

# Model Analysis of Risk Supervision and Coordination Development of Internet Finance

Wuchao Zhao<sup>1</sup> and Qing Tan<sup>1, a \*</sup>

<sup>1</sup>Luoyang Normal University, Luoyang, 471022, China

<sup>a</sup>edutanqing@163.com

**Keywords:** Internet Finance; Third Party Payment; Risk Supervision; P2P

**Abstract.** The Internet finance is a new financial model relies on the payment, cloud computing, social networking, search engines and other Internet tools and produce. Because of the network financial service is fast and efficient, and is not affected by the time the regional limits, especially the third party payment, loan financing platform of P2P Internet financial, supplements the traditional bank financing channels. This paper first analyzes important financial mode of Internet finance. The paper presents risk supervision and coordination development of Internet finance.

## Introduction

The Internet finance is the product of combination of Finance and Internet technology, the narrow sense, refers to the formation of financial services and financial products offered by computer connection terminal and network service platform of the virtual financial market, broadly speaking, also includes Internet entity financial institutions providing financial services and related laws and regulations.

The Internet Finance includes three kinds of basic forms of business organization: network of small loan company, the third party payment companies and financial conduit company. The electronic bank, general promotion of commercial bank online banking, mobile phone banking, also belongs to this category [1]. Because the Internet finance is in a period of rapid development, the current classification is only superficial classification a stage, even after the electronic currency, virtual currency into the third party payment of this model, and six models cannot tolerate such as bitcoin emerging Internet financial innovation product.

The development of information technology, the network financial supervision appears liberalization and internationalization of the characteristics of two aspects of partnership. On the one hand, the past of segregated operation and prevent the monopoly of traditional financial regulatory policy will be the opening of the market. New mode of business integration and institutional group replaced. On the other hand, as cross-border financial transactions on the network more and more big, the financial regulatory departments of a country cannot control its own financial market activity, therefore, international cooperation in financial supervision has become the new characteristics of regulatory network of the financial times.

Financial services marketing are a kind of service marketing. Service as a marketing mix elements, the real attention is the last century in the late 80, during this period, due to the progress of science and technology and social productivity greatly, professional development and production of accelerating industrial upgrading, hand the products service content, namely product service intensity increasing. On the other hand, with the improvement of the labor productivity, market to a buyer's market, consumers with higher income, their consumption demand is gradually changing, the demand level is improved correspondingly, and spread to the direction of diversification, financial services in this context emerges.

Internet technology enterprises to carry out the financial activities of the mind and is not to want to rely on the activity to profit, its original intention is to develop a better service in the electronic commerce, is the electronic commerce development to a certain stage of the product [2]. Take the third party payment organization as an example. At the early stage of e-commerce, has produced two

major financial problems: one is the seller would not advance payment, the seller is not willing to advance the shipment, the seller and the buyer for their counterparties are not too trust; but because the bank card issuer caused by different transactions are often not in time, or even cause the transaction failure, this kind of situation have happened. E-commerce has encountered difficulties in the early stages of development, promote the e-commerce provider continuously improving service quality and level of their own, so the third party payment organization would emerge as the times require. Can say, the Internet technology enterprises to carry out financial activity is almost entirely in order to meet the needs of customers, that is, the final purpose is to service for electronic commerce.

### Analysis of the Internet Financial Model

The traditional financial institutions belong to the category of Internet Financial there are mainly two categories, the first category is the network innovation of financial business, we often say that electronic banking, including Internet banking, mobile banking, SMS payment; the second category is the business of innovation, also is the financial institutions to rely on their own network system and the creation of electronic commerce platform, such as the construction of the "good melt business", to pay the "pay Bohui", is essentially "net + financial supermarket + e-commerce" Trinitarian service platform, the platform will attract famous brand be settled down, multi field services covering goods wholesale, retail, housing transactions, provide payment and settlement and custody and guarantee, financing services, but also provide information release, trading, community service, online financial management, online customer service and other supporting services [3].

#### (1) The third party payment platform model

The so-called third party payment, transaction support platform provides independent third party organization is some and products in national and foreign banks signed, and have a certain strength and credibility of the guarantee. Through the third party payment platform in the transaction, the buyer has to buy goods, used to provide third party platform account payment, by the third party payment arrives, notify the seller of delivery; buyer inspection items, you can notify the payment to the seller, the third party sellers account and then transfer the funds.

