

**FURTHER IMPROVEMENTS TO CBSS**

CBSS was our first attempt to build a Web-based negotiation Support System. Although it was tested in the context of collective bargaining between management and labour unions, it could also be useful for negotiating commercial contracts. We see the need to further improve CBSS in the following ways:

- 1) Currently CBSS is mainly text based. Voice communication can be added, for instance, to the Hot-Line dialogue. However, there could be a tendency for two parties to do negotiation simply through voice channels only. Although voice can be recorded, it is difficult to document the negotiation process and to trace back what was discussed at any particular moment.
- 2) Multimedia (such as graphics, video) and multi-format (such as spreadsheets and wordprocessing) document exchange should be added to support argument and background information

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exchange during the negotiation process. Since CBSS is built in the Web environment, it would be easy to add this function into the CBSS menu.

- 3) To make a negotiation document legal, digital signatures for agreement authorisation should be added once the two parties have reached agreement.
- 4) So far, CBSS supports only one negotiation setting at a time. It should be extended to support concurrent multi-negotiation settings. We plan to build multiple virtual meeting rooms in CBSS so that negotiation parties can book rooms for different negotiation settings with their own private documents maintained and saved separately.
- 5) There was already a third-party mediator component built into CBSS but we have not tested it yet. It is important to find out how instant online consulting during negotiation process could significantly improve the negotiation results.

**NEGOTIATION AND CONTRACT THROUGH E-MAIL**

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**INTRODUCTION**

This paper describes aspects of electronic contracting and Negotiating in South Korea. Since South Korea is a developing country, its national IT infrastructure is not well developed to support all aspects of Electronic Commerce unlike developed countries such as the USA. Nevertheless, there are many new companies which are trying to do business in the cyberspace in South Korea. Firstly, this paper introduces the IT environment of South Korea and other developing nations and suggests that in developing countries, there are several problems that should be solved prior to the full development of electronic commerce when compared to a developed country like the US. Secondly, by presenting an episode of negotiation which happened between the firm and the customer over the price and quantity of the prod-

uct, we show that negotiation involves complex items and suggest that e-mail can act as a rich medium for negotiation. However, in order to have negotiation done automatically, we need an intelligent negotiation support system which understands the natural language of e-mail messages. We propose a framework of such a system. Lastly, contracting can also be done in e-mails or in web sites. But in a developing country such as Korea, there

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is a strong need for third party registry to promote trust and non-repudiation. We propose that third party registry should be run by an agency of the government. The reason for choosing the government is mainly cultural. Similar schemes have been introduced in Japan and the US.

**NATIONAL IT INFRASTRUCTURE AND ELECTRONIC COMMERCE**

We can easily suggest that doing an e-commerce business in a developed country should be different from doing it in a less-developed country; here "development" refers mainly to the level of national IT infrastructure development. National IT infrastructure can be defined as the vision of broadband communication that is interoperable as if it is a single network, which is easily accessible and widely distributed to all groups within society bringing business, education, and government services directly to households and facilitating peer to peer communication throughout society (Kraemer, et al., 1996). But this idealistic vision is hard to achieve for countries with less economic resources.

Nevertheless, South Korea embarked on building its national IT infrastructure in 1994 which was officially called the "Korea Information Infrastructure(KII)" project (Jeong and King, 1996). The Korean government committed itself to promoting industries such as computer makers, telecommunication network builders and value-added service providers, Multimedia firms, Cable TV industries, and Internet-related companies, which is similar to what the Singaporean government was able to accomplish. In other words, Singapore's national IT infrastructure is as well-developed as the one in the US. This is one of the reasons why there is a flourishing e-commerce industry in Singapore (Wong, 1997).

Besides the national IT infrastructure, a country needs the following systems in order to provide a fertile ground for e-commerce.

1. Active and widespread use of credit cards: Countries such as the Philippines, India, and China where credit cards are not widely used cannot find a workable payment method for e-commerce (Asuncion, 1997; Bhatnagar, 1997; Liu, 1997; Rao, 1998). In this respect, South Korea is similar to these countries even though credit cards are widely used since many consumers on the Internet are very much reluctant to give out their credit card number and the personal identification number (Korean credit cards require a PIN in order to be used in a transaction). From the cultural point of view, another reason is the fact that Koreans love to use cash in most business transactions even for a large sum just like people in Hong Kong (Westland, et al., 1997). As for the payment method in e-commerce in Korea, many companies use money transfers through bank accounts, i.e. the buyer sends money to the bank account of the seller and the seller will send the goods to the buyer. This kind of pay-first-get-the goods-later payment method is obviously an obstacle for e-commerce to grow since many consum-

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ers feel insecure. Thus it is clear that without the full trust between consumers and e-commerce companies, even a country with widespread credit card use cannot facilitate the growth of e-commerce.

