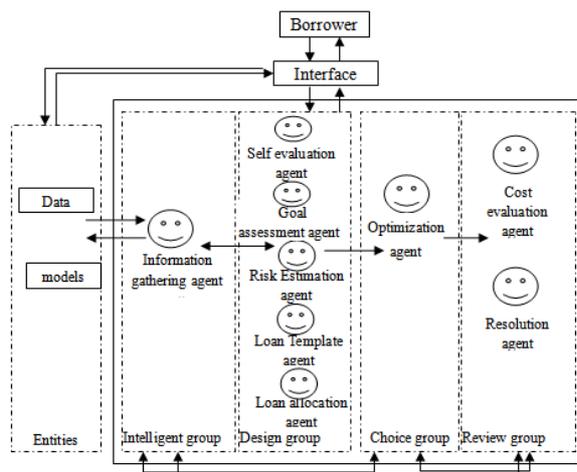
Fig.3 P2PL-BCS architecture

External entities include data and models that provide information such as loan figures and models etc., to different agents, if required. The intelligence group contains information agent that obtain, aggregate, and assess relevant information from the external electronic sources. All of the design, choice, and review groups may request information relating to their task from the Intelligence group, if required. The design group contains analyzing agent (A) and proposing agents (P). They are:

- Self-evaluation Agent (A): It is used to analyze borrower's circumstance (i.e. Credit, rate etc.) and help borrower to identify his loan requirement. Self-evaluation Agent first assesses borrower's status by interacting with borrower or accesses entities. Then it proposes a list of loan suggestion.
- Goal Assessment Agent (A), It is used to help the borrower to define his loan goal. It reasons on borrower's profile and system's dynamic information. This agent also allows borrower to define his loan goals (other than those provided in the list) to the agent. In this way, borrower can customize loan rate, loan means and other information. Loan means include bid or negotiation directly.
- Risk Estimation Agent (A): For each loan goal, the risk estimation agent evaluates the loan risk according to the borrower's related information which is credit, loan history and other available information. This agent tells the borrower get the loan probability.
- Loan Template Agent (P): For different kinds of utility-tolerance borrower, the loan template agent generates different loan templates by using fuzzy rules [8] for different loan profile models. Borrower can choose his favorite template as his portfolio and customize this template (i.e., adjust the loan rate, loan amount or loan period) with his own preferences.
- Loan Allocation Agent (P): It is used to provide loan allocation recommendations to different lenders automatically.

There is only one Optimization Agent in the choice group. It uses recommendation technology to get the score and list the designs by score descending at different types.

The outcome of the design and choice groups is an optimized loan solution, which contains a selection from a weighted loan combination that suits the borrower's objective and suggested allocations that maximize the expected return while accepting the degree of cost and risk the borrower can tolerant. The Review group consists of two agents: cost evaluation agent and resolution agent. The first one is used to compute the loan cost and give advice to borrower; the last one is used to check the conflict between loan restrictions. If there is no contradiction between the interests of the Design and Choice Groups and the Review Group, the investment optimization advice will be sent to the borrower, indicating that the entire process is complete. If there are contradictions, the Resolution Agent will take some initiatives to make a judgment and resolve the conflict. Of course, the system can adjust the borrower profile according to the borrower's selection.

C. Prototype development

P2PL-BCS is a distributed problem as discussed previously. The tentative solutions from different agents will iteratively exchange until the wealth maximization objective is met, which makes P2PL-BCS a distributed constraint satisfaction problem.

At the bottom level, the database is Access which is the simplest database in office; the operating system is Java Expert System Shell and Scripting language (JESS) rules which are adopted as basic implementation language. In the prototype system, each agent contains a JESS rule set for reasoning. The reasoning results are asserted JESS facts. A popular language for agent communication, Knowledge Query and Manipulation Language (KQML), is also employed. Furthermore, we use Protégé to set up the ontology. Protégé, which is an open platform for ontology modeling and knowledge acquisition, is used to edit ontology discussed in above section into JESS. At last, we use Jade to develop the agent.

D. Prototype system operation

The section is used to demonstrate the system's operation. Assume that a borrower want to get loan. However he doesn't know the probability to get loan on the condition of his loan goal. So, he wants P2PL-BCS to give him some advice and to recommend some lender. In addition, his loan is used to repayment and he has no job, which requires the borrower to pay more interest for his credit.

A case is that borrower wants to get loan by P2PL-BCS. Loan amount is 1000$ and loan period is 60 days. Loan is very necessary to him and he wants to pay less interest. He needs to register an account in P2PL-BCS at first time for system identify borrower by account in future. He selects system's service in two ways.

One is that he inputs his requirement and let the

system search eligible lender for him to negotiate. In this way, his loan is inefficient. He doesn't split the loan. When the lender finds loan amount is large, he may ask the borrower to pay more rates or unwilling to lend money to borrower. Bid is often used in P2P lending, but it takes much time to get loan. So, loan is inefficient.

