

Toward Developing Medium-long Term Spot Trading E-Transaction Platform for Bulk Agricultural Product in China

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Abstract: Medium-long term spot trading has developed rapidly in China. This paper describes the feature of medium-long term spot trading, and develops e-commerce platform for bulk agricultural product based on medium-long term spot trading model. Finally, benefit and challenges to medium-long term spot trading are discussed. The establishment of medium-long transactions plays a significant role in the regulation of supply and demand, reducing price volatility and price discovery. However, medium-long spot trading is still at the exploratory stage, there are many problems and challenges.

Keywords: Medium-long term spot trading, E-commerce platform, Bulk agricultural product, China

1 Introduction

Along with the modern goods economy's development and productivity of social labor's enormous enhancement, the world market increased gradually, the condition of supply and demand is becoming more complex, the contract bargain price that reflects supply and demand at one time could not adapt the modern goods economy development. With the aim of producing the operator to be able generally to adjust the commodity production promptly, as well as the evasion the price risk which produces as a result of the price adverse change, futures market come into being.

An efficient futures market seeks to create an efficient forecast of price, which takes into account all the price-sensitive information about the commodity

that is available at a particular point of time. This is made possible through convergence of bids and offers emanating from all over the country, and even the world, in a spot trading ring (the single order book of the electronic spot trading platform) of an exchange. The transfer of price risk is facilitated by the exchange because it is possible to lock in the price of future purchase or sale through the spot trading platform of the exchange. An efficient exchange ensures that distortions in futures prices do not take place and therefore futures and spot prices tend to move in tandem. On the last day of a futures contract, the ready or spot price and the futures prices converge. In view of these features of the futures market, it provides an opportunity to the trade and industry to protect their prices without necessarily having to routing their physical transactions through the exchange. The

futures market provides efficient price signals which enables the producers to plan their production strategy and the situations of glut or scarcity can be avoided. The futures market also enables the stockiest and other market intermediaries to plan their stocks in an efficient manner. It encourages storage as well as warehousing in private sector. This is important for trade and industry which is now required to fend for itself, in view of the trend of withdrawal of market intervention in the form of support price by the Government. In view of not-so-happy situation in the procurement, storage, and public distribution, the trade and industry and the futures market have to complement each other. The need for accurate price forecast and efficient transfer of risk have forced the producers of commodities and the trade and industry to participate in the commodity futures market. The National Multi-Commodity Exchange is providing an efficient futures market in specified commodities to strengthen the competitiveness of our trade and industry [1].

The Chinese futures markets started spot trading in 1993. They have seen some tumultuous events in the last 10 years, and they are still evolving. During this period, the Chinese government implemented many regulatory reforms in the governance of its futures markets. While the research findings on the effects of government regulations on futures markets are mixed, the regulations on the futures markets in China are more “general” regulations that focus on the spot trading environment and general operational structures. These regulations are intended to establish stability and regularity in the spot trading of these futures contracts, as spot trading in Chinese futures markets is generally perceived as highly speculative [2].

Currently, there are over 300 varieties of commodities futures in the United States futures market. India, as a developing country, has more than 100, while China has only 19. Although the agricultural futures market in recent years on a number of new varieties, but in comparison with the international market there is still a wide gap between the domestic entities and the futures market in china can not meet the requirements of economic

development [3].

As a result of China's futures market contracts can not be expanded quickly, the medium-long term spot trading for non-futures market list product came into being. In recent years, medium-long term spot trading in China has made rapid development, but there are also many problems.

Bajs Davor¹, Majstrovic Goran(2005) proposed a basic data about transmission network and identifies potential congested areas under future market conditions taking into account predicted network middle-term development [4].

Dubé Nicolas¹, Parizeau Marc(2005) proposed an original compute time pricing model based on historical data harvested from previous agreements. A gaussian distribution averaging algorithm with correlated values in regards to execution and deal time is used to calculate the resource indexes predicted time-slot pricing, a valuable estimate that can be used for brokering decisions in a wider perspective [5].