2. Cheap and fixed price of unlimited use of local telephone line for data communication: Unlike the US, the South

Korean telephone company has a government-owned monopoly. Even though it is trying to upgrade the communication lines with fiber-optic cables, their business policy has not changed, i.e., there is no concept of separate billing for data communication purpose. In other words, if a person makes a local call to the Internet Service Provider and surfs the net for a long time, the person will get a very expensive phone bill. With this kind of environment, it is not easy to do e-commerce.

3. Legal system that acknowledges the contract by electronic messages as legally binding: The South Korean government does not recognize electronic messages as legally binding yet. But as Eun Kim and Pilky Hong (1997) proposed, the preparation of the legal arrangements requires an active role of the government for facilitating the use of e-commerce. In other words, without the government changing its legal system, e-commerce contract is meaningless (Burkert, 94; Wildhaber, 94). The government needs to set up an agency to handle the verification and validation of the electronic contracts, i.e. a third party registry of e-contracts. This agency can give trust in the e-commerce system to both consumers and sellers and prevent repudiation of contracts.

NEGOTIATION THROUGH E-MAIL

The subject firm delivers English news and lessons everyday through e-mail. The charge was US\$10 per month for 5 items of English news and lessons based on news which were about 5 pages of A4 size paper. Upon advertising this through BBS and direct e-mails, the firm started to receive a negotiation offers such as the following.

Prospective customer's e-mail: "Can I get just 1 item a day and pay US\$2 per month?"

The firm's answer e-mail: "No, we can't. Because we have to create 5 items any-

way everyday. We can offer you a free trial of one month and then you can decide."

Then the customer decided to get a free trial of one month. Here is another example of negotiation which happened through e-mail.

Prospective customer's e-mail: "Can I pay at the end of the month rather than beginning of the month?"

The firm's answer e-mail: "Yes, but how do we get confidence in your promise to pay later?"

Prospective customer's e-mail: "Then how do I get confidence in quality, not to mention the continuation of your service throughout the month?"

The firm's answer e-mail: "OK, we will accept your offer; you can pay at the end of the month. But in case you won't pay in time, we will pursue this matter in court."

Prospective customer's e-mail: "Well, thanks, but I will also pursue this matter in court if your service lacks the quality that you initially promised and in case you stop sending English news service in the middle of the month."

The firm's answer e-mail: "It seems that we have no confidence in each other's behavior. I tell you what, how about a free trial subscription for the first month?"

Then the customer decided to get a free trial of one month. After a free trial month, the customer who demanded one-item for less payment decided not to subscribe anymore. On the other hand, the customer who demanded the end-of-month payment decided to sign on according to the firm's conditions which is paying first for the subscription month. The firm had to give out a free trial month and then lost lots of free customers and ended up with about 1,000 customers paying according to the firm's conditions which is paying-at-the beginning of the month.

As we can see from this e-negotiation, negotiating here does not only involve price but also terms of subscription method

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and period. In other words, unlike e-auction systems which allow the negotiating of the price only, the usual negotiation should involve all kinds of secondary items which make the whole procedure very complex (Runge, 1998). This episode shows that the very complex negotiation can be done through E-mail, which validates the recent theories on information richness according to the medium. Namely,

according to the old theory (Daft and Lengel, 1986), when a medium can convey more information, the medium is considered to be information rich. Thus face-to-face communication is the richer medium than e-mail communication since face-to-face communication can convey more information besides just messages such as gestures and tone of voice. However, according to the new theory (Markus, 1994), E-mail turns out to be a very rich information medium by analyzing the empirical evidences in workplaces. Looking at the negotiation through e-mail episode, we prove that the new theory on information richness is correct; people can be bolder when they negotiate through e-mail. In other words, if the service is web-based, it is very unlikely to attract people who try to negotiate everything from price to the subscription method. The Web can provide a structured contract space; people fill out their names and addresses and choose the type of service and payment, but it does not allow the two-way communication for negotiation. Thus we propose that e-mail should be used in e-commerce negotiation with the help of the Intelligent Negotiation Support System. In reality, it is impossible to negotiate through e-mail with several thousand or more people. Thus this process has to be automated. We propose here that the Intelligent NSS which understands natural language and utilizes case-based reasoning can replace a human being.

