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ONLINE INTERMEDIARY BASED KNOWLEDGE SHARING IN ELECTRONIC NEGOTIATION: A THEORETICAL FRAMEWORK

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Abstract

Following the emergence of the Internet, electronic negotiation has become a new alternative for face-to-face business negotiations. This enhances the Negotiation Support Systems (NSS) capability. Nonetheless, the current form of NSS offers very little support for historical data that is the information or knowledge acquired from prior negotiations. In order to address this issue, the idea of a memory support in negotiations has been proposed in the recent years. The question is where the negotiation memory should be located. The growth of online intermediary and its importance in electronic negotiations suggest its potential as an effective alternative location for this memory support. This study explores the possibility of the implementation of the negotiation memory at the online intermediary. The comparison between the memory at the intermediary's location and that at the individual negotiator's own location is presented. The memory support located at the intermediary is hypothesized to increase the confidence in negotiation, reduce overall negotiation time and strengthen trust between negotiators.

Keywords: Intermediary, electronic negotiation, negotiation support systems, collective memory, knowledge sharing

Introduction

As evidenced by the rising trend of both the business-to-business (B2B) and business-to-customer (B2C) trade, electronic commerce has blossomed in the presence of a worldwide connection like the Internet. It has been predicted that one fourth of all of the B2B transactions will be conducted on the Internet by 2004 (Kuechler, et al. 2001). One of the emerging businesses that facilitate the transactions among parties is an online intermediary. A recent B2B report by eMarketer indicate that 15% of total consumer online sales revenues are generated through the hub sites, which are referred to as virtual malls, intermediaries, or digital middlemen. The transactions through these intermediaries are expected to soar from \$1.1 billion in 1998 to \$18.8 billion in 2002 (Business Wire 1999).

The growth of the Internet has largely affected the role of intermediaries in the market. While online connection may reduce or replace the role of traditional intermediaries enabling more direct interactions between buyers and sellers, it also gives rise to a new form of intermediary that is online intermediary. An online network increases free information flow and reduces transaction costs e.g. a cost of searching for suppliers (Grover and Ramanlal 1999). It is easier, faster, and less costly for a party such as a supplier to initiate a direct interaction with a customer or vice versa. Moreover, the worldwide network enables the consolidation of electronic markets (Grover and Ramanlal 1999). A virtual consolidated electronic market has more participants or competitors than the traditional markets. Interaction among this vast population of participants in the virtual market makes business transactions more complex. The presence of an electronic middleman can facilitate the transactions among parties. The online intermediaries thus have the potential to outperform the traditional intermediaries especially in the context of electronic markets. The need for an online intermediary is further enhanced in the B2B environment where the interaction among businesses involves several steps before a business activity is finalized in the form of a written agreement. An example is a contract for outsourcing, which is the final outcome of the detailed negotiation among business parties. A rising number of participants, such as application

service providers (ASPs) who offer a similar service in the electronic market, increases the customer's effort in searching for the provider who could offer the service that the customer is looking for.

Following the emergence of the Internet, electronic negotiation has emerged as a new alternative for face-to-face business negotiations. This alternative not only encompasses the functionalities of the traditional negotiation, but also reduces the inconvenience occurred from the face-to-face negotiation. For example, with an asynchronous medium such as e-mail, a negotiator does not have to respond to and propose a counteroffer immediately after receiving the proposal from the opponent (Maruca 2000). As a result, a company can negotiate with multiple partners simultaneously and may achieve a better outcome selection within a shorter period of time.

The emergence of electronic negotiation does not lessen the need for an intermediary in electronic commerce. Although businesses may search for a possible candidate and initiate the negotiation by themselves, the time and cost constraints may not allow the companies to find the best candidate or benefit mostly from the negotiation. Furthermore, once the negotiation is initiated, both parties have to overcome the conflicting interests of the opponent in order to complete the negotiation successfully. Support from the intermediary, in terms of the opponent's information, may accelerate the negotiation process.