An electronic market platform usually requires buyers and sellers to exchange offers-to-buy and offers-to-sell. Ludwig Simone A., Raisanen, Larry, Reyhani, S.M.S(2005) used multilateral and integrative e-negotiations to investigate a approach which attempts to find the best buyer-seller pairs, for an equal number of buyers and seller, using either matchmaking or a well-tested genetic algorithm: NSGA-II. The goal is to match as many buyers and sellers on objectives [6].

E-commerce has substantially affected the trade pattern in the world. Wang Tien-Chin, Lin Ying-Ling(2008) established an analytical hierarchy framework to help small and medium enterprises predicting implementation success as well as identifying the actions necessary before implementing B2B e-commerce to increase e-commerce initiative feasibility. The consistent fuzzy preference relation is used to improve decision making consistency and effectiveness [7].

The paper discusses medium-long term spot trading and study a case of medium-long term spot trading platform in China. In section 2, the feature of medium-long term spot trading has been discussed. It

also describes the different among medium-long term spot trading and the future market, the different among medium-long term spot trading and the spot transaction. Section 3 develops e-commerce platform for bulk agricultural product based on medium-long term spot trading. Section 4 discusses some challenges to medium-long term spot trading and draws the conclusion.

2 Medium-long term spot trading

2.1 Overview

Medium-Long term spot trading are transactions in accordance with the instructions of both the transaction price priority, generate electronic transactions, and transaction settlement orders designated physical storage of the transaction settlement. That is, the future of this transaction or on a certain day of a delivery, and settlement on the goods may be transferred or redeemed prior to the transaction.

Since 1997, many medium-Long term spot trading market have been set up, such as coal mines, steel mills, plastics, chemical. Both medium-Long term spot trading market adopt a membership system for transactions, involves manufacturers, traders, end users and other members. In general, the buyer must pay a transaction into the bank to deposit a dedicated hosting account, general deposit ratio 20%, while the two-day period retroactive to ensure transaction security, reduce transaction risks.

Through professional spot trading platform, the medium-Long term spot trading market provide traders with online auction, bid, tender transactions, supermarket and storage of goods purchase and sale transaction information, while providing up-to-date orders, logistics news, price trends, company news advisory transactions both non-disclosure of information, that is, the buyer who do not know the seller, the seller who do not know the buyer, making prices more transparent and fair.

2.2 Compare with spot transaction

Although the medium-long term spot trading market is based on the spot transaction, there are much difference among the medium-Long term spot trading market and the spot transaction market.

- Difference in Allocation of funds. Traditional transaction must have a venue or purchase costs, labor costs, transportation costs, buying and selling costs, taxes and other fixed costs input costs, then liquidity. But electronic transactions in medium-long term spot trading is full of liquidity, when the transaction took place procedures fees, no transaction is in full flow reserve funds, and the investors decide funds into and out themselves.
- Different spot trading partners. Traditional direct cash transaction is the product itself, there are samples, there are physical, pricing the goods. But medium-long term spot trading is direct ownership of goods, rather than the product itself. Traders only consider the number of transactions, and the product should comply with national standards and access to instruct the warehouse of goods.
- Different transaction costs. Traditional spot trading prices in the wake of its geographical location, local supply and demand in all regions of the reasons for the relationship between regional differences exist. If a person from point A to point B in a certain place to buy the goods shipped back to point A, which would have cost of living, running costs, taxes, costs of venues such as the purchase cost of the lease. But electronic transactions in medium-long bargain the same goods in different places simultaneously, focus on the auction. The last purchaser take delivery of goods from the latest warehouse point, which greatly reduce the transaction costs.
- Different settlement funds. The general situation of traditional spot transaction is that the seller and the buyer signed the contract, and then complete the exchange of goods and financial settlement step by step according to the contract. But electronic transactions in medium-long perform as a result of the use of cargo system; buyers and sellers are subject to its constraints. After the transaction

closed, computer network system settles the funds for the two sides at the same time.

