11 LEARNING NEGOTIATIONS WITH WEB-BASED SYSTEMS
The Case of IIMB

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1. Introduction

Sustainable development requires a number of skills, some technical, some interpersonal and some managerial. One skill that cuts across all three of these categories is negotiations. At virtually every step in the development process separate groups and interests must be accommodated. From arranging assistance agreements between governments to persuading local groups to co-operate on specific projects, communication and negotiation are a key part of the development process. Governments, courts, businesses and labor unions, as well as individual decision makers, are all involved in these negotiations (Zartman, 1994). These issues, however, are becoming increasingly more complex and require different forms of support to help weigh decision objectives and alternatives and analyze different scenarios and offers. Teaching negotiation skills and integrating these with the ability to utilize them in the context of advanced negotiation support systems has become an important task in making development sustainable.

Policy makers and managers in developing countries face numerous challenges in such diverse fields as labor-management relations, international affairs, business partnerships, and environmental regulations. Governments, courts, businesses and labor unions, as well as individual actors are breaking new ground in decision making (Zartman, 1994). In most cases these decisions are made through negotiations, one of the most common processes for making decisions and resolving conflicts at all levels of society.

With the globalization of markets, the consequences of cross-cultural interactions have received considerable attention (Hofstede 1989; Adler 1993; Faure and Rubin

1993). Prompted by the growing economic and political roles of developing countries studies have been undertaken contrasting developing and developed countries on the process, context and form of negotiations (Graham 1993; Druckman et al., 1976; Stone, 1989; Pechter, 1992). Cultural implications impact on attitudes towards contracts, value for formality, and status in human relations in both developing and developed countries (Swierczek, 1990).

Pechter (1992), having analyzed more than fifty real-life negotiations between Western and developing countries, concluded that the ethic of trust in most Asian countries is alloyed with an appreciation of shrewdness. While compromise is considered an appropriate outcome of negotiation in the Western world, it may often be considered an indicator of failure in Asian countries. Graham (1985, 1993), in his studies of negotiation styles in various countries, observed that the Japanese offered more extreme initial offers, used the word "no" less frequently, were silent longer and used aggressive tactics only in later stages of negotiation. Brazilians' negotiation behavior was characterized by more extreme first offers (even more extreme than those made by the Japanese), fewer promises and commitments, more commands, and longer interactions than exhibited by Americans in their negotiations.

These culturally-based differences in the understanding of the negotiation process have significant implications for designing training programs for negotiators. They also have to be considered in the design of software tools which seek to promote an accurate understanding of the valuation of decision alternatives, the assessment of concessions made by both sides, and the utility of a compromise in some situations. Without an understanding of the cultural framework which interfaces with the support system, decision and negotiation aids risk making the situation worse instead of helping the parties to a fair settlement.

The existing organizational and institutional structures in a developing country often do not provide adequate support for negotiation efforts. In a developing country, negotiators may not have a past bargaining relationship with their counterparts nor a history that establishes channels of communication. This may be one factor which emphasizes less structured settings for resolving disputes in industrializing societies (Ghauri 1988).

With increases in international trade and an accelerating shift of manufacturing from developed to developing countries, there is increased pressure on managers to engage in cross-cultural negotiations. This leads to growing interest in studying the way that culture affects negotiation theory and practice. Studies have revealed that most developing countries have few negotiators capable of translating their own and their organizations' principles and general goals into concrete bargaining proposals. They also lack systems for widespread and efficient training of decision makers (Stubbs, 1984; Schermerhorn et. al, 1985; Ghauri, 1988). To bargain effectively, one must not only have the ability to articulate interests and bargaining positions, but also the skill to communicate with one's opponents and to interpret accurately their responses. This requires an appreciation of the opponents' mindset and understanding of how their actions and positions are situated in their own national and organizational cultures.

Since the ability to understand and effectively communicate with counterparts from different cultures is critical to international negotiations, its absence may be the

source of a serious weakness. Feliciano (1990) argues that since developing countries do not have a long history of negotiations with foreign countries or corporations,

> "They generally lack cadres of experienced negotiators in their foreign offices, in their ministries of finance and of trade and industry, in their boards of investment, in their agencies charged with coordination and implementation of development work, and in their private sector." (Feliciano 1990, p. xxi).