In addition to the emergence of the online intermediation, the above situation also suggests the need for the negotiation support systems (NSS) that have been developed to facilitate the negotiation among parties to arrive at a preferable outcome. Recently, there are proposals to enhance this negotiation support and include negotiation memory in the NSS. This memory support is argued to provide more meaningful information or knowledge to the negotiators and increase the positive negotiation outcome, including the negotiators' satisfaction. However, there has been no attempt to explain where this memory should be located. The growth of online intermediary and its important role in electronic negotiation suggest its potential as an effective alternative location for this memory support. Thus, the purpose of this study is to explore the possibility of the implementation of the negotiation memory at the online intermediary. The comparison between the memory at the intermediary's location and that at the negotiator's own location is presented, followed by the propositions regarding the expected outcome of these alternatives.

Literature Review: Negotiation, Electronic Negotiation (E-Negotiation), and Negotiation Support Systems (NSS)

Negotiation – Major Dimensions and Processes

Negotiation is a process in which two or more parties (individuals, groups, or organizations) attempt to resolve incompatible goals and arrive at agreeable outcome(s) (McGrath 1984). Negotiation can occur in three primary levels, political, economic, and social (Lim and Benbasat 1993). Negotiations at the political level are those between representatives of the governmental agencies, such as negotiating treaties among countries. At the economic level, negotiations occur in the business settings. Finally, negotiations at the social level involve the human-related disputes ranging from individual to collective issues. Although a business negotiation may involve all three levels- *political, economic, and social*, a B2B transaction in this paper refers specifically to the negotiations at the economic level.

Zartman (1978) viewed negotiation as an ongoing process that can be distinguished in three major dimensions, a learning process (Cross 1977), a psychological process (Spector 1977b), and a joint decision-making process (Zartman 1977). Each dimension relies on the assumption of individual rationality of negotiator trying to maximize the individual payoff or utility (Bartos 1977). Thus, an agreement is an equilibrium point in which the opposing interests are balanced.

Kersten and Noronha (1997) described three phases of the negotiation, which are pre-negotiation analysis, conduct of negotiation, and post-settlement analysis as seen in Figure 1. The pre-negotiation phase involves activities necessary to initiate a negotiation such as the analysis of the situation, problem, opponent, and strategy. The conduct of negotiation phase primarily includes exchanges of messages and offers. The post-settlement analysis involves the evaluation of the negotiation outcomes, including the negotiators' satisfaction during and after the negotiation activity.

The time needed for each phase of negotiation may vary depending upon the type of contract, merchandise, and companies involved. The more time that is spent in negotiating, the higher the cost incurred from the negotiation. Contrary to the time constraint, the majority of buyers prefer to deal with a small number of distributors or suppliers for B2B transactions, according to Purchasing's (2001) survey. Some purchasing organizations attempted to reduce their purchasing cost by reducing the number of distributors and administrative responsibilities related to dealing with multiple suppliers (Purchasing 2001). This preference

may lead to a more careful approach in searching for a prospective partner. As a result, the time spent for a negotiation, especially the first phase, which is pre-negotiation, may take longer than expected. A third party, with a specialty in the area of negotiation, may be able to find candidates who are most qualified for the customer's requirements. In addition, during the course of negotiation, the parties may run into deadlock with conflicting expectations regarding the outcome and the involvement of a third party mediator may become necessary to resolve this conflict. The role of the third party mediator is discussed in details in the following section.

