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Research Article

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E-commerce model and platform based on the third-party

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ABSTRACT

The paper proposed a method that endogenous two-sided network effects were proved in transaction services that the value of services to suppliers (buyers)increases with increasing number of buyers (suppliers) while decreases with increasing number of suppliers (buyers). Network led to the development pace of people's lives; promote the development of online shopping and the rise of third-party payment platform. For more benefits, the platform owner must aim at transaction services of staple commodities with high price elasticity and large quantities of market supply and demand, while reducing the marginal usage costs of buyers and suppliers with effective measures.

Keywords*:* transaction services; third-party platform; effective measures.

INTRODUCTION

With the progress of the Internet and development of network technology, people living increasingly close ties with the network, online shopping has become common practice, in which buyers can't see the arrival, the seller can't see the money transactions, to ensure transactions smoothly, it must require a high reputation, both consumers and sales as a trusted third party intermediary to help complete the transaction. The Intermediaries talked about here is what we are discussing third-party payment platform [1].

In recent years, the rapid development of e-commerce, third party electronic commerce platform as the typical representative, has become a hot issue. Some scholars build relative model from the angle of electronic intermediary, the electronic market, bilateral market. Other scholars research the bilateral market platform monopoly and competition model in different form of pricing from the view of user multi homing, service differentiation, exclusive strategy, price commitment (membership fee, fee, commission fees)[1]. Although these models expand the unilateral network effects to bilateral (crossed)network effect, analyze some economic phenomena and pricing strategy on the bilateral market platform and consider network effects as exogenous variables, not be included within the model, therefore which affect the model conclusion persuasion. hence, this paper build a third party monopoly B2B e-commerce platform based on analyzing the transaction process and service supply chain relationship under the background of spot transaction model, the bilateral network effects are proved in biochemical existence, and pricing strategies of maximized profit are derived, and focuses on the analysis of effect of commodity supply and demand characteristics of the optimal service demand.

Third-party payment platform is an independent agency with a certain strength and reputable to protect the transaction payment. In the transaction, the buyer bought the commodity and pay the purchase through a third party payment platform which should inform the seller shipped the goods immediately after the receipt of payment [2]. When the buyer receives the goods satisfied, he will notify the third-party payment platform pay to the seller. Third-party payment platform covers a variety of bank card interface integrated into a complete settlement with the bank's defray.

The proposed concept of third-party payment platform in Davos, Switzerland in 2005.Mayun proposed the concept of third-party payment platform, he believes the key to all problems is the e-commerce security that e-commerce out of the question without security trading environment[3]. Domestic common third-party payment platform like YeePay EPRO (Beijing Information Technology Co., Ltd), AliPay, TenPay have very strong momentum from the speed of development. Sadie consultant's analysis shows that in recent years, third-party payment platform to pay as much as the amount has reached tens of billions, representing the proportion of online payment about 36%. As of 2010, the third-party payment platform has entered a rapid development period [4].

MODEL CONSTRUCTION

The research background of this paper is the model of the spot transaction (dashed box part)as shown in fig1: the seller and the buyer (the supplier and purchaser) release the commodity supply and demand information through the trading platform, then supply and demand matching is realized by the matching mechanism platform, and finally the two parties complete the goods and loans transaction in the third party support[5].From The basic process of the e-commerce of spot transactions, supply chain relationships between trading services are as shown in Figure2

