Research on Money Laundering Crime under Electronic Payment Background

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Abstract— As the result of information technology's development, promoted the tradition payment means enormously to the computerization development advancement. The electronic payment has accelerated the money circulation speed, and has brought the enormous convenience for the modern trade activity. But the electronic payment's characteristics such as invisible, high speed, concealment and so on have provided the enormous convenience to the money laundering criminal activity, and presented the enormous challenge to the traditional counter-money laundering system. The money laundering activities change to the virtual space from the real world, and the electronic money laundering become a new confidentiality and highly effective method for the money laundering crime. The question of moniting criminality of launders money under the electronic payment background, regardless of from the legislation and the technical angle, is a new domain needing to deeply research. This article has first analyzed money laundering pattern under the electronic payment background, then has analyzed the characteristic of the electronic money laundering compared to tradition money laundering pattern and the new challenge which brings for the counter-money laundering work. Finally, proposed several countermeasures to guard electron money laundering crime based on the above research.

Index Terms—Electronic Payment, Money Laundering Crime, Financial Computerization

I. INTRODUCTION

The money laundering is one kind of criminal activity to cover up and conceal the origin and nature of the crime income, to disguise and make the crime income to become legalization in the form. The money laundering crime as one kind of international criminal activities has received people's attention day by day. Under this background, the anti-money laundering work also day after day becomes an important topic which is paid attention highly by the community. It has become the symbol to weight government ability, the national prestige, is an important means to maintain the state economy security, attack crime, containment corrupt. The electronic currency is a revolution to the payment pattern. It will become the 21st century's main means of finance payment. Electronic currency has the following characteristics: invisible, high speed, concealment and so

on. These have provided enormous convenience to the money laundering, and presented enormous challenge to the traditional anti-money laundering system. It makes the money laundering activities shifting from the real world to the virtual space. Using the electronic payment can shift the crime income to anywhere in the world in a short time not having any traces. The electronic money laundering already has become the more covert method for money laundering crime. Therefore, under the electronic payment environment anti-money laundering work becomes more delicate and difficult. The anti-electron money laundering question also gradually becomes one brand-new and vital practical significance research area. It has received the correlation theories researcher and practices worker's widespread attention.

At present, the mostly research conducts the research to the anti-electron money laundering question from qualitative perspective, less research literature studies this issue from the technical perspective or the quota perspective. The literature [1]-[6] main analysis the electron money laundering's characteristic from the qualitative perspective, and put forward some proposals to the antielectron money laundering's work. Literature [7]-[10] conduct the research specifically to the antielectron money laundering question from the technical or the quota perspective: Feng Yun and so on (2008) [7] focuses on the detection methods and supervision measures for the money laundering taking advantage of e-commerce based on third party online payment. Based on the analysis of suspicious trading behaviors by e-commerce websites and third party online payment, a multi-agentmoney laundering and anti-money laundering mode should be built up. Conduct computer simulation on it. According to the simulation results, velocity of entry of money launders, the length of filter intervals, the sensitivity of the regulatory authority to public opinions, severity of punishments on money laundering and the investigation ability of the regulatory authority have impact on the efficiency of regulation on money laundering. Tang Jun (2005) [8] discussed the main problems of current anti-money laundering data reporting regulations, including enormous data, high false rate, lack of self-adaptive and easy evasion. A new generation of data monitoring and analytical framework that is based on machinery study is proposed to avoid such abuses

effectively through the recognition of customer's behaviors pattern, and has made out its system frame, working course, technical feasibility, etc. Tang Jun (2007)[9] as the Commercial bank lack to screen the anti-money laundering suspicious transaction data work, the reporting suspicious transaction data report data quantity to be big deficient, the rate of false alarm is high, the information investigation value low status question, proposed that the Commercial bank customer relations management system management system with the counter-money laundering data report system integration, using the customer relations management system management system's to analysis the customer behaviour pattern and the customer background investigation, performs the system transformation and the flow restoration. Chen Yunkai and so on (2007) [10] proposes an SCT (Semantic Core Tree)-based incremental conceptual clustering algorithm. The algorithm could solve the problems of 1) large volume of data set; 2) mixture of categorical and numerical data; 3) easy understanding of results.