Another way is that borrower makes decision with the help of intelligent agents. When borrower login, Information Service collects the most updated information and models, and forwards all collected information such as loan history to Recommendation Service. The Recommendation Service returns borrower utility-tolerance level analysis report, loan template, and loan allocation recommendation to borrower. Then the borrower modifies his loan details and specifies his loan goal. Based on that, the Recommendation Service gives some loan advice, which is sent to Review Service to do cost evaluation and loan resolution.

According to the initial loan solution and evaluation report, P2PL-BCS list loan designs by descending order. In addition, in order to get loan quickly, borrower should adopt dispersible loan and the amount of every part is same to lenders money. And, in order to pay less interest, borrower needs to adopt different loan periods by his own ability of repayment. In loan process, some conflict will happen because borrower defined many loan restrictions. The report will be sent to Recommendation Service to be updated until there is no further conflict. P2PL-BCS implementation architecture as Fig.4.
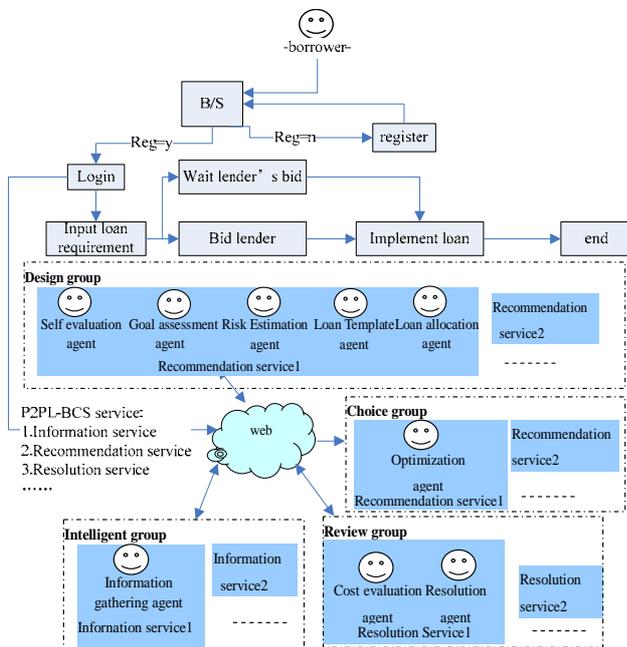

Fig.4 P2PL-BCS implementation architecture

V. CASE STUDY AND EVALUATION

This paper adopts instance that comes from www.prosper.com. In PROSPER; we select the instance in random way.

(1) The borrower who enrolled the loan information on 2010-05-09T08:15:07. He got his loan for house repairs by prosper-P2P lending platform in four days on

2010-05-13. During this period, the lenders bid for his loan when they found this information. There are 21 lenders bid this loan. The amount is much more than the borrower's needs. But, the borrower must wait for 7 days to select the bid for the system set 7 days as a cycle. When the loan is urgent to the borrower, all the bid is low efficiency.

In order to realize loan recommendation, we set the lender model according to borrower model of the prosper.com. When the borrower login in P2PL-BCS, he first get the self-evaluation from the system. At last, the system gives a report to the borrower about loan advice after scientific computation. If the borrower customizes the loan as immediately and there are enough lenders to be chosen, the borrower can get the loan very soon. The borrower can make appointment to the appropriate lenders in his valid requirement cycle. In this way, the loan efficiency was improved.

(2) The borrower who enrolled the loan information on 2010-05-07T18:22:26. He got his loan for paying off the current prosper loan. Seven days after his loan information bulletined, there is still no lender bid his loan. Through the borrowers' history, we found that the borrower set the loan rate is very low.

If the borrower uses P2PL-BCS, the system will give him some advice about the rate and other information according to the system self-evaluation when he logged in the system. If the borrower needs this loan eagerly, he will set high rate or modify his requirements to his loan. Or else, he can select other way. He needn't to make his decision after 7 days. So, in P2PL-BCS, the loan efficiency was improved.

(3) In P2PL-BCS, the borrower can customize the loan information according to his requirements. He can get lower loan rate by using more time to search the optimal lenders. He can select the means by waiting lender bid or search lender positively.

P2PL-BCS provides more ways to help borrower getting loan. When the borrower logged in, the system gives the borrower self-evaluation first. It helps borrower to design the loan more scientifically. It allows the borrower customizes his requirement and get optimal loan by setting the loan's information cycle or getting loan's way. It uses intelligent technology to help borrower getting more reasonable loan, and we let bid to find potential lender. It is more efficient and applicable to borrower.

VI. CONCLUSION

In order to improve the efficiency of P2P lending, we propose an intelligent DSS model for borrower in P2P lending. The ontology is used to represent the knowledge model, the recommendation methods are used to help borrower make decision by DSS, and the intelligent agent is used to develop the prototype. At last, it used examples which are collected from www.prosper.com-- one of P2P lending platform to evaluate the reliability and validity of the model.