Language, customs and time zones also act as barriers to effective communication between the developing and developed worlds (Xing 1995; Grindsted 1994).

Negotiators from developing countries often rely, "more or less consciously, on confused, romantic notions of 'special' or 'historic relations' or shared 'fundamental interests', and feel grievously disappointed when such counterparts refuse to sacrifice their own interests and defer to the former's claims." (Feliciano 1990, p. xxii).

Negotiators with little cross-cultural experience may focus on cultural differences while ignoring the processual and analytical aspects that are similar in any type of negotiation. These underlying concepts of negotiation technique and negotiation analysis are complex issues that are now regularly taught in universities and in executive development courses although they are not yet widely available in developing countries.

Training in negotiations at the university level was first introduced in the United States and later spread to other parts of the world. In developing countries there are a few educational organizations with highly developed infrastructures which allow this type of training. In most, however, the pedagogical infrastructure is lacking or poorly utilized due to a lack of skilled instructors and current teaching materials. Under these conditions teaching negotiations to students or managers is fraught with many problems.

The traditional tools for teaching negotiations are cases, experiments and simulations. These tools are often culture-specific, require trained instructors, and organizational support. They normally focus on the development of communication skills, situation assessment and offer evaluation. Where they are used in conjunction with formal problem solving techniques and information and decision support tools, their effectiveness is greatly enhanced. In order to emphasize these tools many negotiation courses in undergraduate and graduate management programs include the use of negotiation support systems (NSS) as part of the bargaining process.

The inclusion of NSS in training programs helps introduce students to the implications of rapid changes in communication patterns and the increasing number of organizations engaged in electronic commerce. The increasing importance of electronic forms of business transactions and the ease with which they can be accessed from anywhere in the world has led to modifications of negotiation training. One trend has been to incorporate more cultural content into training sessions. The other has resulted in expanding the analytical and technological components of such courses.

The InterNeg project, with its Web site and Web-based support systems, attempts to integrate both technically sophisticated support and culturally diverse interactions. In this paper we will discuss our experience in developing the InterNeg Support Program for International Research Experiments (INSPIRE) and using it in managerial training in India. Section 2 contrasts the different approaches to teaching negotiations in developed and developing countries. Section 3 discusses the potential of Web-

based systems for expanding and enriching management education. It also outlines INSPIRE, a Web-based system designed to support international negotiation training. The system and its use in bilateral negotiations are discussed in Section 4. Section 5 describes the use of INSPIRE in post-graduate and executive training at the Indian Institute of Management Bangalore, India. A discussion of possible extensions for INSPIRE and its utilization in higher education in developing countries concludes the paper.

2. Negotiation Teaching

2.1 Traditional approaches to negotiation teaching

The first course entirely devoted to managerial negotiation was offered at Dartmouth College in 1973 (Lewicki, 1986). By the early 1980s, many business schools were offering courses in negotiation. Most of these employed an experiential learning methodology which presented students with a negotiation exercise or simulation and then encouraged them to analyze and generalize from the experience. Negotiation teaching generally includes lectures about theories, discussions of case studies, and the conduct and analysis of simple experiments. Case studies describe some elements of negotiations, for example, framing, power strategies, and negotiators' personalities (Shubik, 1971).

The study of these basic elements allows students to evaluate factors that influence the chances that a dispute may be resolved through negotiation. The analysis of events that occurred in specific instances of a negotiation provides a factual grounding for discussion. This focuses the discourse on gaining insights into negotiators' strategy and behavior. Furthermore, detailed case studies enable students to see the importance of individuals and organizations involved in the negotiations and also the effect of the broader context in which they operate (Weiss-Wik, 1983).

Negotiation experiments are also used in courses as a learning tool (Winham and Bovis 1979; Carnevale 1995). They offer an opportunity for students to participate directly. Subsequent analysis reveals the dynamic aspects of negotiation and the interplay of human biases. Some experiments are conducted in the form of pen-and-paper tests involving brief, circumscribed tasks (Francis, 1991). For practical reasons, these experiments do not normally extend beyond one or two hours; they are, therefore, typically narrowly focussed. The classroom setting, face-to-face interaction and the fact that the participants know each other, all set limits on the realism of the simulation.