In the following part of this article, has first analyzed money laundering pattern under the electronic payment background, then has analyzed the characteristic of the electronic money laundering compared to tradition money laundering pattern and the new challenge which brings for the counter-money laundering work. Finally, proposed several countermeasures to guard electron money laundering crime based on the above research.

II. ANALYSIS ELECTRONIC MONEY LAUNDERING PATTERN AND TRADITIONAL MONEY LAUNDERING PATTERN

A. Analysis Traditional Money Laundering Crime Pattern

The complete traditional money laundering crime process divides into the following three stages: Laying aside stage, cultivation stage and conformity stage. The laying aside stage, derived the cash coming from criminal activity to advantageous control moreover form which is not easily suspected, the main way includes: Saves the cash to the person domestic bank or other financial organ, transfer the cash to other country and saves to the other country bank or the financial organ, or purchase cultural relic, airplane, noble metal and so on, when selling those can through the check or the bank payment reclamation valuables way. The cultivation stage, is mainly through the complex financial transaction, conceals or conceals the real origin and the nature of the crime income. In this stage the traditional money-laundering methods include: The telegraphic transfer Bank's fund, use these fund to purchase the following financial products bond, stock, traller's check and so on, resells the valuables which the preceding stage purchases, then invests real estate and the traveling and so on legitimate profession. The conformity stage, Soon "cultivation" the crime income and the legitimate fund unify then mixed together to the economy and the financial system, lets the illegal gains appear by the legitimate appearance. At this stage the traditional

way: by "the onstage company" "the loan" returns the fund to the rightful owner, increases or the forge receipt and so on. The traditional money laundering pattern shown in Figure (1) as follows:
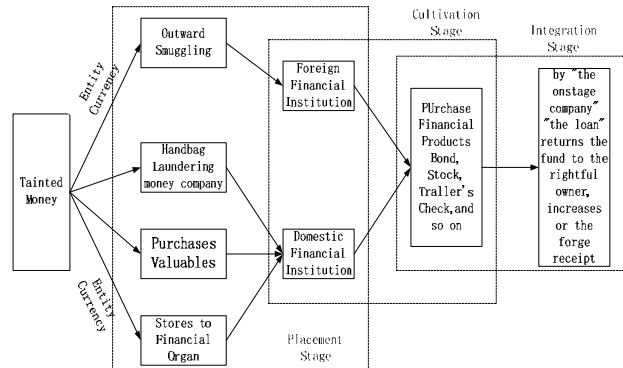

Figure 1.   Traditional Money Laundering Pattern.

B. Analysis Electronic Money Laundering Crime Pattern

The complete electron money laundering crime process also constitutes by the following three stages: Laying aside stage, cultivation stage and conformity stage. But under the electronic payment background, these three stages have its unique convenience. Laying aside stage, criminal offender, so long as exchanges the illegal fund the electronic cash by the issuing agency, then use the smart card or digital cash direct exchange foreign currency, purchase commodity and so on, moreover under the electronic currency payment system the strict cryptosystem had also guaranteed that these transactions can carry on under the anonymous condition. The cultivation stage, under the electronic currency payment system, broke the time and the spatial limit to the capital allocation, only by a simple personal computer, they can snap transnational capital flow, and often do not leave any traces of the accounts. Maximum limit blurred between the crime income and the criminal activity relation, then achieves to to conceal the true nature of the criminal source of funds and the purpose. The conformity stage, under the electronic currency's environment, the money laundering fusion stage is only a segregation stage simple extension. The money laundering only needs using the simple computer network. They can allocate funds on an equal value, anonymous payment and instantaneous transmission, the anonymous payment and the instantaneous transmission and so on, completes the money laundering the final process.