#### (2) P2P network of micro credit model

The so-called P2P, nature of pattern is actually an Internet platform through the network end butt has small loan demand; end butt financial needs of people. Split into two halves is a financial management platform and the last microfinance platform.

The P2P platform's profit mainly is to charge a one-time charge from the borrower and the assessment and management fees charged to investors [4]. The interest rate on the loan or is determined by lenders bid determined or is provided by the platform reference rate according to the creditworthiness of the borrower and bank interest rates, as is shown by equation(1).

$$\begin{pmatrix} x' \\ y' \end{pmatrix} = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} d_1 \\ d_2 \end{pmatrix} \quad (1)$$

Small micro loan for its high cost to banks at a distance, but in the Internet age, all this will be a fundamental change, effective technical means and innovative service mode provides the possibility for efficient meet the huge common individual financial demand. These ordinary individuals can often contribute to higher yields, therefore the financial institutions by their composition of the clusters created wealth will be a great treasure, Internet and data is the key to the "treasure map". But because the provisions are too many, the relevant legal system is not perfect, the company internal control department to review the standard is inconsistent, the existence of transaction risk.

P2P typical overseas, like prosper and lending club P2P America company, not a security function, is pure platform, not involved in the transaction, loan and lender direct transaction. Some domestic P2P in order to attract users, put borrowing hit platform account, in terms of regulation is still in the blank state, does not meet the specification, the risks of the volume of money Run away. Domestic credit system is not perfect, just rely on online assessment is very difficult, if the individual credit

rating of China's financial infrastructure more perfect, then P2P will appear more All flowers bloom together.

### (3) The model of financial service platform based on large data

Major financial data is a collection of vast amounts of unstructured data, through real-time analysis to its, can provide customers with a full range of information for the Internet financial institutions, through the analysis and mining of customer transactions and consumer information to grasp the customer's consumption habits, and predict customer behavior, so that financial institutions and financial services platform in the control of the marketing and have a definite object in view the wind [5]. The electronic commerce enterprise has a mass of data to carry out financial services mainly refers to financial service platform based on large data.

China's financial services industry is still not developed; lending business, financial services etc. are very backward, lack of some enterprises in view of the current financial services, cutting out a breakdown of the field, from the financial business process for intensive and meticulous farming, slowly gained more and more customers recognized.

### (4) The mode of financing

The so-called crowd funding platform refers to the creative people to raise small funds or other support to the public, then the implementation of the results of feedback to the contribution of the platform for creative, as is shown by equation(2) [6]. The website provides users launched a creative contributor financing, organize information, open and creative implementation results of the platform, with financing people become the main profit pattern.

$$\bar{w}(m) := [\bar{w}^T(m,1), \bar{w}^T(m,2), \dots, \bar{w}^T(m,M)]^T \quad (2)$$

Crowdfunding rule has three: first, each project must set targets and financing days; two is in the set number of days, to reach the target amount of success, the sponsor can obtain capital; project financing failure has been the capital return all supporters; three is crowdfunding is not money, all the supporters must be equipped with the appropriate return. Crowdfunding is platform from fundraising successful projects of a proportion of service fee.

### (5) Virtual electronic money model

Virtual currency is a computer operation to produce or network community issued the network virtual money management, can be used to purchase virtual items, such as network game clothes, hats, equipment and so on, as long as there are people to accept, can also be purchased in real life items like bitcoin monetary use virtual, as is shown by equation (3).

$$e_1 \text{ S.T. } \text{Max}(R(W_j^\sigma, F_e), j = 1, 2, \dots, M) \quad (3)$$

Like bitcoin early just online businesses use, but later the entities under the line merchants began to accept, and the ratio of trade, policy regulation will be more strengthen, countries that are illegal, does not allow entity transactions. Virtual currency may impact on the monetary system; therefore the supervision will be very strict.

### (6) Online fund management

Online fund financial management is to the Internet as a marketing and operating platform of fund financial products [7]. Online fund management is different from the traditional fund management products embodies the advantages for business operation is convenient, the data of open and transparent information, sales and trading costs substantially reduced, wide audience, not limited to a few professional investors etc.