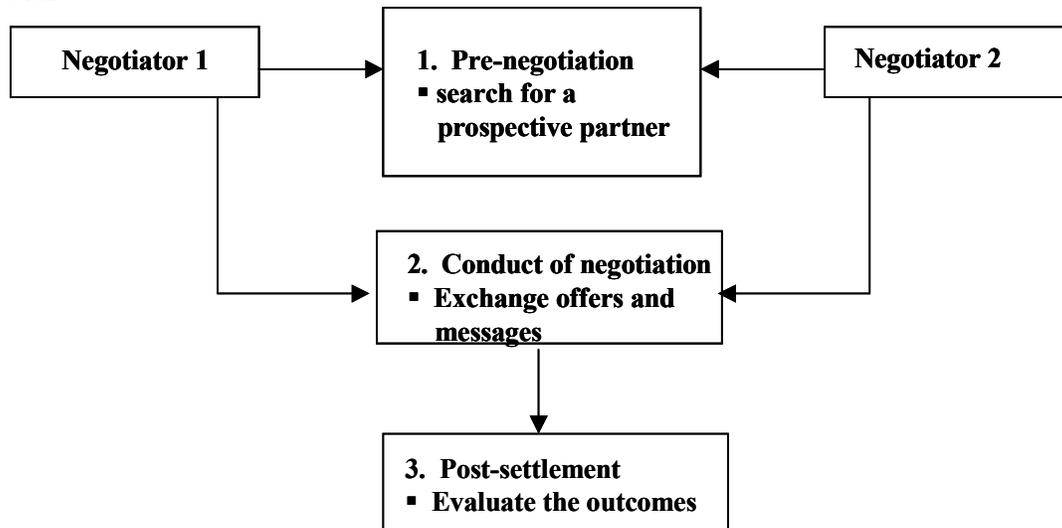


Figure 1. Three Phases of Negotiation Process (Kersten and Noronha, 1997)

The Role of Third-Party in Negotiation

Bret and Goldberg (1983) identified three types of third party roles, which are facilitator, adjudicator, and mediator-advisor. The facilitator or counselor tries to stimulate the parties to resolve their own dispute. The adjudicator involves more with the negotiation by deciding the dispute after listening to both sides. A new type of third-party role is mediator-advisor that is the combination of both the facilitator and adjudicator. This new role has all the tasks and skills of a facilitator and sufficient expertise of an adjudicator to predict the outcome of the dispute. The facilitator role of the third party is viewed as quicker, less expensive, and more procedural because the parties turn over control of the process, not the outcome of the negotiation to the third party. On the other hand, the adjudication is slow, expensive, and less procedural because the control of both the negotiation process and the outcome are turned over to the third party. The mediator-advisor model is in between the facilitator and adjudicator. It combines the dominant characteristics of the two roles by facilitating the resolution of the problem underlying a particular dispute. This includes giving examples of previous cases and preserving the final decision for the parties because no outcome control is given to the third party. Thus, the mediator-advisor type of third party may result in a better negotiation outcome than the facilitator type and the solution may be reached faster than the adjudicator type of third party.

Intermediary in Electronic Commerce

The role of third party in a negotiation is similar to that of intermediary discussed in the literature on electronic transactions. Lang and Whinston (1999) defined an intermediary as a middleman who facilitates transactions between potential traders. They further identified four ways that an intermediary can facilitate transactions (shown in Table 1).

An intermediary creates a transaction value through the reduction of searching cost. If the buyers attempt to search for the sellers directly, the search time and hence the cost may increase. Furthermore, the buyers may not discover the sellers who provide the most satisfactory products or services according to the offered prices simply because the buyers' search space is limited. Unlike a traditional physical exchange through intermediaries, a transaction through an online intermediary involves the exchange of information goods. While the need for traditional intermediaries is reduced because of the direct link between a buyer and a seller through a worldwide network, the need for online intermediaries is created to handle online transactions more effectively. An online intermediary can connect suppliers to untapped online buyers who are beyond the commercial reach of the supplier. It also

strengthens the marketing capability of the suppliers (Berghel 2000). For example, Amazon.com provides a useful service (i.e. the online book shopping) that was previously unavailable. The transaction cost between the online intermediary and the customers may be lower than that between the traditional intermediary and the customers as seen in the form of reduced service charge. As a result, the sellers or suppliers could find the prospective buyers through the facilitation of an online intermediary that they would never meet otherwise.