The money laundering uses the electronic commerce transaction account to carry on the wash sale frequently, by online payment platform, achieves the fund flowing and the shift, achieve the purpose of money laundering. Usually, the money launderers will provide one or more network payment account for its each electronic commerce transaction account. Commerce account "self-sell from buy" the transaction is composed of many network payment account number in network dirty money rinse. On specific money laundering process, mainly has two kind of money laundering behavior

patterns using the electronic commerce and the network payment.

B two C pattern, the money laundering criminal offender sets up one or more false electronic commerce enterprise, then using network payment's form to carry on false trading with e-commerce enterprises false through certain electronic commerce account. This then realizes the dirty money by the buyer account to the seller account directional rinse, shown in Figure 2, Figure 3 shows:
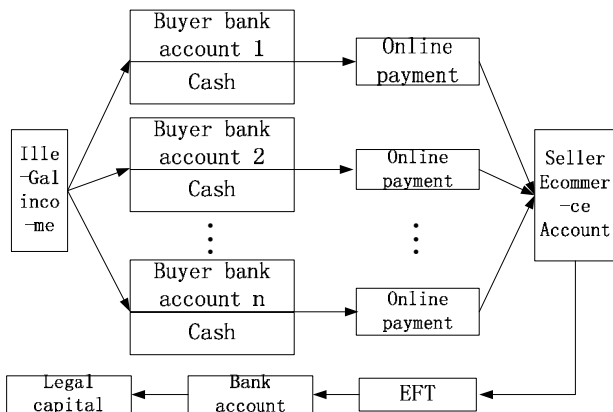

Figure 2.   Under B two C situation money laundering pattern one.

When the single seller electronic commerce account number with many buyer electronic commerce account number carries on the redundant transaction, the money laundering crime is extremely easy to cause the supervisory department's attention, therefore the money laundering criminal offender will usually set up many false electronic commerce enterprise, such criminal activities for money laundering is more subtle.
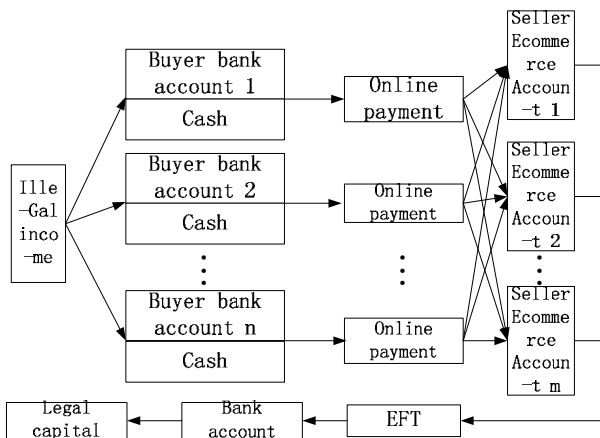

Figure 3.   B two under C situation money laundering pattern two.

C two C pattern, various electronic commerce accounts is not only the buyer account but also the seller account, each account sale commodity to other account, simultaneously also purchase commodity from other account. Accordingly, the network payment account's fund also is out or into. Under this kind of pattern, the dirty money's flowing is more scattered, does not have the obvious directional rinse trace. May see, this kind of pattern's money laundering process has the

confidentiality, but because each account number simultaneously acts as the buyer and the seller, the entire money laundering process needs to lose more costs, the operation is more complex, as shown in Figure 4:
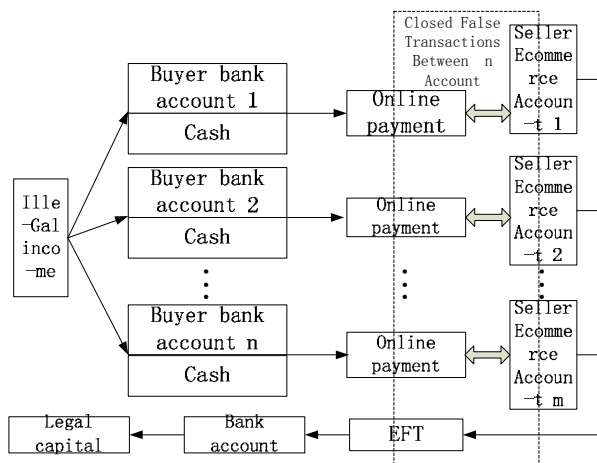

Figure 4.   Under C two C situation money laundering pattern.