- Different security system. Traditional spot transactions adopt "Contract Law" and other laws for the protection. When the contract can not fulfill, the inevitable legal action such as arbitration usually is adopted to resolve this dispute by the relevant departments, and it is unknown whether the two sides carry out the provisions made by the arbitration body. In addition to warehouse receipt transactions of the implementation of national laws, regulations and rules of trade transactions, the medium-long term spot trading use economic levers to balance the constraints for buyers and sellers, and buyers and sellers are in the performance bond for the protection, binding both sides to honor the transaction.
- Different commodities. Traditional spot transactions allow all varieties to enter the circulation of goods. But electronic transactions in medium-long term transactions are subject to national standards for species restrictions.

2.3 Compare with future market [8]

Both the future market and the medium-Long term spot trading market are in special place where is granted authorization by central government, use standardized forms of all transactions, and be implemented daily limit up spot trading system. There are much different among the medium-Long term spot trading market and future market.

- The subject of the transaction are different: the subject of the medium-Long term spot trading market is the standardized goods, belonging to the scope of the spot transactions, and the subject of futures market are standardized contracts.
- Different form of settlement: the use of medium-Long term spot trading were settled with a combination of real-time and random settlement, while futures market contracts must be in accordance with the provisions of the mandatory time for the form of settlement.
- Different risk. The risk of futures is much greater

than the medium-Long term spot trading.

3 Developing medium-long term spot trading platform

As discussed in section 2, the medium-long term spot trading need a spot trading platform. The spot trading platform is an information system with management system, business rules, computer hardware and software systems for integrated online platform. This platform is designed for bulk agricultural products.

3.1 User need

The user needs a software which is a high-performance, adaptable, fault-tolerant electronic commodity spot trading system. This spot trading system base on a client / server structures, and its basic features include: real-time transactions, inquiries market information and delivery in expiration date.

The spot trading system for computing data accuracy percentile and data in support of the largest is power of 10 to 13. The transaction market information is updated in real time, and interval time is one second.

Transaction market quotation of each commodity should be provided, such as the latest prices (current prices), inflation decreases, the previous spot trading day's closing price, opening, the highest price, lowest price, settlement price, spot trading Volume, turnover, blank panel, etc.

3.2 System design

3.2.1 Function modules

Modularization design and data center pattern are adopted in the medium-long term spot trading platform. The whole system can be divided into the following three subsystems: the transaction subsystem, system management tasks, clearing settlement system.

- Spot trading Engine subsystems

The Spot trading Engine sub-systems is used to

generate orders, the implementation of the transaction matching rubbing together and generating market data. For each user in this platform, ID is assigned a unique set of system access. The access includes the following: enter orders, see market information, and check transaction returns from the Order. Traders can enter orders, view market information and transaction returns. Fig.1 illustrates the structure of Spot trading Engine subsystems.

- System management tasks

System management tasks is adopted for the maintenance of transaction management, data maintenance and market surveillance. System management tasks provide the normal transaction data, real-time transaction process management and online

processing.

- Clearing & Settlement system

Through calculating profit and loss positions, profit and loss positions of a member company in a day, clearing system complete the transaction clearing, settlement after the day end. Fees, an additional margin, risk funds is transferred among members in the profit or loss. Auto-transfer system also provides a wide range of billing statements, such as transaction schedules, transaction summary, fund balance sheet and so on. Clearing the results will directly affect the ability of the members to participate in the transaction the next day. Fig. 2 illustrates the basic components and its relations of the system.