Discussion of cases and experiments conducted in a classroom are useful in illustrating the principles of negotiation. They may also help demonstrate formal techniques of decision and negotiation analysis. However, it is difficult for the students to apply the principles and formal techniques they learn to negotiations that resemble real-life situations. Several limitations of these methods have been identified in the negotiation and training literatures.

Low control and arbitrary focus: students and trainees often find that they have little control over the negotiation process; the focus of the negotiation is mainly determined by instructors and trainers. Pruitt (1986), (based on his analysis of six negotia-

tion courses in U.S. universities) observed that most cases fail to anchor the actors, as control rests with the instructor. Instructors often intervene to complete the game in time, retain students' interest, or cover specific aspects of the negotiation process.

Limited flexibility in scheduling training sessions: given that negotiation experiments are conducted in a classroom and given the restrictions of semesters, instructors find that the lack of flexibility in conducting these simulations affects the learning process. This problem is often acute in International Business courses, where the instructors would prefer to arrange groups of participants from different countries. The problem is not simply the disjuncture of time zones. The substantial organizational efforts required for such negotiations typically makes them impossible.

Low level of involvement: limited time and the restricted focus of negotiation experiments, high levels of control, and the usual lack of real-life complexity in the simulations, contributes to low involvement by the participants (Thompson 1991).

Narrow domain of simulation: since simulations allow one to analyze students' behaviors and interactions and analyze these in a classroom, it is an important vehicle for teaching (and studying) negotiations (Adler and Graham 1989; Neale and Bazerman 1992). However, the lack of realism and the restrictions imposed by the classroom limit the insights that may be generated for students or researchers.

2.2 New demands and challenges

Negotiation courses are typically designed for business students and taught by instructors with a strong behavioral background. Our review of curricula for conflict resolution and negotiation courses offered at several major American universities and a few of the consulting companies offering negotiation courses (e.g., The Management Concepts, Inc. at: http://www.mgmtconcepts.com/ and The Negotiation Skills Company at: http://negotiationskills.com/) show that the organizational behavior approach to negotiation is predominant.

The focus is on types of negotiations and conflicts, the behavior of the parties involved, planning and communication, mediation and third party intervention, and the social and organizational context of negotiations. It is obvious that these are the key issues to negotiations. There are, however, other issues that are becoming increasingly important. These result from the implementation and use of new communication and computer technologies on the one hand, and a change in roles that small and medium size organizations and countries play in the world on the other.

Electronic commerce, electronic markets and intelligent systems introduce new challenges to negotiation teaching. Negotiations are already being conducted via electronic means (e.g., email) and this may require a somewhat different approach to effective communication than in face-to-face negotiations.

Data mining and knowledge discovery tools are increasingly being used in situation assessment and process analysis and they may have an important role to play in the preparation for, and conduct of, negotiations. Decision and negotiation support systems are becoming increasingly popular. They are often used in the formulation and evaluation of alternatives, assessment of offers and counter-offers, and the organization and visualization of the negotiation process. Expert systems have been developed to support teaching cross-cultural communication and negotiation (Ran-

gaswamy, Eliasberg et al. 1989). The impact of these developments on the negotiation process is rarely considered in negotiation courses.

Another potential application of negotiation teaching and training lies in the use of computer-based simulation models. Negotiators dealing with engineering, financial or environmental issues need to be able to construct and assess scenarios to formulate offers and evaluate the opponents' offers. The more complex these issues and the longer their implications, the more likely computer-based systems will be used to assess alternatives. The use of advanced NSS allows the assessment to be linked directly to the negotiation process.

2.3 Negotiation teaching in developing countries

In developing counties negotiation training generally follows curricula prepared in developed countries with the main difference being the emphasis on cultural factors. The focus is on the negotiation process using concepts defined by particular economic, political, and cultural environments which may not apply to the current situation (Sunshine, 1990). Cultural differences are examined through the developed country framework rather than being considered as an integral part of the process itself.

In addition to the problems caused by inappropriate models, educational institutions in developing countries are often beset with other problems. Most business schools offer their courses in the local language and may suffer from a lack of training materials. While obtaining teaching materials from outside sources is not difficult, often the material will not reflect the dominant practices or culture of the country. This not only affects the quality of course delivery, but also students' involvement.