Table 1. Functions and Examples of Intermediaries (Lang and Whinston, 1999)

Intermediary function	Example
1. Match buyers and sellers	<ul style="list-style-type: none"> • Stock exchange • Commodity trading market
2. Buy goods from sellers and sell them to buyers	<ul style="list-style-type: none"> • Retail stores
3. Buy goods and sell them after modification	<ul style="list-style-type: none"> • Retailer who offers a packaged good combining products from different producers
4. Sell transaction-related information only	<ul style="list-style-type: none"> • Online business information services • Financial cable networks

Electronic Negotiation (E-Negotiation) and Negotiation Support Systems (NSS)

While electronic negotiation is similar to traditional negotiation in terms of negotiation process, it is different from traditional negotiation in terms of technological support. In both electronic and traditional negotiation settings, the negotiation process always start from the search for a prospective candidate to accomplish a certain business purpose, the communication between both parties during negotiating session and the ending of the negotiation regardless of the outcome. In traditional negotiation, both parties are required to meet face-to-face in order to exchange the offers whereas in electronic negotiations the exchange of offer can be made through the Internet in an asynchronous mode.

Electronic negotiation may be classified into two categories in terms of the complexity of supporting technology. The first category is an electronic negotiation via e-mail. The second one is an electronic negotiation through the negotiation support systems or the web-based negotiation support systems. Currently, electronic negotiations may be most widely conducted through e-mail. The network or the Internet has enabled external communication among companies. A company can negotiate with other companies through the network by sending e-mails documents or messages. In addition to an electronic negotiation via e-mail, negotiators may receive additional support for negotiation by using the negotiation support systems.

Negotiation support systems (NSSs) are a special category of group support systems (GSSs). They are designed to support the activities of two or more parties in a negotiation to reach an agreement (Perkins et al. 1996). The core components of an NSS are an individual decision support system (DSS) for each party in the negotiation and an electronic communication channel between the parties (Perkins et al. 1996). The systems are primarily developed to help negotiators prepare for negotiations, suggesting strategies and tactics to use during a negotiation, and occasionally proposing jointly beneficial solutions (Croson 1999). The latest development in negotiation support systems is the web-based systems that enables communication between people from different locations and time zones. Web based NSS can support negotiation in the asynchronous mode and can be used by large group of negotiators who are geographically dispersed across the globe.

Performance and Limitations of Negotiation Support Systems and E-Negotiation

The NSS supported negotiations provide a satisfactory result in terms of increasing the preferred negotiation outcomes such as higher joint gains, more balanced contracts, reduced negotiation time (Perkins et al 1996). Croson (1999) conducted an experiment to study the face-to-face and electronic negotiations by using e-mails as the medium between the negotiators. The electronic negotiations are somewhat more likely to arrive at integrative or joint agreements than the face-to-face negotiations (Croson 1999). They also help to reach the final agreement with more equal divisions of the surplus than the face-to-face negotiations. Kersten and Noronha (1997) conducted another exploratory study using the web-based systems called INSPIRE and explored the effect of computer support in negotiation and the difference in decision-making among various cultures on the negotiation outcome. The result is also consistent with the previous studies in which the negotiator's satisfaction with the system differs among users from various countries, but the overall satisfaction with the agreement is high or very high.

Although electronic negotiations have the potential to increase the positive negotiation outcomes in most cases, there are some limitations associated with an electronic negotiation. The primary limitation is the lack of information or knowledge sharing among negotiators. Currently, the computer-mediated support is restricted only to each negotiation session. The current form of NSS offers very little support for historical data that is the information or knowledge acquired from each negotiation is not shared or applied to benefit the other negotiations. In the case of data transferring through emails, the messages transferred may be kept for the record and then become the references for the next negotiation. However, the e-mail record may not be properly organized to support subsequent negotiations.