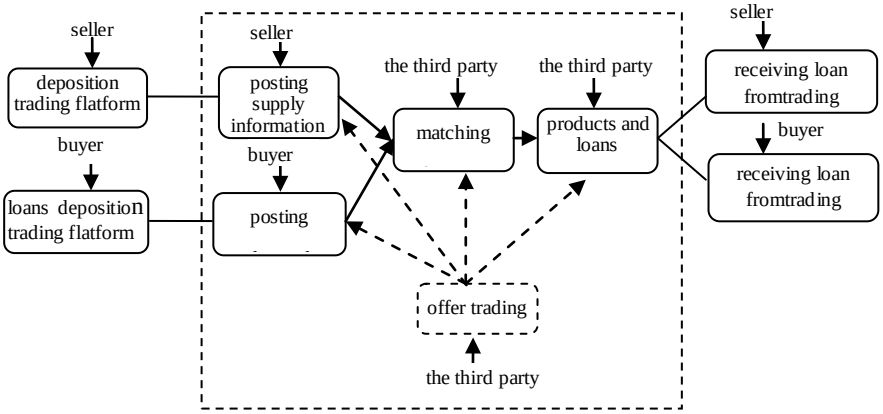

Fig .1:transaction model

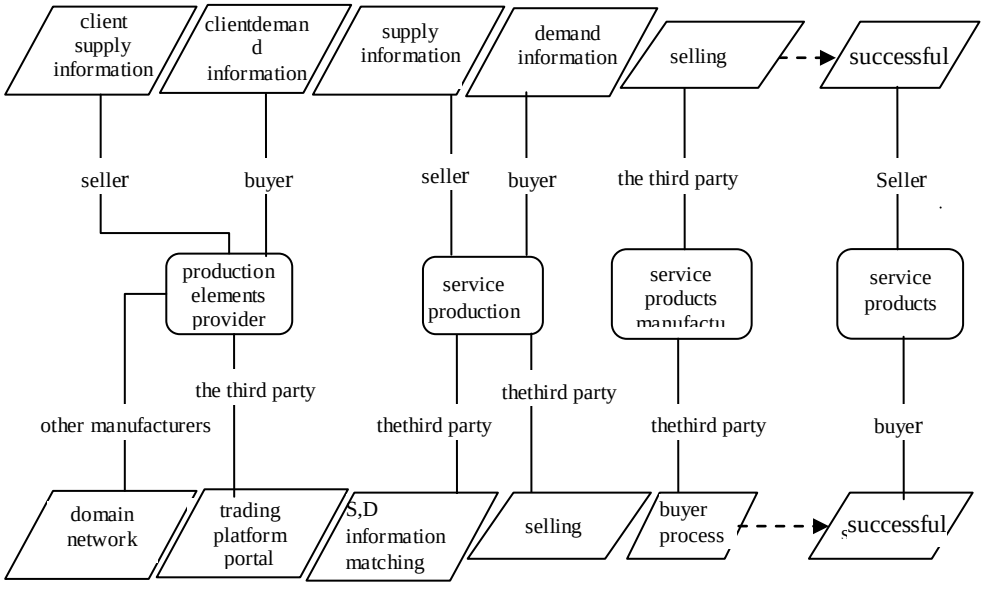

Fig.2: trading services

MODEL ANALYSIS

The value of services gained from the buyer (seller) increases with the buyer, but decreases with the seller.

In the third-party e-commerce platform, iinevitably produce negative group between network effects, the conditions which j on theiof the set of for network is

$$a_i < \beta_i\beta_j(\alpha_i - \alpha_j)^2 N_i N_j /(\beta_j N_i + \beta_i N_j)^3 + r_i - c_i - a_i \quad (2\text{-}1)$$

Because of $a_i, b_i, N_i > 0$ and $a_B > a_S$, u_i to N_i is deduced as follows:

$$\frac{\partial u_i}{\partial N_i} = -\frac{\beta_i\beta_j[(\alpha_i - \alpha_j)N_j]^2}{\beta_j N_i + \beta_i N_j} < 0 \quad (2\text{-}2)$$

Because of $a_i < \beta_i\beta_j(\alpha_i - \alpha_j)^2 N_i N_j /(\beta_j N_i + \beta_i N_j)^3 + r_i - c_i$, u_i to N_i is deduced as follows

$$\frac{\partial u_i}{\partial N_i} = -\frac{\beta_i\beta_j(\alpha_i - \alpha_j)^2 N_i N_j}{(\beta_j N_i + \beta_i N_j)^3} + r_i - c_i - a_i > 0 \quad (2\text{-}3)$$

J produced a positive network effect toi.

THE RISK OF THIRD-PARTY PAYMENT PLATFORM

Third-party payment platform is relying on the Internet, the network data transmission and storage of electronic and traditional banking business, as there are many technical problems and compliance issues, the third-party network payment there are many risks to run in reality.

Third-party payment platform service providers generally have the ability to sequestrate the funds and make it a part of the same functionality with banks [6]. The funds in the account of the service provider will be a period of retention with the e-commerce transactions in the payment process and the number of funds will also precipitate rapid expansion, according to reports, in the virtual account funds remain almost every day up to several millions of dollars, a large number of customer funds precipitation may lead to riskier investments or other activities, coupled with the differences in levels of business operations management, may lead to liquidity risk, credit risk and transaction platform for enterprise operational risk[7].

