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Research on Business Process and E-business Platform Design of Barter Trade

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Abstract: The development of China-ASEAN free trade area strategy impelled the trade between Chinese and ASEAN. Realizing barter trade by means of the e-business platform will make the barter trade more initiative and convenient and promote the development of bilateral trade. Basing on analyzing the business process of barter trade e-business and then this paper put forward a system frame work of barter trade e-business platform, at last this paper discuss the designing method of barter trade e-business platform.

Key words: Barter trade, E-business, system structure and design, trading platform

INTRODUCTION

Various member nations of China-ASEAN have respective comparison superiority, the difference of the natural resource, the industrial structure and the productivity aspect cause the bilateral trade to have the very strong complementarities. Various countries of the ASEAN mostly are the developing country; the economical level is not developed. After the Southeast Asia financial crisis since 1997, in the various countries Enterprise of the ASEAN, the fund tight, the goods stored up and barter trade started in various countries of the ASEAN.

With the development of information and net technology, the new economy charactered by e-business has become the irresistible current. So finishing barter trade by means of e-business and then connecting with the deferent government department with related to e-business service and realizing the function of changing goods, settling accounts, declaring dutiable goods, applying to custom, inspecting goods by the net, all that will make convenient for enterprise bargaining and promotes the bilateral barter trade between China and ASEAN (Jeon *et al*., 2006).

ANALYSIS OF BUSINESS PROCESS OF BARTER TRADE E-BUSINESS

The difference between carrying barter trade basing on e-business platform and the traditional barter trade is the appearance of the third party barter trade facilitators. After the third party barter trade facilitator appearance, the owner of commodities does not searching the commodities that he needs by himself, the third party barter trade facilitators will help to search and finish the bargaining and accept commission according to the trading volume (Cuddington and Urzua, 1989).

The barter trade business process of barter trade e-business platform is showing as Fig. 1, the analysis of the business process is as following.

Logging in: After members logging in and validate electronic identity, a barter trade account will be created for every members according to enrolling information. If members want barter goods and need refer an explaining bill of bartering goods (Including characters, quantity, price and so on). If members have demand, also refer an explaining bill of demanding goods (Including characters, quantity, price and so on).

Evaluating credit: After enrolling and validating, members need refer some operation data in order to the evaluating credit center of the third party barter trade facilitators evaluates the credit of members'. The evaluating indexes include comprehensive operation environment, enterprise scale and diathesis, operative capability and developing foreground as well as carrying out status of credit and so on.

Acquiring barter credit: The third party evaluating institution, barter trade broker and members who want barter goods evaluate the barter goods and then refer an evaluating bill of barter goods (Including value and quality and so on). At the same time, members need hand in bail according to the total goods value. Basing on the evaluating result, members will acquire credit as the same goods value by means of mortgaging the goods to the third party barter trade facilitators, so the facilitators will transfer the barter credit to members' barter trade account. When members have barter trade account, the facilitators

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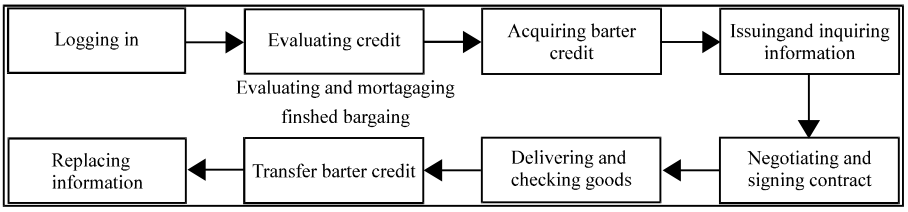

Fig. 1: Barter trade business process figure of e-business platform

will open a fund account according to the evaluating result and the goods' barter credit, the aim of that has two, one is to offer bail payment and loan payment certificate for bartering enterprise, the other is to carry through settlement fund by means of barter credit.

When members have no bartering goods, members will buy barter credit according to members' credit degree or mortgaging other goods and services (When members buy barter credit, a barter trade account and fund account will be opened, the fund account is opened according to the amount of the barter credit amount.)

Issuing and inquiring information: The members will issue barter trade goods information by him or consign the facilitators by means of the e-business platform and the demanders will conveniently inquire the barter information (Gadi *et al*., 1998).

Negotiating and signing contract: The two parties of barter trade need negotiate by the assistance or guidance of barter trade brokers, at last the two parties of barter trade and the facilitators will sign the bargaining contract together. The bargaining contract has the final force ad effect. The content mostly includes product price, product quality and quantity, delivery place, transport costs and so on.