Knowledge Sharing and Negotiation

The lack of information or knowledge sharing helped establish the idea of a memory support in negotiations. The memory support can be provided in the form of collective memory or organizational memory, which is defined as “the means by which knowledge from the past, experience, and events influence present organizational activities” (Stein and Zwass 1995). The collective memory for negotiation is a repository of tacit and explicit knowledge created from prior negotiation sessions. It enables knowledge sharing which is the transfer and integration of prior knowledge with the current negotiation situation.

As presented by Paul (2001), the collective memory support can eliminate the limitation of the lack of knowledge sharing by maintaining the information regarding the prior negotiations. The information is stored in the negotiation memory support system (NMSS). Once the stored information is accumulated in a meaningfully organized manner (Zack 1999), it then becomes the knowledge, which can be used for other negotiations. This means the knowledge acquired from the previous negotiations can benefit the subsequent negotiations if it is properly shared.

Although knowledge is often thought to be the property of individuals, a great deal of knowledge is both produced and held collectively (Brown and Duguid 1998). This can be applied in the negotiation context. While the negotiators are bargaining to arrive at the most satisfactory outcomes during the negotiation process, they need to learn to adapt themselves or their offers to fit properly with the situation as a response to the other party’s reaction. This is the learning process (Cross 1977).

Furthermore, the negotiators are different in terms of their behavioral styles (Spector 1977b). Thus, one negotiation strategy that is successfully used with one opponent may not be applicable with the others. If all of these actions are stored, the knowledge created from one negotiation is kept not only in the negotiator’s individual memory, but also within the system and can be learned by other negotiators. In addition, the memory support can also extend the negotiators’ capabilities beyond their cognitive limits. This memory concept for the negotiation fits well with the dynamic business environment where there is a high employee turnover among companies (Alavi and Leidner 2001). The knowledge from the negotiations that is shared within a company will maintain the company’s capability to continue the negotiation even if the particular negotiator leaves the company. Furthermore, the specific feature of each negotiation contract also supports the company to gain knowledge about each negotiator (e.g. information about a supplier’s dominant product or performance for a customer or information about a customer’s preference for a supplier). The knowledge from the negotiations that is shared between companies will also facilitate other companies to learn more about each company’s preference and to develop a more agreeable offer for both companies if the negotiation is expected to be successful.

Although the knowledge can be created and shared, the issue that needs to be resolved is the location of the memory support systems. If a company does not have to negotiate with other companies, (e.g. a supplier), on a regular basis, it may not be as efficient as it should be to maintain a separate facility and technical personnel only for this particular purpose. A support from the third party’s location is a proposed alternative in this paper, in addition to the memory implementation at the company’s location. In the next section we discuss the architecture of both alternatives.

Architecture of Knowledge Shared E-Negotiation

The knowledge sharing capability can be achieved through the installation of a memory support system that can be external to a NSS (Paul 2001). Two potential architectures of the knowledge-shared e-negotiation are discussed in this section. These are: i). The memory support installed at the third-party’s or the intermediary’s location (Figure 2), ii). The installation of the memory support at each negotiating party’s i.e. at each company’s location (Figure 3).