III. THE ANTI-MONEY LAUNDERING WORK FLOW ANALYZES

A. Anti-money laundering flow

The money laundering crime is refers one kind of criminal activity that the company or individual uses the unlawful means to get the illegal gains rationalization. The money laundering supervisory system mainly carries on the money laundering behavior detection through the below processes, as shown in Figure 5:

1) The monitored analysis in anticipation: The criminal offender implementation money laundering activities certainly will have some abnormal phenomena in its account to display. The money laundering heteromorphism monitoring carries on the monitoring to all exceptionally operates in the clients' accounts according to the counter-money laundering supervision organization hypothesis monitoring standard. However with the changing characteristics of money laundering, the criminal offender will use the different method to dodge the money laundering monitor the monitoring. Therefore, monitored the standard also should be flexible according to the environment changement.

2) Suspicious transaction early warning: by the monitored analysis in anticipation discover suspicious transaction, rapid transfer to the counter-money laundering supervision organization. That is major function of the suspicious transaction early warning.

3) Suspicious transaction analysis: by the monitored analysis in anticipation discover suspicious transaction, some of which is not the true money laundering crime. How to distinguish whether is the true money laundering activities needs the supervise organization further to judge according to own understanding and the experience. The monitored analysis in anticipation provides the target-oriented monitor goal for the supervision organization. The supervision organization

may according to the discovered clue, and withdrawing the related all information (including detailed transaction information, customer information and so on), further carries on the judgment.

4) key target reconnaissance, according to the material which obtains in the monitored analysis in anticipation, carries on the overall analysis the suspicious transaction, if can confirm the money laundering crime authenticity, then may turn over the related department, and carries on the reconnaissance to the key suspicious object.
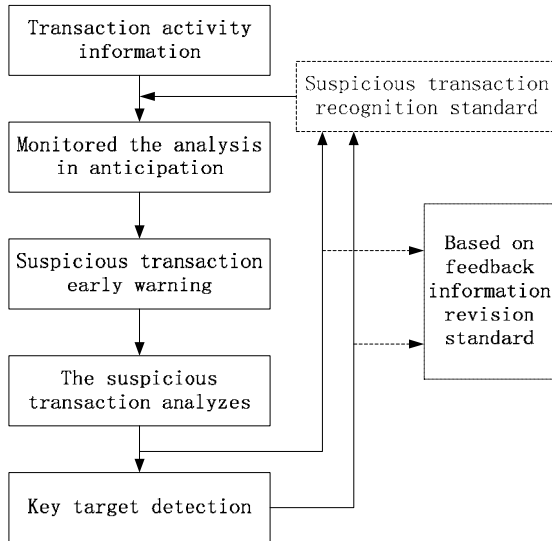

Figure 5. Flowchart of anti-money laundering.

B. Anti-money laundering system structures analyze

Gain the suspicious transaction the recognition clues

The money laundering crime always has its specific characteristic, how to discover the suspicious transaction payment from the magnanimous transaction information, first needs to solve the question is to gain appropriate recognition suspicious transaction recognition clues collection. May through the following three steps to gain the suspicious payment's recognition clues:

(1) According to the requirements of "RMB report large and suspicious transaction management approach", suspicious transaction has the following characteristics: single transfer rates greater than 100 million; in a period of time (usually 10 days) accounted for (or out of accounts) and high frequency; long-term idle cash basis accounts frequently occur in a short time; and crime areas with frequent collection and payment; account for their business enterprise is not related to frequent payments.

(2)Aaccording to the bank database carry on the data mining to the massive primary informations, such as the use of cluster analysis, decision tree, logistic regression analysis, correlation analysis and artificial intelligence, data mining information database to analyze vast amounts of data, to obtain the money-laundering identification features.

(3) Carry on the real-time online analysis to the real-time renewal's money laundering crime case database, according to a new database continuously updated and improved recognition feature database of money-laundering.