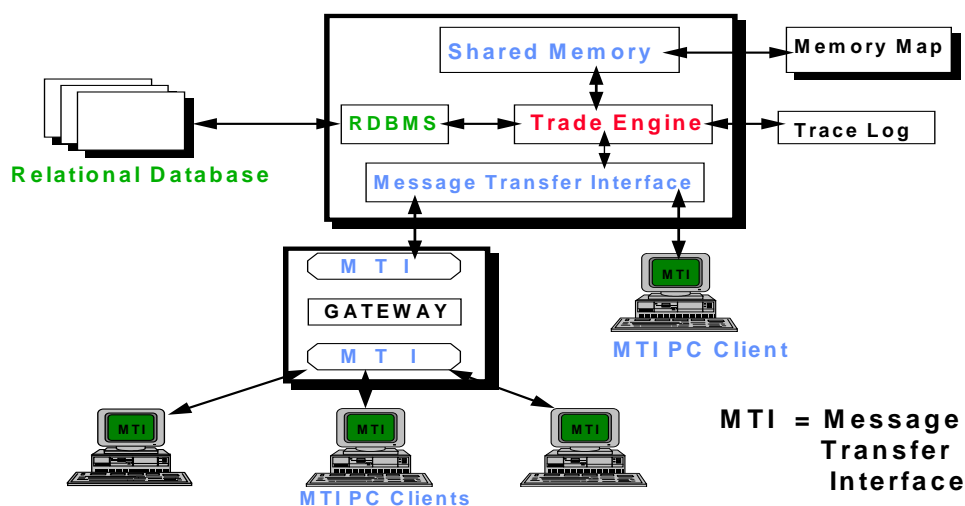


Fig.1 Spot trading Engine subsystems structure

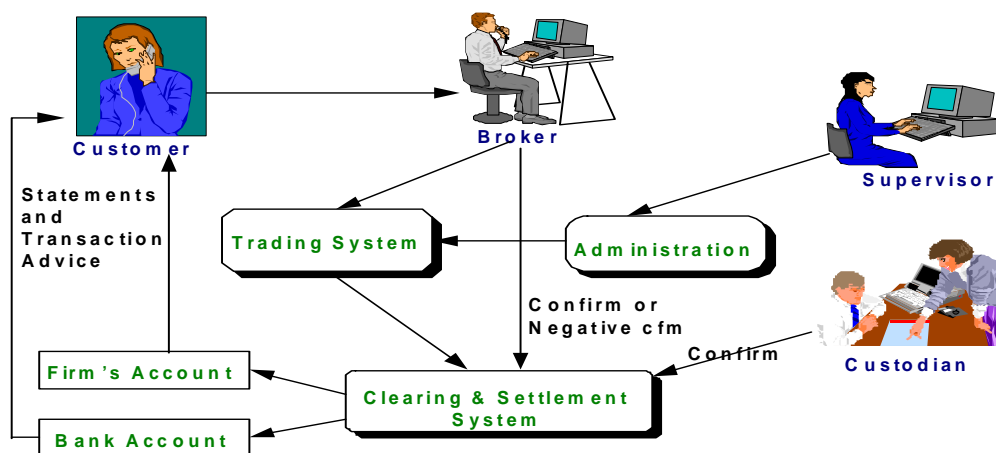


Fig.2 Basic components and its relations of the system

3.2.2 Program structure & Program Flow

In order to achieve the needs of users, the system analyst analyzes the program structure (see Fig. 3) and program flow of the medium-long term spot trading platform. The program flow involves: The Trade Engine Program Flow(see Fig.4), The Daily Program

Flow of Trade Engine(see Fig. 5), The Startup Flow of Spot trading Engine(see Fig.6), The Day End and Update Database of Spot trading Engine(see Fig.7) ,and the Basic processes clearing system(see Fig.8).