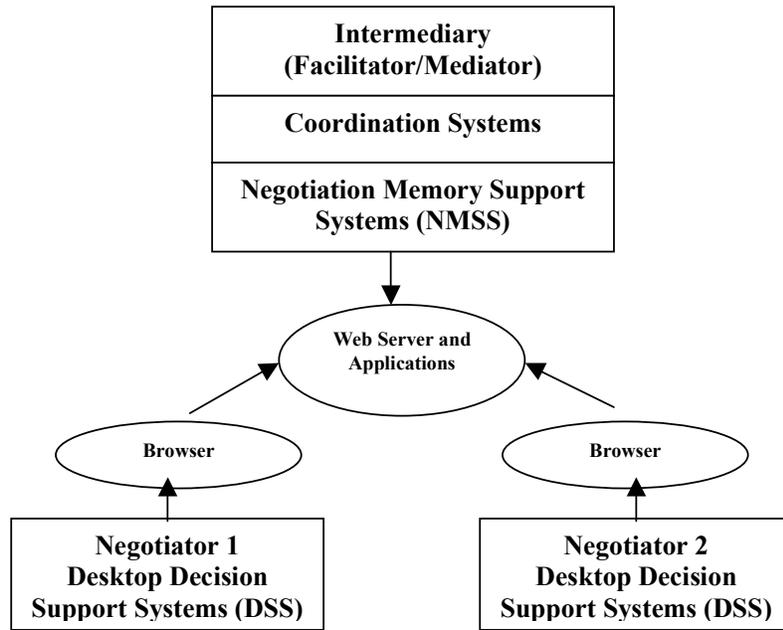


Figure 2. Knowledge Shared E-Negotiation Architecture with NMSS at An Intermediary's Location

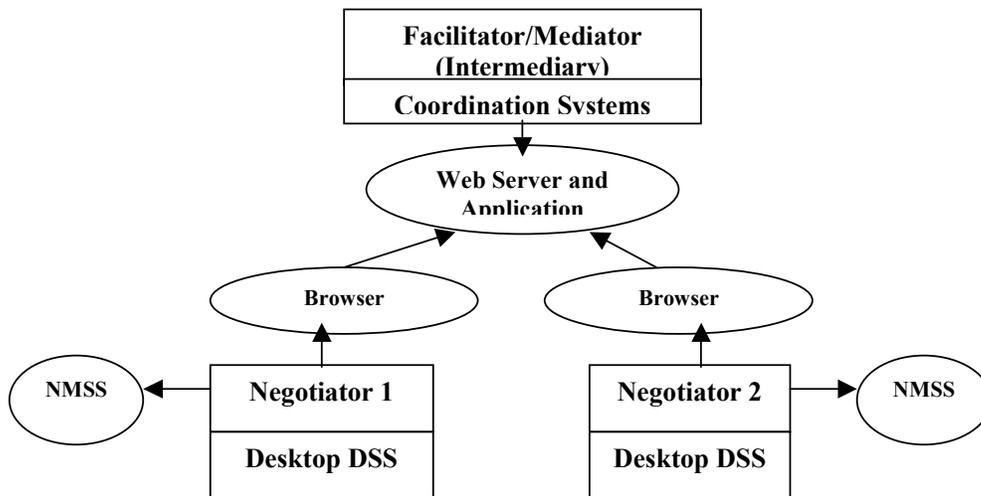


Figure 3. Knowledge Shared E-Negotiation Architecture with NMSS at The User's Location

As seen from Figure 2, the communication between the two parties is accomplished through the client-server model with the coordination system at an intermediary's website. All companies using the intermediary will have to set up an account and provide some basic information (such as, the company's address, type of business etc.) to the intermediary. Furthermore, the intermediary should be able to monitor and facilitate all activities of the negotiation; collect information from the negotiation process with the permission from the negotiators; and hence build up a new instance or extend an existing instance of the negotiation in the collective memory.

Another possible architecture is the implementation of the NMSS at each negotiating party’s location. In this set up, the intermediary will incorporate only the coordination role to both parties. The coordination system serves as a medium for both parties to communicate. Since the NMSS is implemented at the user’s location, the information to support a negotiation is provided internally by each party’s system. This information can be collected during the negotiation session. Once the negotiation is initiated, the negotiator can use the information provided by the negotiation memory to analyze and respond to the participating party during the negotiation process.

Although both architectures are able to support electronic negotiations, each architecture has its advantages and disadvantages, which are listed in Table 2.