Multi-recognition clues information fusion

Carry on the information fusion, which expresses to the multi-recognition clues, thus obtains about some specific transaction event's synthesis evaluation result. This question in fact is a multi-objective decision making question. Now people have already constructed many kinds of decision models for the multi-objective decision making question such as: Based on rough theories, intuition fuzzy set, linear programming and so on.

Sets up the early warning threshold value, the suspicious transactions will be reported to regulatory authorities.

Carry on the comparison the early warning threshold value which are ardetermined beforehand with the multi-recognition clues' synthesis evaluation value, if some transaction's synthesis evaluation value is bigger than the early warning threshold value, regards this transaction as suspicious transaction reporting to the related Supervisory department. Seting up the early warning threshold value must wear unceasingly in reality. It needs carring on the balance between the detection work load and the omission money laundering transaction behavior.

The Supervisory department carries on the detection

The Supervisory department carries on the detection to reported suspicious transaction object by the financial organ, and will feedback the investigate result for the financial organ, with the aim of renewing the money laundering crime transaction case storehouse promptly.

Revises the correlation data based on the feedback information

According to the suspicious transaction's detection result which are feedbacked by the Supervisory department, carry on the revision to the suspicious transaction recognition clues collection, the early warning threshold value and the recognition clues information fusion function, enhances the accuracy of the early warning.

The above five links constitute a closed loop system, in view of financial organ on-line payment function's money laundering crime monitor model as shown in Figure 6:

In Figure 6, ① Express that use the data mining technology to process information in the money laundering transaction crime database to gain or the revise suspicious transaction recognition clues storehouse; ②Expression use the data mining technology to process information in reported mistakenly transaction case storehouse, then revise suspicious transaction recognition clues storehouse; ③Express that gain the suspicious transaction recognition clues from the existing laws and regulations; ④ Express that provide some references according to the feedback information to related legal and the guild regulations revision work; ⑤ Express that make the revision to the threshold value according to the feedback information, if the rate of false alarm is high, should enhance the early warning threshold value, otherwise may reduce the early warning threshold value suitably; ⑥ Express that carry on the revision according to the feedback information to the information

fusion function;⑦ Express that according to the feedback information to make the revision to the reported mistakenly transaction case storehouse, if the forecast case is not the money laundering transaction behavior, preserves this transaction information into the misinformation transaction case storehouse; ⑧ Express

that make the revision to the money laundering transaction crime case storehouse according to the feedback information, if the forecast case is the money laundering transaction behavior, preserves this transaction information into the money laundering transaction crime case storehouse.
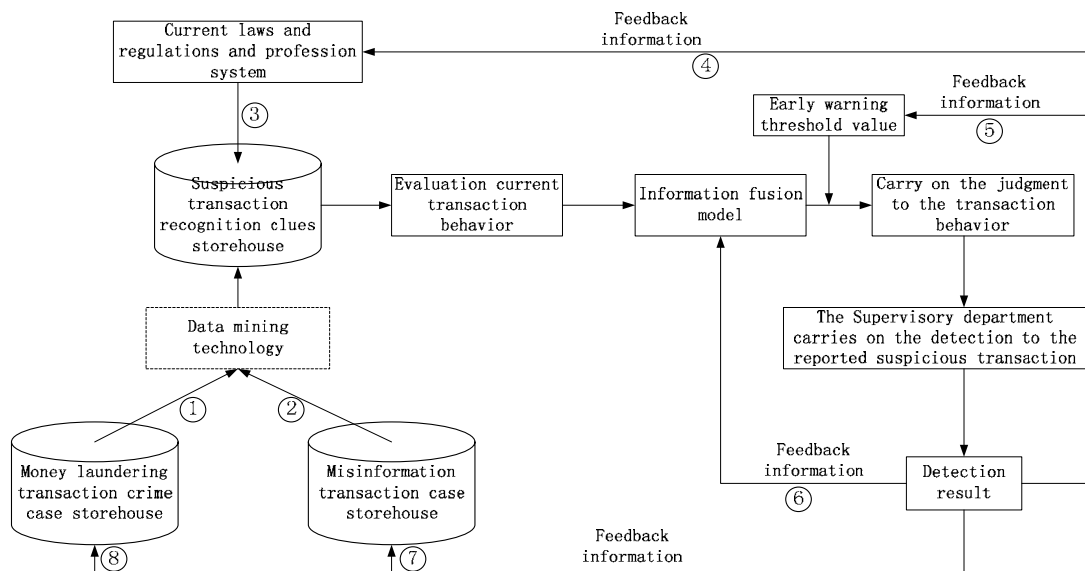

Figure 6.   Money laundering crime monitor model based on financial organ on-line payment function.