Third-party online payment platform directly control transaction amount which may be called ultra vires trading financial risk. And because the anonymity and hidden of online transactions, the third party payment transactions may be achieved by making a false fraudulent means [8]. The most harmful of the financial risk is fund. Based on the current trading rules, the amount paid in the third-party online payment platform usually be precipitated with 3-7 days, so at any time payment platform in the tens of millions of dollars precipitation. With future growth in the number of users, the capital amount of precipitation will be very great.

The financial risk of the third-party payment platform

Because the characteristics of electronic payment, both sides in transactions are not met each other. The third-party payment platform trading is anonymity and with the incompleteness of the information online, it is difficult to identify the true source and destination of funds, so that some use of third-party platform illegal transfer of funds, money laundering, withdrawal of credit card, bribery, fraud, gambling and tax evasion and other activities became possible [9].

For example, the withdrawal of credit card. Some e-commerce transactions by using the domestic several large e-commerce sites on their own “buy sell” false trading. Parties to the transaction is in a virtual card account or two discuss sides, credit card holders in e-commerce site by relatives or friends set up fake identity card shop, and then use their credit card in the shop buy virtual goods, making substantial use of credit cards to Withdrawal Of Credit Card.

The ethical risk of the third-party payment platform

E-commerce transactions choose to pay from third-party payment platform because the strength of its third-party payment platform, brand, reputation recognition. Third-party payment platform make up credit intermediary roles which not only offset the lack of a social credit system, but also increases the risk of the transaction and payment risk, especially when the development of electronic payment transactions to a certain size. If the third-party payment platform has losses within the management reasons, the whole payment and settlement systems will certainly be a considerable impact that will threaten the entire payment system security and stability.

The network security risk of the third-party payment platform

There is a network security risk. This is mainly reflected in three aspects: First, the data transfer process attack will

threaten user's fund security; the second is inherent in online payment. Application security design flaws could be exploited and endanger the security of the entire system; the third is likely to break through the network against computer viruses, invasion of the host of online payment system, resulting in data loss and other serious consequences[10]. Research data shows that online banking and online payment security risks of exposure to the most profound impression on users, recognition rate of 36%, higher than the evening's other content.

Online banking and online payment security is the basis of their service users. Once the user bank account number, ID number, password and other information be leaked in the transaction, will give users direct property damage. With online banking and online payment penetration rate of Internet users increased steadily, account and password security has become the focus of Internet users. The network security, disaster prevention, anti-virus problem are the most concerns when consumers use third-party payment platform [11]. The third major cause of security problems to pay is in the following: the first one is hackers steal card information and password from the user's computer which is the main exposure; the second is transaction information which transmitted over the Internet intercepted by hackers, the possibility of this happening is minimal; the third is the user being diverted to phishing to deceive card number and password, this situation is the main user deceived.

The seller credit risk of the third-party payment platform

There is a big risk of seller credit in the online shopping transaction. The first risk is quality of the goods. Shopping site has sample pictures of various commodities to enjoy the convenience of buyers, evaluation and comparison, but the picture between the sample and real goods is always exist some kind of different. The second is freight risk. Freight paid by the purchaser, the price of goods and freight is the main expenses of the buyer. So if the purchaser receives the goods and after inspection to find there are some quality issues which below a certain tolerance range, the majority of buyers will choose not returned. Although the return or exchange their goods without price changes, but the purchaser will pay for more than twice the freight (shipping and returns when the re-shipment of freight) which is not a small number. Trade-offs the two sides and to reduce the trouble, buyers with angry usually choose to accept it and this give a space and excitation to the seller to provide shoddy.

THE RISK PRINVENTIVE MEASURES

Third-party payment platform to carry out the transaction is based on credit, then the whole process there will be a lot of credit based on such moral hazard arising, then the whole process of strengthening the supervision and management is very important, and only strengthened the transaction the regulatory process, in order to ensure effective functioning of the entire system. For its potential illegal trade channels, the authorities should take effective measures to increase the scope of monitoring, for example, it may be money laundering place, then it is included in the scope of anti-money laundering monitoring; it may become the new place of bribery, then will be included in the scope of monitoring bribery, in short, for all possible illegal transactions, the relevant laws and regulations should be targeted to make effective control to ensure that third-party payment environment from pollution[3].

Strengthen supervision and management.