Table 2. Advantages and Disadvantages of Intermediary Based Collective Memory vs. Local Collective Memory

Intermediary Based Collective Memory Support	Local Collective Memory Support
<p>Advantages:</p> <ul style="list-style-type: none"> • More efficiently organized memory system that can provide better and more useful knowledge for negotiation; • Large volume of negotiation information can be collected from multiple parties; • Memory development cost can be stretched out to a larger group of negotiators. 	<p>Advantages:</p> <ul style="list-style-type: none"> • Each negotiating party has control over information collection; • Faster storage and retrieval of memory information;
<p>Disadvantages:</p> <ul style="list-style-type: none"> • Concern for security and privacy issues; • Increased time to store and retrieve memory information because the negotiator is in a remote location; • May not be an efficient alternative when interaction with the memory is frequent. 	<p>Disadvantages:</p> <ul style="list-style-type: none"> • Development of a collective memory with all functionalities will be costly and may not be justifiable; • Limited set of memory information.

Research Questions and Hypotheses

The knowledge shared e-negotiation can, therefore, be implemented in two different architectures- one with the memory support installed at the company’s location and the other with memory support at the intermediary’s location. The question is which architecture is more desirable in terms of satisfactory negotiation outcomes. One of the concerns associated with storing information at the intermediary’s location is the security or privacy issue. While many negotiators may have reservations regarding the collection of individual preference pattern and other relevant information by the intermediary web site, almost all of them will perhaps prefer to retrieve this information (especially about other negotiators) from the same web site. This contradictory nature of negotiator behavior may make the intermediary based memory support system dysfunctional.

Nonetheless, Culnan and Armstrong (1999) indicated that in general, individuals are less likely to perceive information collection procedures as privacy-invasive when (a) information is collected in the context of an existing relationship, (b) they perceive that they have the ability to control future use of the information, (c) the information collected or used is relevant to the transaction, and (d) they believe the information will be used to draw reliable and valid inferences about them. Their empirical evidence also confirmed their hypothesis that when customers are explicitly told that their information is treated fairly, there is no difference in terms of privacy concern between customers who allow access to their personal information and those who do not. We, therefore, argue that there may be no difference between storing information either at the intermediary’s or the user’s location in terms of individual negotiator’s privacy concern provided that each negotiator becomes aware of the advantages of using this memory information and perceives that the information collection can be controlled, and the information will be used to draw reliable and valid inferences.

The literature highlights that the use of electronic support for negotiation process improves the negotiation outcome. Lim and Benbasat (1993) proposed that the computer support would improve the negotiation outcome such as the distance from the efficient frontier, the confidence with the solution, the settlement time, and the satisfaction. Delaney et al. (1997) found that the use of NSS does not improve negotiation time but improves the satisfaction of the negotiators. Later, Paul (2001) brought in the concept of having negotiation memory support for repetitive negotiations with multiple issues. Paul (2001) proposed that the use

of negotiation memory support would provide higher joint gain, less exploitation, shorter negotiation time, higher negotiator's confidence, and higher satisfaction.

Confidence in Negotiation Outcome

Another advantage of having intermediary based memory support is that the information is collected from each participant in a uniform structure. The negotiators can be assured that the same type of information is collected from all parties who have equal privilege to access the memory information. This is different from the situation where each party maintains its own memory and the possibility of having memory information asymmetry cannot be ruled out. Furthermore, if the negotiating parties are introduced by the intermediary, the negotiators may be confident that the other party has met certain requirements or preferences of the company that were specified to the intermediary by each individual negotiator during the pre-negotiation stage. Therefore, they may exchange documents or information without much reservation, communicate with the expectation that the final agreement will be integrative (i.e. *win-win* outcome), and have higher level of confidence on the negotiation outcome. Hence:

Proposition 1: The confidence in negotiation outcome will be higher with the support of negotiation memory from an intermediary than that from an individual negotiator.

Negotiation Time

While searching for partners, the negotiators can access the vast repository of information stored in the intermediary web site on all negotiating parties and by using appropriate queries they can identify the parties who were engaged in similar negotiations in the past and also examine the outcome of those prior negotiations. This is expected to speed up their partner selection process.