Fund financial products online payment functions in addition to the original profit function; return T+0 business model to make the product with a demand deposit liquidity and Monetary Fund; the most important point is the fund financing products can use huge customer base of third party payment products, attract customers with fast and simple way of managing money the vast majority of the non professional investors, often can make the fund size obtained historic growth. Successful online fund financial products generally have the characteristics of simple structure, low risk, and

steady income. Only with the above characteristics, can cause the majority of non professional financial customer investment interest, thus obtains the traditional fund management products can not match advantage of scale.

### **Risk Supervision and Coordination Development of Internet Finance**

Network finance is realized in the Internet financial activities, including a network of financial institutions, trade, market and regulatory and so forth. It is different from the traditional to the existence of the physical form of financial activities, is present in the electronic space of financial activities. The existing form of virtualization is network operation mode. It is the product of information technology especially the development of network technology, is adapted to the needs of the development of electronic commerce in the network era.

Financial services marketing should adhere to the principles of humanity, that is to say the whole process of financial marketing to implement people-oriented marketing idea, to provide appropriate service, at the right price, to the right customer. Take the customer as the center will become the key success factors of the bank. Commercial bank customers in general can be divided into two categories: enterprises and individuals that are usually said to public service and the private service two categories. Market segmentation in the two categories established in the small market for services. For example, on public services through market segmentation, provide special service project for different customers, small and medium-sized businesses, large industrial and commercial Multi-National Corporation, cultivate their loyal customer.

$$\beta_n = -\kappa R \cos(\phi - \phi_n) \sin \theta \quad (4)$$

Here refers to the modern digital communication, Internet, mobile communication and Internet technology, online through cloud computing, data and other ways to provide customers deposit, as is shown by equation (4), loan, payment, clearing, transfer, electronic ticket, the electronic credit, account management, currency exchange, P2P financial, investment, financial information such as a full range of seamless, fast, safe and efficient Internet financial service institutions [8]. Convenience, high efficiency of the Internet bank will bring great challenges to the traditional banking.

Supply chain finance, that is, to provide loans to each enterprise a specific supply chain business. For example, advance payment or inventory financing service. Different from the traditional small business loans is, focus on the business model for a supply chain upstream and downstream enterprise service. In addition, the business model generally rely on electric business platform, the transaction data capture the service a large number of enterprises, as not to judge these business conditions and repayment ability of the basis. Due diligence this business model than the traditional small credit business is more reliable, and the cost is very low, as is shown by equation (5).

$$E_{idu}(f, l, r) = [P(\frac{\partial}{\partial x} l(x, y), \frac{\partial}{\partial x} r(x, y)) - \frac{\partial}{\partial x} P(l(x, y), r(x, y))]^2 \quad (5)$$

Because of the Internet's financial crisis too rapidly, the regulatory responsibility is not immediately clear, the regulatory policy measures also temporarily difficult to keep up, resulting in some fields such as P2 P loan appeared serious breach of contract violations [9]. In order to safeguard the interests of customers, ensure the healthy development of the industry must react rapidly; make strong regulatory measures to local conditions.

In the third party payment platform mode, settling down in the way funds are often placed in the third party to open a bank account, a general merchant funds will be stranded for two days to several weeks, this part of funds in transit, the risk may occur: first, funds in transit continues to increase, the third party payment platform credit risk index increase itself. Second, the third party payment platform has a lot of funds precipitation, if lack of liquidity management effectively, it may trigger a payment risk.

(1) Operational risk management. The operating standard transaction subject on the Internet financial requirement and lack the necessary understanding, causing capital loss, further may interrupt problem led to liquidity problems, the transaction in the process of the payment and settlement. The transaction process intended or unintended operation error, whether the customer or the Internet financial institutions, which will pose a risk to the financial development of the Internet in the process of accumulation, and should increase the degree of information disclosure of personal information, the establishment of credit system, the construction of more artificial computer network security system of the Internet, increase the financial and operational norms process of propaganda, the formation of mutual trust of Internet financial market.

(2) Coordination of consumer rights and interests of financial institutions [10]. The Internet financial market in to provide consumers with high efficient transaction model at the same time, it also brings between the more and more financial institutions and consumer rights and interests of the dispute, regulators should not only safeguard the interests of consumers, in order to maintain confidence in the market, but also the maintenance mechanism of rights and interests, to promote the innovation and development of Internet financial market, the coordination problem two it is particularly important, in a weak position in the consumer rights and interests distribution, is the market to operate basis, therefore, regulators should pay more attention to the protection of consumer interests, maintain the confidence of financial markets, in addition, the Internet financial institutions will have greater incentive to improve related services, accelerate the pace of innovation.