Delivering and checking goods: After signing the contract, a notice of delivering and accepting goods will come into being by the e-business platform. And the owner of the bartering goods will deliver to the appointed place, the demander will check and accept the goods according to the explaining bill of goods (Including quality, characters and so on.)

When the practicalities differ from the explaining bill of goods, the two parties of barter trade, the third evaluating institution, barter trade broker evaluate the goods together and refer the evaluating bill of bartering goods (Including goods value, quality and so on.). If the two parties of barter trade want continually bargain, the facilitators will transfer the barter credit according to the newly evaluating bill of bartering goods. And if the two parties of barter trade want terminate the bargain, the blaming party will assume responsibility and pay the costs in this bargaining process.

After the bargain finished, the accepter of the bartering goods will fill in the checking and accepting bill of bartering goods and refer the bill to the facilitators (Haddawy *et al*., 2005).

Transfer barter credit: Taking the checking and accepting bill of bartering goods as criterion, the related department will refer the desiring bill of transferring credit to the department of managing account, after examined and verified, the credit of the two bargaining parties will transfer by the department of managing account.

Replacing information: After finished the barter trade, the two bartering parties need update the bargaining information.

Complementarities of the business process of barter trade e-business:

- All the bargaining goods need the producing place certificate and the checking certificate of quality that will reduce the difference between the practicalities and the bargaining goods specification
- If bargaining goods cannot exchange in some times, the facilitators will remind members to redeem the goods. Members will redeem the goods at the same price as members acquire the credit by cash or credit. If members do not want redeem the goods, after some times, the facilitators will auction the goods. The obtaining value in auction will pay the auction handling charge and the credit that the facilitators provide at previous. If the obtaining value in auction cannot compensate the credit, members will compensate the residual
- In the above-mentioned business process of barter trade e-business, the basic hypothesis is, the two bartering parties have other's demand just right, that is to say that multilaterally bargaining is not inexistence. However, in more instances, there is