#### CONTRACT THROUGH E-MAIL

Consumers can make a contract in web sites or in e-mails. In both cases, it is not easy to maintain the integrity of the contract. The core of the problem is the lack of trust between two relevant parties. Thus there is a need to establish an institution that can verify and validate the contract, and ensure the identity of buyers and sellers. The idea of a third-party registry has already been discussed (Zovickian and Brundage, 1998) and has been practised partially in Japan (Yasuda, 1997). In the Japanese e-commerce system, there is an institution called Certification Authority which issues a digital certificate that veri-

fies the identity of business parties in e-commerce. Digital certification fosters trust between buyers and sellers. Thus this proves that building a third party registry is necessary to solve the most serious problem that South Korean e-commerce faces which is lack of trust.

Who will be the third party registry, the government or private industry? The CA in Japan is established by the Japanese government. And even in US, EFT (Electronic Fund Transfer) which is a method for transferring money automatically by computer during e-commerce transactions is run by the Automated Clearing House which is closely associated with the Federal Reserve Bank of US (Lieberman, 1997). Thus we propose that the third party registry should be the government, especially for South Korea where a few conglomerates take up most of businesses. In South

Korea, people's trust in those big businesses is much lower than in the government particularly since the economic turmoil of 1997. When the most important thing while doing e-commerce is trust, the government of South Korea is more trustworthy than private industry. Thus in South Korea where the whole IT infrastructure building was a government project, it would be more beneficial to have a government agency that functions as the third party registry of all e-contracts in cyberspace in Korea.

#### CONCLUSION

Electronic negotiation through e-mail proves that e-mail can be an information rich medium through which people can negotiate not just price but other complex items such as subscription terms. Electronic negotiation can be automated by implementing the Intelligent NSS which

understands e-mail messages and negotiate with the customer using case-based reasoning.

Electronic contract through e-mail and web sites needs a third party registry which can verify and confirm the contract. But in a country such as South Korea where the national IT infrastructure is not as well developed as in developed countries such as the US, an organization like the electronic contract registry should be a non-profit agency of the government. As national IT infrastructure projects were government-driven, this project of nationwide e-contract registry business should be government-led; private businesses would not be trusted by the e-commerce participants which is due to the Confucian cultural aspect of respecting government than private businesses in Korea especially since the economic failure of 1997.

## ELECTRONIC CONTRACTING IN ONLINE STOCK TRADING

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### INTRODUCTION

The World Wide Web has grown at an amazing speed, and along with it has grown electronic commerce and transactions on the Internet. Approximately 2.7 billion dollars worth of transactions took place over the Internet in 1997, and the number is expected to climb to 5 billion dollars in 1998 (Guay, 1998). This phenomenal increase in electronic commerce has not been restricted to any particular industry. And this buying trend has affected both products and services. People are buying products from web shopping malls, travel services from Internet-based travel agencies, and financial services from banks and brokerage houses. One such service which has experienced unprecedented growth in the USA is online stock trading. In fact, more people trade securities than purchase books, CDs or any other product online.

The online brokerages are in the midst of expansion. The daily average of online trades in the last quarter of 1997 was 153,000. The majority of trades involved stocks not funds. In the first few months of 1998, 4.6 million individuals traded stocks online – an increase of over 150% in the last six months of 1997 alone. By the year 2002, more than 20% of American households are expected to invest electronically. Online trades accounted for 17% of total retail trades in 1997; this figure will approach 30% in 1998 (Dreyfuss 1998).

In this paper we evaluate the role of electronic contracting in US online brokerages. Electronic Contracting involves the exchange of messages between buyers and sellers, structured according to a prearranged format so that the contents are machine processible and automatically give rise to contractual obligations (Baum

1991). According to Runge (1998), electronic contracting comprises of two activities. The first, involves electronic agreement or contract negotiations. The second activity is the signing of contracts, which have been previously negotiated or exchanged electronically. In this paper we look at electronic contracting in the present model for online stock trading in the USA. We also investigate the various issues critical to the continued success of the industry.

### ELECTRONIC CONTRACTING IN ONLINE STOCK TRADING SYSTEMS

In the traditional method of stock trading, investors call broker for advice and placement of orders. The cost for a trade is generally a minimum amount plus a percentage of the total value of the transaction. One brokerage firm, Charles Schwab, introduced a business model that allowed investors (and brokers) to place their trades using a virtual private network for trading. Online trading systems allow investors to place their trades on the World Wide Web. Brokerage houses have set up web sites which handle all aspects of the transaction.