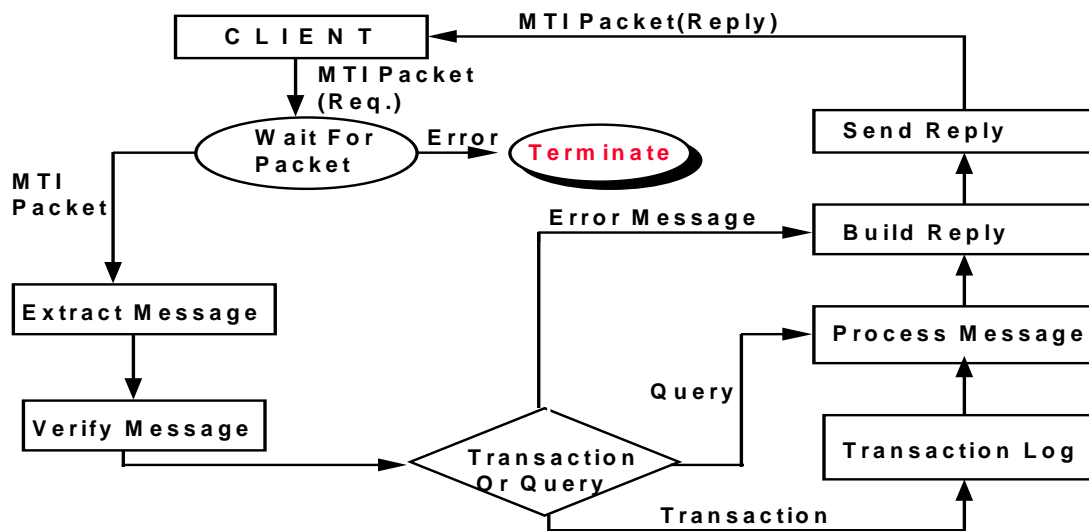


Fig.3 The Program structure of Trade Engine

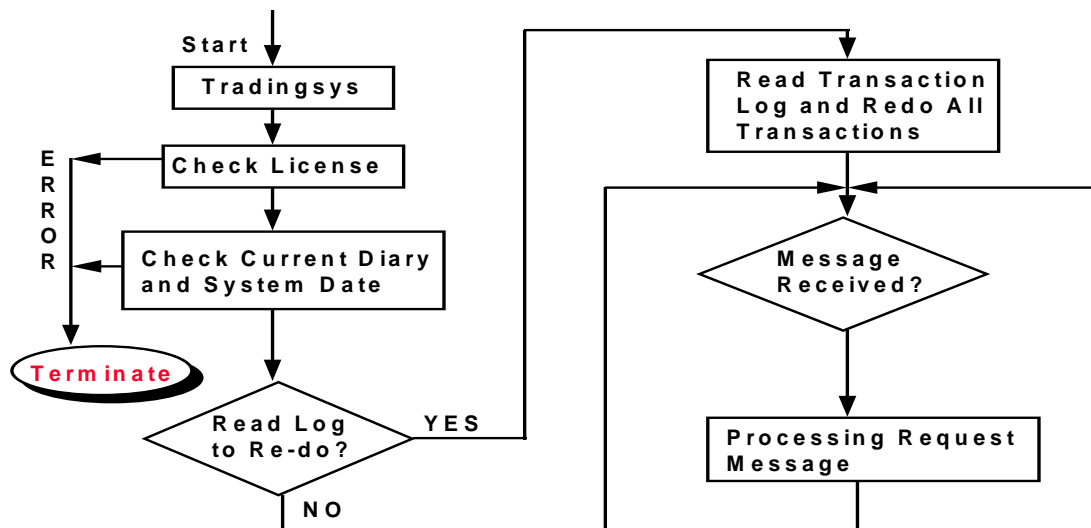


Fig.4 the Program Flow of Trade Engine

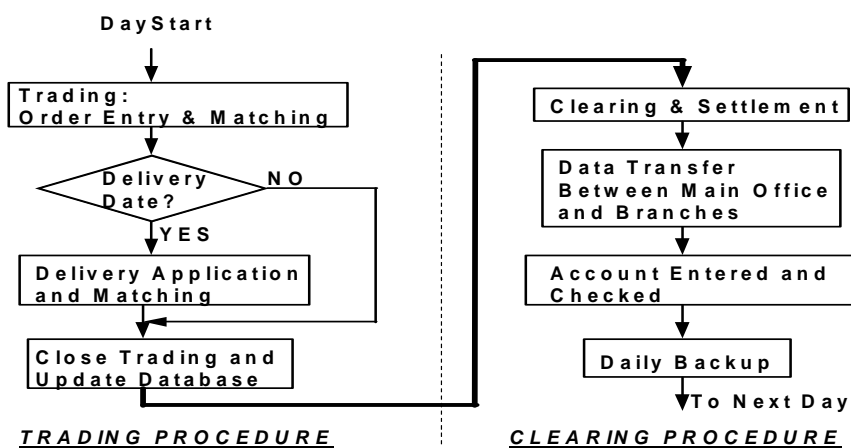


Fig.5 the Daily Program Flow of Trade Engine

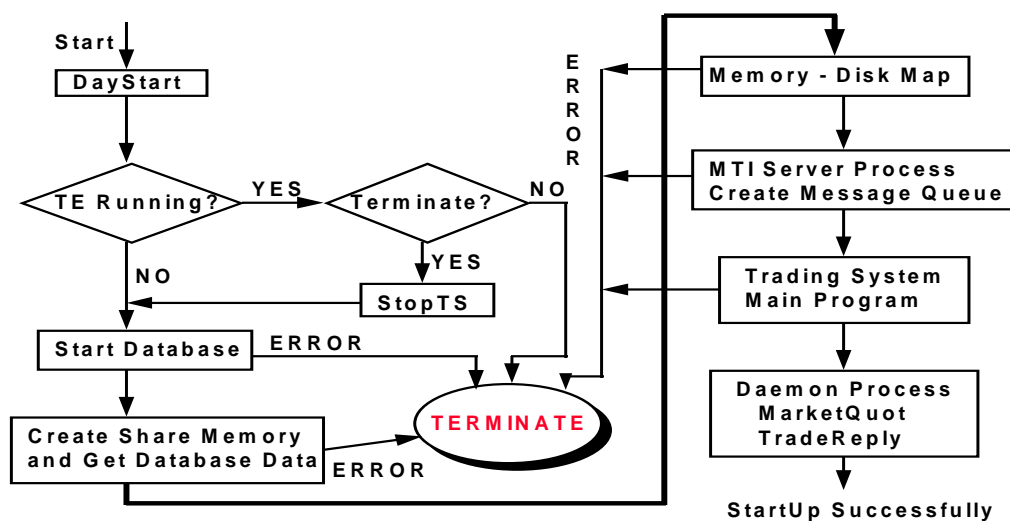