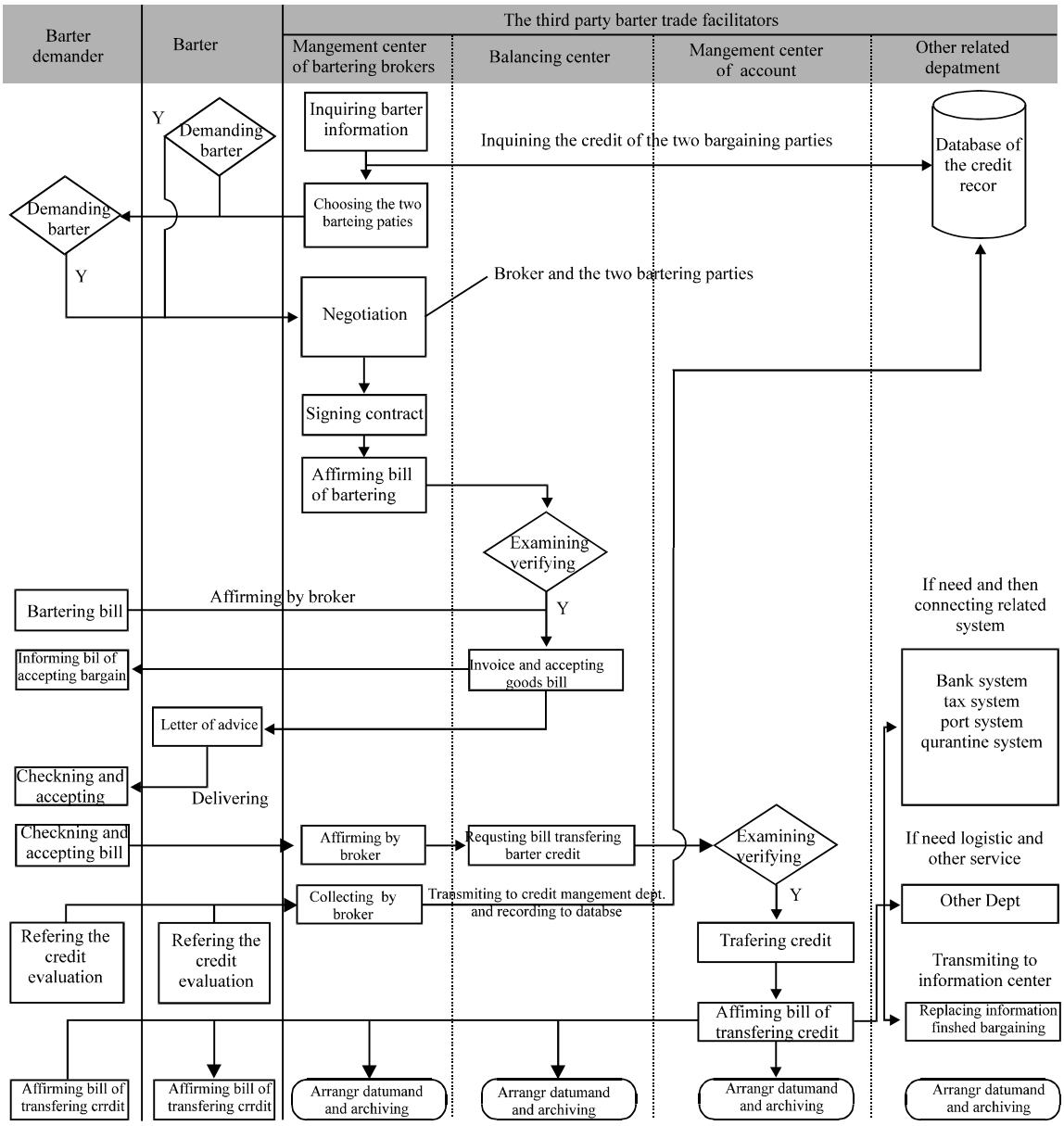

Fig. 2: Business process figure by bartering brokers deputizing barter trade e-business platform

multilaterally bargaining. And here, the business process of barter trade e-business is as the showing of Fig. 2. At first, the broker will aid the two bargaining parties to negotiate and sign the bargaining contract and then continually seek other bargaining parties to negotiate and sign the bargaining contract. The Fig. 2 is just showing the business process of barter trade e-business in such case (Shin and Shim, 2006)

SYSTEM OF BARTER TRADE E-BUSINESS PLATFORM

The barter trade e-business platform is a voluminously system that includes computer software, hardware and technology system of communication network as well as many departments joined. The competitive factors of the barter trade e-business system include network system, users (Including individual consumer and enterprises),

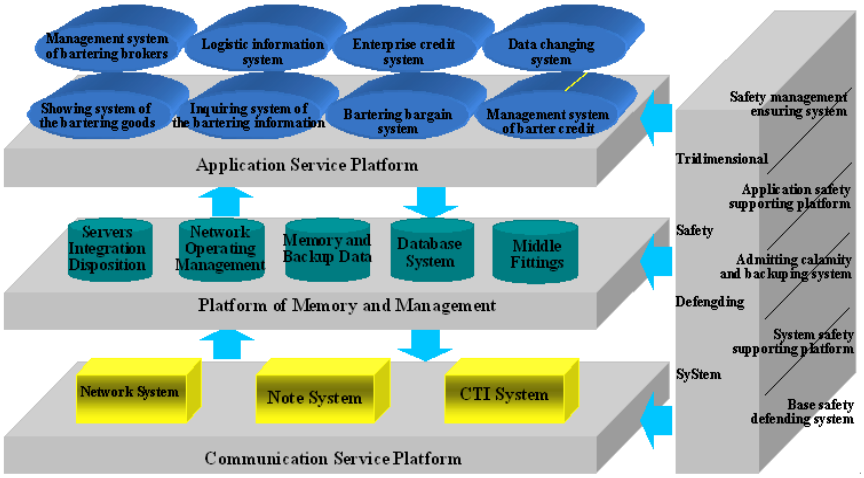

Fig. 3: System framework figure of barter trade e-business platform

banks, logistic center, certificate institution and administration management department, the periphery environment of operating the barter trade e-business system include policy, law, intimacy and technology criterion and so on (Yang, 2012a, b).

The system framework of barter trade e-business platform is as the Fig. 3 showing. The barter trade e-business platform is a network system that includes communication platform, application platform, management platform, memory platform and many applying systems as well as directly connecting the port, revenue and other department, the structure is analyzed as following.

Communication platform: This platform is to realize communication between the different platforms. In the communication platform, need consider the redundancies of outlet (Including circuit and equipment redundancies). By means of expanding the equipment capability, the speed of visiting network will be advanced and the reliability and redundancy will be enhanced. There will be the hardware of scanning leak and checking encroachment as well as the server of buffering memory basing on the contents in the way out, all that is to the conversely buffering contents for the e-business servers. In order to assure the safety of e-business by the net, the redundancy gateway of Virtual Private Network (VPN) is needed, this is to realize the safety Security Socket Layer (SSL) VPN.