IV. ANALYZE THE ELECTRONIC MONEY LAUNDERING PATTERN'S CHARACTERISTIC

A. Electronic Payment Concept

In December, 1996, United Nation's Commission on International Trade develop and adopt "Electronic commerce Demonstration Law" announce formally: Electronic commerce will become the 21st century's mainstream trade and the trade form. The electronic payment is the electronic commerce core, it will be one brand-new payment mean which develop in the commercial activity process and the electronic credit foundation. The electronic payment will be the 21st century's main finance payment pattern [1]. This payment pattern will bring the enormous convenience to the people's work or live, on the other hand the criminal offender will inevitably use it to laundered money, so bring the new challenge to the traditional counter-money laundering system. For example: in 2003, the world biggest network payment company PayPal was accused as a suspect to provide the convenience for money laundering shifting illegal gambling stake 6,000,000 US dollars, final PayPal Corporation is imposed 10,000,000 US dollars fines.

The electronic payment refers to use the specific information electronic data to substitut the fund flow of tradition payment means by the electronic accounting machine and the network. It is a real-time payment potency payment pattern.

The implementation of electronic payment way [11]:

(1) Electronic wallet, the electronic wallet is one kind of means of payment with which the customer shop in the electronic commerce activity. It is a "the new style wallet" in the jot shopping or the purchase small commodity. It takes the smart card as the carrier electron specie payment system, suitable in the multiple functions, owing information storage function, security combination lock and so on.

(2) Smart card, the smart card also known as IC card (Integrated Circuit Card). Install the microprocessor and mass memory unit's integrated circuit chip on the plastic substrate card. The smart card may use to carry on the electronic payment and the canned data. Save massively user's information, like financial data, private encryption key, account information, settlement card number and health insurance information and so on in the chip.

(3) Electronic currency, the electronic currency is one kind of non-cash flow currency carries on the storage pays and circulates by the electronic accounting machine and the network. It has the following characteristics: strong payment compatibility, good expedient, transaction cost inexpensive and so on. It is most important carrier for the electronic payment.

(4) Electronic check, the electronic check is one electronic payment form shifting the cash from an account to another account by the digital transmission. This electronic check payment is connected with the business and banking network to pass the password method, using the common keywords encrypted signature or personal identification numbers (PIN) instead of handwritten signatures. Electronic check payment can save manpower and resources costs, and banks can

participate in e-commerce through Internet banking customers to standardize financial information. Therefore, the electronic check increasingly efficient electronic means of payment.

B. Comparing the electronic money laundering pattern with the traditional money laundering pattern the new challenge for the anti-money laundering work

(1) Reduce the crime cost and the crime work load enormously. The traditional money laundering pattern need to address money-laundering entities, save money, transport, customs and other regulatory authorities to evade detection. The above operation not only need consume the massive time cost and the material cost, but must undertake the big risk. But the electronic payment nearly only involves the electronic information flow, the solid physical distribution may ignore, this causes the implementation money laundering crime becomes easier.

(2) Confidentiality, the customer does not need facing the mechanics of banking personnel and the trust counter completes the payment transaction, only needs through the internet, utilizes to related the computer operation then to complete. If the bank does not complete the payment transaction reporting system, can not be from the voluminous electronic payment transactions to identify suspicious transactions. The experience indicated that the most of the unusual suspicious fund transaction are discover- ed by the bank staff in the service handles process. Because the electron means of payment do not have need the bank staff to handle, use the electron payment not only high success ratio, moreover not easily also discovered. Increase the possibility of evading anti-money laundering supervision and judicial investigation of administration departments.