Fig. 6 The Startup Flow of Spot trading Engine

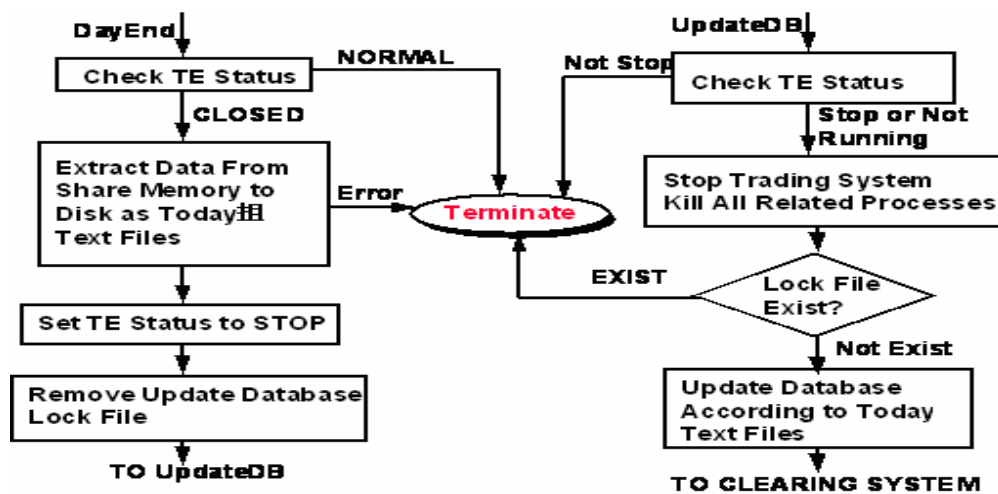


Fig.7 The Day End and Update Database of Spot trading Engine

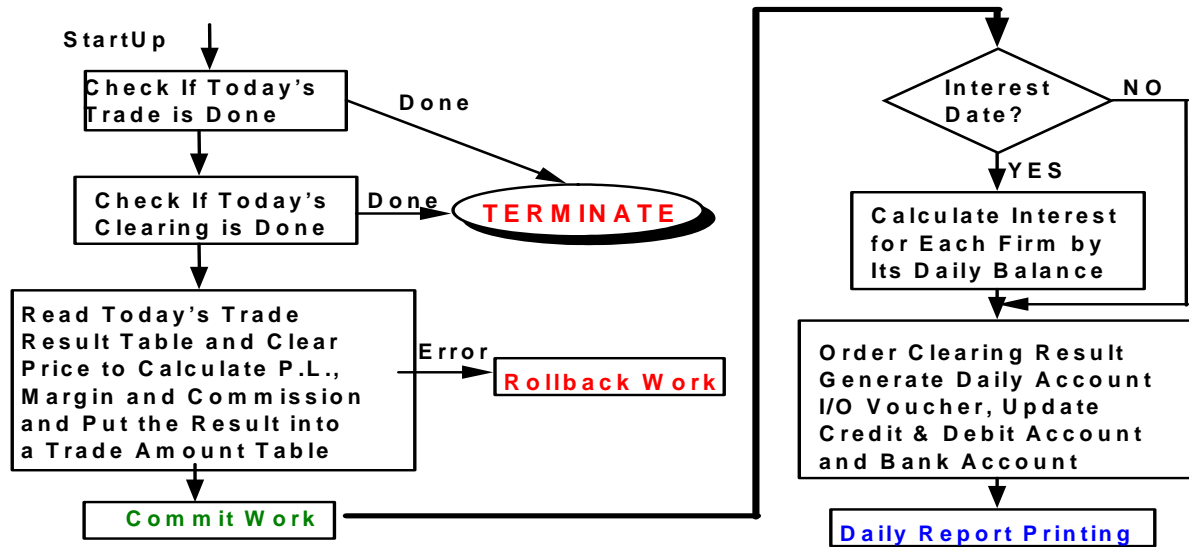


Fig. 8 Basic processes clearing system

3.3 System development

3.3.1 Network Architecture

In accordance with customer demand, spot trading system software environment is LINUX+ ORACLE 10G Based on TCP / IP network and the BSD SOCKET, this system transmits information and

provides a reliable and fault-tolerant communications services.

Fig.9 illustrates the Network structure of the medium-long term spot trading platform.