For the moment situation in which third-party payment platform existing, the financial authorities have started the introduction of the relevant measures. Under the "People's Bank of China Act" and other laws and regulations, People's Bank of China formulated the "non-financial institution payment service management approach" by May 19, 2010 the 7th president of business session. At the same time, December 3, 2010, people's Bank of China formulated the "non-financial institutions pay for Services Regulations", according to central bank "to pay non-financial institutions Services ", China is expected to pay a license issued by third-party payment in line with some hundreds of qualified companies.

The transaction of third-party payment platform is based on credit so that the whole process will generated a lot of credit-based moral hazard. Strengthening the supervision, the monitoring and the management are very important for the whole process. We should advocating to promote the real-name transaction, the transaction required authenticity (including the identity of parties to the transaction, trading content, etc.) of the third-party payment platform for effective identification, record keeping and deal with trade-related content and some technical information to facilitate analysis and trading ex post facto[4]. Transaction risk analysis system should be established to report to the relevant departments for possible money laundering, withdrawal in cash, gambling, fraud and other illegal activities prohibited.

Enhance protection of consumer internet privacy

We should clear and definite the concept of internet privacy rights and their specific content which conclude legal liability caused by violation of the consumer's right of privacy and so on. Consumer information collecting from network transactions must be consented by the consumer and explain the purpose of using. Without authorization and unauthorized resale or transfer the consumer information to third parties should be liable. At the same time,

consumers should also strengthen network self-protection awareness, be on guard fraud prevention network, keep watching the network of hacker's attacks that will strengthen the protection of consumer interests [5].

First, establish market mechanism about entry and exit. With the entry mechanism, the market will further integrate resources and many small companies which registered capital less than the requirements of the qualification can't get a license and will have to withdraw from the market. Faced with this situation, the relevant departments should immediately establish a thorough market exit mechanism to protect customers' interests. Second, we should to improve network security technology and Input human and material resources to the third-party payment platform that will constantly develop new security measures to implement security.

The use of modern technology, such as high-strength encryption, secure channel, digital signatures, PKI, SSL technology all will ensure customer authentication, transaction information integrity, confidentiality, availability, controllability, and the review of non-repudiation. What indicated above will avoid non-bank institutions to take information, technology and business advantages to do harm with the expense of consumer interests and to ensure data privacy and information security.

Strengthen the legislative building and clear legal status of third-party payment agencies
As the third-party payment in settlement of funds involved in the actual operation, the escrow funds and other services, there are a lot of deposits. Especially in recent years a large number of industry-specific cards issued to the industry of third-party payment card service platform developed which has grown rapidly. In this industrial chain, whether it is business as issuer or third party payment as receiving side, there is a lot of deposits. If legislation does not establish rules as soon as possible, the existing financial payment system will get a huge negative impact [6].

Third-party payment platform provide non-bank financial services, regulatory authorities should engage in third-party payment services from the registered capital, margin, risk management system, technical standards and other aspects to formulate access standards and issued the three pay business license. Get third-party payment services into money laundering management system and establish a credit monitoring third-party payment system.
Strengthen the banking payment systems.

In recent years, People's Bank of China Insists to build a safe and efficient payment and settlement system for promote the construction of the central bank payment and settlement systems which providing multi-channel, multi-channel payment channels and build a complete system of interbank payment and settlement services for all banking financial institutions and markets, thus, a safe and efficient payment and settlement platform to be took shape.

Now the People's Bank of China has built a large, small interbank payment and settlement systems. People's Bank of China has launched the second generation payment which will greatly promote the commercial banks, interbank payment business that involving commercial banks into one online interbank payment and settlement system through in conjunction with member banks like as China Union Pay to develop appropriate standards and access to information management and risk management systems, improve the access threshold, to prevent fraudulent transactions, and so on.

Strengthen the security protect of network payment.
First, we must strengthen the security protect of network payment and accelerate the development of security technology that combined both together to prevent online banking system vulnerabilities and hacker attacks at the same time ensure a good environment for online transactions. We should post the recent fake phishing sites on the payment pages which would make consumers to increase vigilance and reduce payment risks.

Second, We would defined the consumer financial security measures if meet event of force majeure and how to compensate the loss caused by the delay or failure of the banking system failure like as viruses, Trojan horses and hackers attacks. Network security technology is the most important side in the third-party payment platform and we must increase the human and material resources to build solid network protection fortress. If the problem can't be resolved, other issues that can only be on paper, it is difficult to achieve.

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