(3) Reduce the space and time to limit to implements the money laundering criminal activity enormously, using the whole world Internet, the criminal offender transfers huge assets without going instantaneous conversion. This broke through the time and the spatial limitation to transfer funds, can instantaneous complete the transnational turnover of capital, but free from any geographical restrictions. As a result of various countries' law and supervisory system's difference, carry on the effective attack very difficultly to this kind of transnational electronic money laundering criminal activity.

(4) Strong anonymous, Is dissimilar with traditional signed and sealed, regarding trades the bilateral status the confirmation, the electronic payment system is mainly through to the male key, the certificate, the digital signature authentication completes. Only recognize "the card" not to recognize people, the receipt bank, the electron means of payment Bank of issue, CA (Certification Authority) to authenticate the center. Can only verify transaction all quarters the status and the credit side outstanding of deposits, but impossibility examination credit side capital source and nature. The encryption technology protect the customer right of privacy at the same time and provide the safeguard safely for the customer fund, on the other hand also brings the great difficulty to investigate and punishes the money laundering crime. If the related information encrypts, the law enforcement agency is very difficult to know that this information origin, destination, as well as whether contain the electronic currency shifting, be unable in the limited time to investigat and trace money laundering crime.

(5) Initiate the jurisdiction the legal conflict. Because involving the right of privacy the protection, the different country to the electronic currency's supervision exist difference, that makes it easy for money launderers to hide the real property financing transactions. At the same time, on Internet's electron currency transfer is very difficult to determine occurs the place, when investigates this kind of case, the lawman will first face the jurisdiction legal conflict question. These set a higher request to the international criminal justice cooperation.

V. SEVERAL COUNTERMEASURES FOR GUARDING ELECTRON MONEY LAUNDERING CRIME

A. Carry on certain limit to the electron monetary issue main body

At present, the electronic currency's release main body may be financial organs, may also be non-financial organ: the communication company, the software company and other technical manufacturer and so on. This caused the traditional law's tangible effect which had through the financial organ control tradition money laundering activities receivs new challenge. If only permits the financial organ release electron currency, then existing laws about requesting financial organization to control money laundering activities are possible to be suitable for the electronic currency, do not need to make the revision to the existing law. Many European Union countries have adopted this attitude, but the US opposed that such procedure, thought limit the publisher of the electron currency. That limited the competition, so have the disadvantageous influence to the electronic currency technology's development. China should take to allow the non-financial organ to release electron currency but to integrate the financial supervision scope and the strict control strategy. This can encourage the competition and also guard against the risk. That can adapt with the background that the electronic currency's infrastructure and the application aspect are quite backward.

B. Establish certain key trust mechanism

Enable the government to obtain the personal key in the electronic currency password technology in the particular case. Because the encryption technology has brought much difficulty for the law enforcement agency, they are unable to break the related information without the personal key, and also unable to carry on the control to the money laundering activities. Therefore, carries on the trust by the government apparatus to all personal keys, under controlled condition, such as the need to track down money-laundering criminals, may obtain the personal key through certain procedure from trust organization, and decrypt the related information.

Certainly, this must in seek for a balance point in the customer right privacy protection.

C. Establish the perfect electronic payment transaction automatic reporting system

In order to avoid the laundering money criminal to use the electronic currency to escape the payment transaction reporting system's surveillance, the government apparatus should establish the perfect electronic payment transaction reporting technology system. Its importance not only lies in founding the ample evidence after the money laundering criminality occurs, more importantly when the money laundering criminality just occurred can monitor these crimes, and coordinated the Public security department to put a case on file and begin investigations. This system's basic function should contain the following functions: inquiry, contrast, compile, analysis large quantity and suspicious transaction. At the same time, regarding "the large quantity and suspicious transaction", the system should have is quite scientific and the quantification target limits, relying on the highly automated electronic payment transaction reporting system to automatically filter out some unusual characteristics typical of electronic payment transactions.