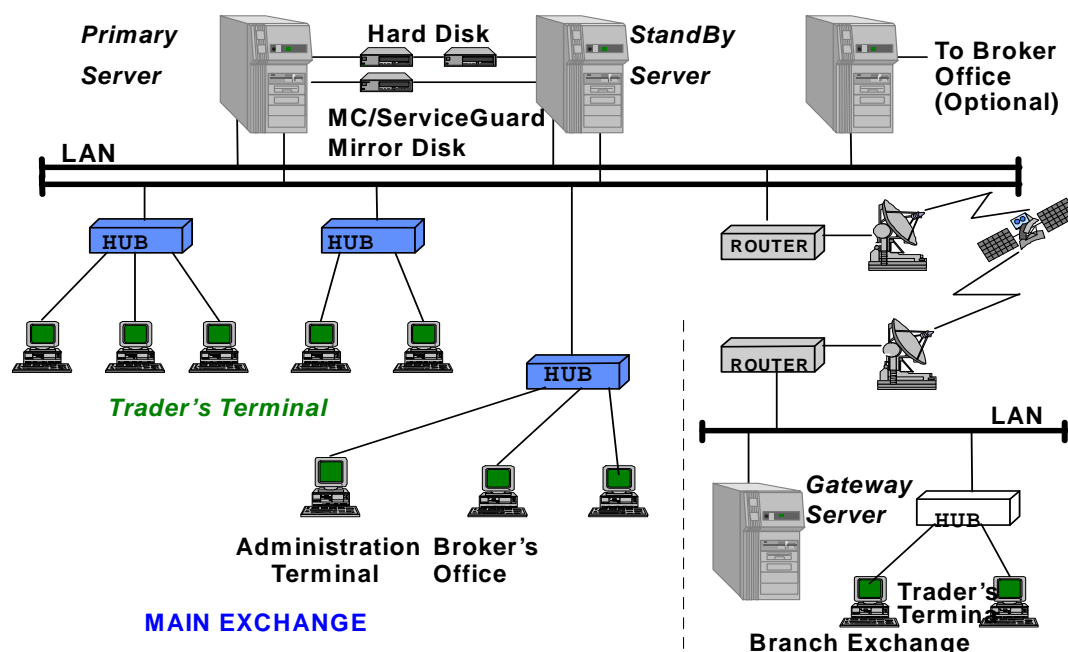


Fig. 9 the network Architecture

3.3.2 User interface

The client (trader terminal) can run in PC with

MS-DOS or MS-WINDOWS. An interface for Clearing & Settlement is illustrated in Fig.10.



Fig.10 A user interface on the medium-long term spot trading platform

4 Discussions

In China, there is a wide variety of products in large and small, long-term spot market. The establishment of medium-long transactions plays a

significant role in the regulation of supply and demand, reducing price volatility and price discovery. However, medium-long spot trading is still at the exploratory stage, there are many problems and challenges.

- Financial security. It is a very long period of time

from the transaction to the physical delivery, here the market changes will occur, and some performances that don't conducive to the purchase may occur, such as, the buyer can not pay on time due to lack of funds, or the seller can not guarantee supply, if market prices trend up, the seller do not want to deliver in accordance with the original price, and vice versa. These factors make transactions face with a great long-term credit risk. In order to avoid this risk, each medium-long spot trading has been the introduction of margin spot trading system, in accordance with the contract and about a certain percentage of the value of bonds to the buyers and sellers. According to the requirement of new State Council promulgated "Regulations on the Management Futures", the ratio will also increase the margin value to about 20%. However, much medium-long spot trading market does not strictly enforce this policy.

- Information security. The so-called information security, that is, information providers should be open to the traders to provide the transaction information timeliness and fairly. Problem of information security issues include: 1) Spot trading market enterprise is not hosting the timely disclosure of important information. 2) Market information channels of the sponsored enterprise are not disclosed to the public. 3) The more important: some of the organizers intend to guide dealers by way of the transaction comment, analysis and recommendations.
- Transactions supervision. Whether the transaction and market is fair, honest or not relates to traders' property. Loss of market supervision is a major source of their problems in the medium-long spot trading market. There should be a strict approval system and the state ministries and commissions should authorize approval of certification directly. At the same time, for the current market that already exists, it should be re-qualification, and clean-up unqualified market. In addition, for the safety of transaction, settlement and security deposit in medium-long spot trading market, it should draw on the futures market's practices to

prevent serious incidents.

In September 2008, relevant state ministries and commissions in china jointly issued the "a comprehensive inspection of electronic transactions for bulk commodities market," which want to rectify the medium-long spot trading market comprehensively. This also shows that the medium-long spot trading still faces a great challenge.

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