Memory platform: Enlarging the storage system basing on the Storage Area Network (SAN) is to assure the reliability of data memory. That will be need build the memory SAN in different place. Memory platform includes integrated servers disposition, data memory and backup, database system and middle fittings.

Application platform: By means of the special firewall equipment, the security between the different platforms is insured and there will be protected by the firewall at the any net passageway of the e-business platform.

Management platform: By means of the router, management terminal, and the network management software, building the newly network management system which includes operation system and network operating management system.

Application system: The application platform includes showing system of the bartering goods, inquiring system of the bartering information, bartering bargain system, management system of barter credit, management system of bartering brokers, logistic information system, enterprise credit system and data changing system which can connect to the port, the bank, the revenue and other department (Kim and Lee, 2006).

SYSTEM DESIGN OF BARTER TRADE E-BUSINESS PLATFORM

Topological structure of barter trade e-business platform: The structure of barter trade e-business platform is the symmetrical structure (Including double machines and the backup standing by heat), flat framework (Including core and connecting layers), the topological structure of barter trade e-business is showing by the Fig. 4.

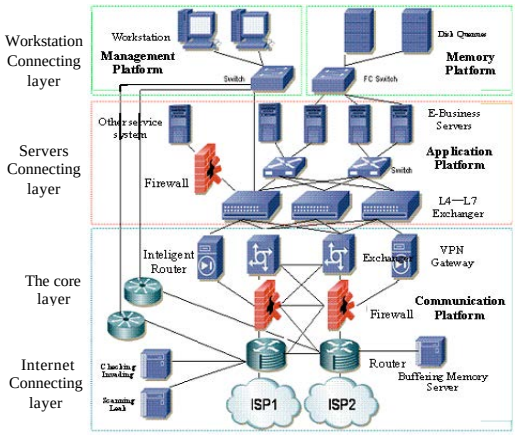

Fig. 4: Topological framework figure of barter trade e-business platform

According to the deployment and function, barter trade e-business platform can be divided four compositive parts that is communication platform, application platform, management platform and memory platform.

Communication platform: The communication platform is corresponding to the Internet connecting layer and the interior core layer. The mainly equipments include way-out routers of all redundantly designing, firewall, interior core exchanger, boundary safety equipments and buffering memory equipments. As the most important constituent, the equipments and the link need doubly backup and realize no-single-point malfunction and enhance the system reliability.

Application platform: The application platform is corresponding to the Internet application-connecting layer. In this, the L4-L7 load balancing equipments and the server clusters of offering e-business application are deployed.

Management platform: The management platform is corresponding to the Internet application-connecting layer. The deploying workstation is used to deploy inspecting and managing network.

Memory platform: The memory platform is corresponding to the Internet application-connecting layer. The memory platform offer the background SAN of database, so it is the important data-backup area.

Network deployment of barter trade e-business platform: There is four subsidiary platform including communication platform, application platform, memory platform and operating service in designing barter trade e-business platform. According the layering principle, the platform is designed for two layers, that is core layer and connecting layer (Internet connecting layer and Workstation connecting layer.).

In the core layer, employing the three layers router exchanger of highly handling capability and double machines of backup each other. By optical fiber connecting up the intelligent exchanger, newly employing servers load balance and connecting to the e-business servers clusters through the intelligent exchanger. Core exchanger connects down firewall by optical fiber; firewall connects down router by optical fiber and firewall connects gateway of SSL VPN which will realize the VPN connection of redundancy and reliability and offer the SSL VPN service of e-business.

In the connecting layer, optical fiber tube exchanger is employed that connecting e-business servers clusters and SAN memory system which realize the admitting calamity in different places. Gateway system connects intelligent exchanger by optical fiber and the same connect the core network equipment by special router which realize the exterior management of Internet. The more highly way-out router connects ISP which realize the reliable connection of the Internet.

CONCLUSION

In this study, we consider that finished barter trade by means of e-business platform will make barter bargaining more convenient and we analyses the importance of building China-ASEAN international barter trade e-business platform. Basing on analyzing the business process of barter trade e-business and then the designing method of barter trade e-business platform is advanced, this platform takes barter trade as the core and supporting other trade manners, by introducing the system of bank-card and using the barter credit and the special barter trade software, depending on the organization and making a match by professional barter brokers, that will break the restriction of time and place, realize the free exchange of goods and services between enterprises and realize the barter bargaining in one network, in one station and in one table between the barter trade partners.

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