(3) To improve the credit system construction aspect a is in the realization of credit customer information management, to fully implement the provisions of the people's Bank on the personal credit system management and work requirements, the protection of consumer personal credit system and the normal operation of the individual credit information security; two is to update the personal credit information, personal credit information report, ensure the accuracy of integrity, can realize network of national credit inquiry; at the same time standard query behavior, reduce the choice cost of the transaction object, to provide comprehensive, fast credit services for society.

The Internet financial development broke the geographical restrictions, the world financial closer together, the Internet financial customers are no longer confined to a country, but around the world, the service selection is the residents of a country in the global scope, it is to separate the domestic regulatory challenges, at the same time, the risk of Internet financial transactions can quickly spread among the world's financial markets, the risk of infectious to further expand, rely on regulators in one country can not carry on the supervision of the Internet financial transactions alone, international cooperation which requires Internet financial supervision.

## Summary

In view of this, supervision should be derived from the innovation of financial business model to implement functional supervision, that is focus on the financial products business model and the realization of the basic functions, and on this basis to determine the appropriate regulatory agencies and regulatory rules; at the same time, to emphasize the implementation of cross product, cross, cross market supervision mechanism, not just of each internal sector of the financial risk.

The development direction of the Internet financial market represents financial products and services, financial institutions around the world in an effort to expand its own internet financial services, however, the huge risk of Internet financial market and make regulators cannot allow unlimited Internet financial innovation, strict supervision will weaken the international competitiveness of the financial institutions, and even hinder the progress of technology and business innovation, regulators facing the dilemma between innovation and the choice of the supervision. We should establish unified Internet financial regulators, moderate supervision, increase the real-time regulation of Internet financial, excessive agglomeration preventing risk, at the same time to increase the Internet financial innovation support.

## References

- [1] X. Li, "The Evaluation on Finance Ecological Environment using Unascertained Measure and Fuzzy Analytic Hierarchy Process ", JDCTA, Vol. 6, No. 8, pp. 185 ~ 194, 2012
- [2] Z.H. Liu, L.Y. Li, Y.W. Wang and L.Y. Zhang, "Research Securities Fund Investment Activities Based On Behavioral Finance Analysis", IJACT, Vol. 5, No. 8, pp. 1019 ~ 1026, 2013
- [3] F. Wang, J.W. Yu, L. Zhang and S. Zhong, "Research on Enterprise Operation with Finance and Accounting Cost Calculation Integration Framework System Based on IT Perspective", IJACT, Vol. 4, No. 19, pp. 358 ~ 365, 2012.
- [4] G. Chen and X.j. Zhang, "Effective Supply of the Formal Rural Finance-----Based on Multiple Regression Model", IJACT, Vol. 4, No. 23, pp. 523 ~ 530, 2012
- [5] Y. Wang, Y.L. Ma and Y.H. Zhan, "The Research on Supply Chain Finance Model with Supplier-led", IJACT, Vol. 5, No. 8, pp. 566 ~ 576, 2013
- [6] F. Wu, J.w. Lin and Z. Xu, "P2P Task Scheduling Optimization Study Based on P2P-IA Immune Algorithm", JDCTA, Vol. 7, No. 5, pp. 62 ~ 68, 2013
- [7] T.Z. Wang, H.M. Wang, B. Liu and P.C. Shi, "Which Strategy is Better to Restrain C&C Activities of Unstructured P2P Botnets?", JCIT, Vol. 7, No. 20, pp. 85 ~ 92, 2012
- [8] J.F. Zhang, Z.J. Wu and P.F. Feng, "P2P Network, Cloud, Trust Model, Time-Space Logistics of Process Enterprises", AISS, Vol. 4, No. 19, pp. 139 ~ 150, 2012
- [9] Y. Zhang and k.j. Lv, , "The Research on the Impact of Industrial Development by Carbon Finance", IJEI, Vol. 4, No. 3, pp. 19 ~ 25, 2013
- [10] Y. WANG and D. Huang, "Financing research of short-term delayed payment based on multi-suppliers' choice", AISS, Vol. 5, No. 14, pp. 13 ~ 22, 2013