D. Expand the counter-money laundering owner's coverage

The counter-money laundering is a comprehensive work, it needs the community widespread coordination, except the financial organ, also includes the non-bank financial institutions: the electronic currency publisher, the Internet serves provider. Because the partial electronic currency must draw support from Internet to be able to complete the fund transmission process, so long as money laundering link on-line, the Internet serves provider is possible to trace the following related information: computer's IP address, the link time and so on. That is similar in understanding and grasping message between the traditional money laundering in the bank and the non-bank financial institutions. Therefore, the attacking to the electron currency money laundering crime has the necessity to include the Internet serve provider to the anti-money laundering owner's category.

E. Strengthen the international interflow and cooperation

Once the Electronic bank service surmounts the border, merely depend upon a national strength to fight single-handedly very difficultly to collect the effect. Therefore, strengthen the international exchange and cooperations for the attack transnational money laundering crime is essential. Close contact, exchanging experience and information, was helpful cracks down on the money laundering crime in the entire international society. Specially, the Electronic bank money laundering crime is occult, transnational, complexity and specialization. our country finance Supervisory department should positively with the related International organization (for example Barthel Banking supervision Committee) or the related national finance regulatory authority exchange information and the coordinated monitoring measure, achieves to the Electronic bank service supervision mutual recognition, formulates together with the consummation related Electronic bank transaction laws and regulations, establishes the international society can accept, the healthy Electronic bank international frame generally.

VI. SUMMARIZE

The money laundering crime has been recognized to the economical and the social development huge harm in the international society. At present in the world the overwhelming majority country or the area explicitly expressed that the counter-money laundering's firm standpoint, and advances the counter-money laundering legal regime construction positively. Along with financial computerization tendency further development, since the 1990s, the world's major country and the International organization has given the close attention to the electronic currency, widely research and discuss the potential economic, legal and social issues. This article has first analyzed money laundering pattern under the electronic payment background, then has analyzed the characteristic of the electronic money laundering compared to tradition money laundering pattern and the new challenge which brings for the counter-money laundering work. Finally, proposed several countermeasures to guard electron money laundering crime based on the above research.

REFERENCES

[1] Liu Cheng-he. Initially searche the electronic currency and the money laundering crime[J]. Shandong public security Training school journal, 2004(07): 84-87.

[2] Yan Li-xin. The European and American counter-money laundering organization construction pattern to our country's enlightenment[J]. Jiangsu social sciences, 2006(06): 67-70.

[3] Hu Ying. Analyze the Electronic bank service counter-money laundering supervision difficulty and countermeasure[J]. Finance and economy, 2007(07): 83-84.

[4] Luo Xufang. In the Electronic bank service's money laundering with instead launders money [J]. Financial computerization, 2008(12): 48-49.

[5] Xu Shihai, Gao Yunfei, Huang Cheng, Ji Ming. The electron means of payment money laundering question discusses Accountant [J]. Financial Accounting, 2008(02): 40-43.

[6] Ji Ruipo. Discusse the electronic currency counter-money laundering question[J]. China real estate finance, 2007,12:17-19.

[7] Feng Yun, Yan Chang, Yang Dong-mei, Zhang Jing-jing. Detection and supervision for money laundering in e-commerce based on third party online payment [J]. Systems Engineering Theory and Practice, 2008(12): 60-69.

[8] Tang Jun. An Anti-Money Laundering Data Monitoring and Analytical SystemBased on Customer Behavior Pattern Recognition[J]. South central finance and economics politics and law college newspaper, 2005(04): 62-67.

[9] Tang Jun. Commercial bank counter-money laundering data report system and customer relations management

system management system's integrated [J]. System technology, 2007(11): 41-43.

[10] Chen Yun-kai, Sun Xiao-lin, Ma Jun-hua. Study on Money-Laundering Detection System and a Key Algorithm [J]. Computer science, 2007(03): 201-204.

[11] Yang Yi-tao, Luo Meng-lin, Zhang Zhi-guo. Discusses electron payment pattern [J] Nanchang Special Report, 2006(02): 46-47.

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