In future research, the recommendation method need to be improved and the borrower model need to be

enhanced because borrower's model provides key information to borrower's self-evaluation and it affects his loan efficiency. P2PL-BCS needs to be developed furthermore and be used in practice.

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APPENDIX A ONE EXAMPLE IN WWW.PROSPER.COM FOR CASE (1)

<Listing><AmountFunded>1000.00</AmountFunded><AmountRemaining>0.00</AmountRemaining><AmountRequested>1000.00</AmountRequested><BankDraftFeeAnnualRate>0.00000</BankDraftFeeAnnualRate><BidCount>21</BidCount><BidMaximumRate>0.32950</BidMaximumRate><BorrowerCity /><BorrowerMaximumRate> 0.35000</BorrowerMaximumRate> <BorrowerRate> 0.33000</BorrowerRate><BorrowerState>PA</BorrowerState><Category>2</Category><CreationDate>2010-05-09T08:15:07</CreationDate><CreditGrade>C</CreditGrade><ProsperRating>HR</ProsperRating><DebtToIncomeRatio>0.13000</DebtToIncomeRatio> <Description>This loan will be used to… Pay for some unexpected home repairs.

My financial situation: I am a good candidate for this loan because… Good income and have been with my job for 15 yrs. Credit went down a bit after my wife and I decided we would struggle to raise the children with one income instead of daycare. We had a bit of credit card debt at the time. Doing better now, but the credit is repairing at a snail's pace.
My income has since become better and the struggle financially was well worth it.

Monthly net income: $5,600
Monthly expenses:
Housing: $ 930
Insurance: $ 96
Car expenses: $ 170
Utilities: $ 275
Phone, cable, internet: $ 170
Food, entertainment: $ 700
Clothing, household expenses $100
Credit cards and other loans: $ 150
Other expenses: $ 150</Description><Duration> 7</Duration> <EndDate>2010-05-13T09:47:28</EndDate><FundingOption>Open For Duration</FundingOption><GroupKey /><GroupLeaderRewardRate>0.00000 </GroupLeaderRewardRate> <HasVerifiedBankAccount>1</HasVerifiedBankAccount> <Images><NameValuePairs>< NameValuePair><Name></Name><Value> http://images.prosper.com/listing/457540/1726435865.jpg</Value></NameValuePair></NameValuePairs></Images><IsBorrowerHomeowner>True</IsBorrowerHomeowner><Key>568C348278920767935E294</Key><LenderRate>0.33000</LenderRate><ListingNumber>457540</ListingNumber><MemberKey>E65B3417916931106BC5477</MemberKey><PercentFunded>1.00000</PercentFunded><StartDate>2010-05-10T16:20:02</StartDate><Status>Completed</Status><Title>Home repairs</Title> <ModifiedDate>2010-05-13T10:44:35</ModifiedDate> <ProductSpecID>1</ProductSpecID> <LoanTermInMonths>36</LoanTermInMonths></Listing>

APPENDIX B ONE EXAMPLE IN WWW.PROSPER.COM FOR CASE (2)

```
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</AmountRequested><BankDraftFeeAnnualRate>0.00000</BankDraftFeeAnnualRate><BidCount>0</BidCount><BidMaximumRat
e>0.14990</BidMaximumRate><BorrowerCity /><BorrowerMaximumRate>0.14990</BorrowerMaximumRate>
<BorrowerRate>0.14990</BorrowerRate><BorrowerState>CO</BorrowerState><Category>7</Category><CreationDate>2010-05-0
7T18:22:26</CreationDate><CreditGrade>B</CreditGrade><ProsperRating>E</ProsperRating><DebtToIncomeRatio>0.13000</De
btToIncomeRatio><Description>This will be my 4th Prosper loan. I&#39; I have always been a good borrower on here and will
continue to be. I&#39;m going to use this money to pay off the current prosper loan that I have and take a vacation. &#60;br
/&#62;&#60;br /&#62;Thanks!</Description> <Duration>7 </Duration> <EndDate> 2010-05-13 T07:36:53</EndDate>
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</GroupLeaderRewardRate> <HasVerifiedBankAccount> 1 </HasVerifiedBankAccount> <Images /><IsBorrowerHomeowner>
False</IsBorrowerHomeowner> <Key>F6143484165961293BAEEBE</Key> <LenderRate> 0.14990</LenderRate>
<ListingNumber>457408</ListingNumber><MemberKey>313C336469097937550FFD6</MemberKey><PercentFunded>0.00000</
PercentFunded><StartDate>2010-05-10T16:19:14</StartDate><Status>Withdrawn</Status><Title>4th Prosper Loan</Title>
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<LoanTermInMonths>36</LoanTermInMonths></Listing>
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