Maglio and Barrett (2000) identified five basic functions of intermediary, which are customizing (customized information for a particular user), filtering (remove information), annotating (add information), transcoding (change information to different form), aggregating (combine information from multiple sources), and caching (store information for later use). These functions facilitate the data transformation between client and server for faster delivery and discovery. The functions are implemented through three types of operations, namely data generation, data editing, and data monitoring. Once the source form of data is generated, the raw data can be edited and transcoded to personalize the information for a particular user. Moreover, the intermediary can track information as it passes through. Monitoring is used for caching web resources for faster delivery, logging usage patterns, and building user models for web browsing activities (Maglio and Barrett 2000). Data is updated periodically by the intermediary. Thus, a user can focus primarily on the content and issues of a negotiation.

The pre-negotiation, which includes the searching for partners, is not the only step that is accelerated, the negotiation and the post settlement stages can be faster as well. The useful knowledge provided by the intermediary can help the negotiators to have a better understanding of the opponent's negotiation style (e.g. the preference, the general acceptance region etc.) and apply it to the current negotiation. Once the negotiation is completed, the information transferred is already tracked by the intermediary and is ready for the post-settlement viewing. Thus, it is expected that negotiators using intermediary based negotiation memory support will be knowledgeable and will spend less overall time in different phases of negotiation, thereby lowering the negotiation time. Hence:

Proposition 2: The negotiation time will be shorter with the support of the negotiation memory from an intermediary than that from an individual negotiator.

Trust

A negotiation involves an expectation regarding the future cooperation between the negotiating parties as a result of the successful negotiation. The trust between the parties is another important determinant of the potential cooperation. If the customer does not trust the supplier to be able to deliver products or services as promised, the successful negotiation is not likely to take place. In the physical world, customer trust is created through the physical presence, reputation, and accountability of a business (Barlow et al. 2001). However, these attributes cannot be observed easily in a virtual world i.e. in electronic negotiations. Barlow et al. (2001) suggested that when a business is completely unfamiliar to a customer, trusted third parties could play a key role in engendering consumer trust, for example, in the form of membership certificate. Besides the trust in the third party to suggest

a prospective candidate for consideration, a negotiator can also be ensured that their information collected during the negotiation is properly gathered and is secured according to the agreement between the negotiator and the intermediary. Hence:

Proposition 3: The trust between negotiators will be strengthened with the support of the negotiation memory from an intermediary than that from an individual negotiator.

Conclusion

The collective negotiation memory and the knowledge sharing in electronic negotiation have been discussed. In this paper, we discuss two possible architecture of implementing the negotiation memory support. These are intermediary based memory support and local memory support (at individual negotiator level). We also propose that the use of intermediary based memory support can result in better negotiation outcomes.

The proposed model may be attractive and beneficial to most of the small to medium sized companies who may not be negotiating too frequently. These companies may not be able to maintain the negotiation memory internally due to the lack of proper technical and/or financial support. The negotiation such as the outsourcing contract, e.g. the negotiation with an application service provider (ASP), may not take place as often as the purchasing contract between a customer and a supplier. The memory may not need to be updated constantly. Therefore, the transferred responsibility of negotiation memory maintenance from a user to an intermediary may create a more effective data management, support negotiations more efficiently, and thus produce a better negotiation outcome.

An experimental study is planned for testing the hypotheses. The comparison between implementing the memory at the user's and at the intermediary's locations will be conducted having managers from local businesses as subjects in the study. Negotiation time will be measured by the systems log file, while data regarding confidence in negotiation outcome and trust will be collected through the self-report instrument. Analysis of covariance will be used for the study's statistical analysis since previous experience of online negotiation is expected to have a significant effect on all three dependent variables.

In addition, the proposed form of negotiation memory presented in this paper can be extended to other research studies. Since knowledge is derived from human brain, there may be a difference among users from different cultures about the willingness to share the information and knowledge (Chow et al. 2000), the similar issue that happens even in the same organization setting. The effect of cultural difference on the negotiation has been extensively described (Avruch et al. 1998). It may become more complicated and even more challenging to include this construct in the model and investigate the relationship between cultural differences on the knowledge sharing issue of electronic negotiation.

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