There may also be a shortage of qualified instructors in these countries and the number and variety of available cases which are relevant to local conditions. The result is a demand for educational programs and systems that will allow for the easy development, storage and retrieval of cases and simulation models. It is expected that such systems would also facilitate access to and use of decision and negotiation techniques. Links which ease communication between instructors and students as well as links to participants in a variety of cultures are also desirable.

New technologies such as the World Wide Web offer exciting avenues for teaching and training international negotiation. Net-based systems have the capacity to respond to a variety of negotiation training needs and address many of the educational problems that developing countries face. By offering easy access to materials and computer-based support, these systems can assist in upgrading instructors' qualifications. Web-based negotiation systems can accommodate any number of users, thus many participants, be they instructors or students, can benefit from using them at any given time.

Systems such as INSPIRE offer an opportunity for direct participation in a negotiation and thus experiential learning which is deeply rooted in the theory and practice of negotiation training. The level of participants' involvement is considerably higher (comparable to that in real life negotiations) than in the traditional training sessions. This is largely due to the fact that each participant is fully responsible for making all

decisions and for communicating them to their counterparts. Hence, the locus of control lies with the participants.

One of the features of the INSPIRE system that shows potential, is the possibility for users to develop their own materials (i.e. case studies) that are relevant to their particular situation and interests. This allows for the development of "custom made" materials. A pool of such materials will grow fast, providing a group of enthusiastic users from developing countries becomes involved.

What the system does not do however, is highlight cultural divisions. The system is designed to focus attention on the process and analysis of the negotiation. Since the negotiations are anonymous, any information about an opponent's cultural traits will be revealed in the course of the negotiation or inferred by the negotiator. In this way the practice of negotiation is paramount for the student and cultural considerations only surface as part of an ongoing process.

The following section describes the technological advantages offered by Web based systems such as INSPIRE, a negotiation support system that enables unconstrained inter-cultural negotiations.

3. The Web and Negotiation Teaching and Training

Technology is a critical resource that can eliminate some of the problems related to teaching of communication and negotiation in developing countries. Some of these technologies, being system independent (in terms of operation and maintenance), allow users from remote parts of the world to communicate with others and to utilize previously inaccessible resources. Widespread use of computer networks, especially Web-based systems, indicate that the information access barrier between the developing and developed worlds could be overcome.

World Wide Web provides people in different locations and time zones a communication medium that is rich in functionality and content and which offers them the ability to use previously inaccessible computational resources (for example, decision and negotiation support systems). While the Web is currently used as a powerful source for the dissemination of information, it is increasingly being used as a means for remote execution and control of complete software systems, thus adding another dimension to the value it delivers. In education, its ability to access and run remote programs and databases allows users to extend classroom and laboratory boundaries across time zones as well as geographical boundaries. This flexibility can reduce the sense of inequality between managers, policy makers and citizens in developing and developed countries by enhancing their ability to communicate, negotiate and participate in commercial, educational and cultural activities.

Computer technologies allow rich communication amongst the actors in a negotiation by virtue of computation-intensive techniques and data visualization. The users can review the negotiation and its dynamics as the process unfolds. Language and other barriers shrink or disappear since these technologies allow extreme customization. User-specific front ends can be built which are then linked to the common core of the system, thus increasing participation while retaining functionality. The cost of duplicating a technological solution is another major factor that determines whether a particular solution can reach a larger population. Web browsers allow for portability

and thus increase access for users in remote countries to training and real-life negotiations with minimal computing resources. These tools and systems are accessible to everyone, lay people and experts alike, and enable them to interact more directly with persons from different cultures, thus immensely reducing the effect of distance.

The flexibility of Web based systems facilitates customization of the case material to reflect regional specifics. It is also easier to bring about a discipline-based orientation in teaching and training sessions. The systems can be tailored to reflect, say, a behavioral, decision theoretic or any other focus to suit local teaching and training needs. This is very useful for management teaching and training where different modules are often combined to reflect the particular focus of a course. Web pages are very good at representing context, and independent Web pages may be assembled by a dispatching system that determines which page to present, based on a given situation.

The InterNeg Web site and its Web-based system INSPIRE have been constructed to exploit these technologies and their use in teaching. They aim to provide people around the world with analytical knowledge and decision support techniques within the domain of negotiations. The INSPIRE system allows participants to analyze and solve real-like decision problems and conduct negotiations with people from different cultures.

The INSPIRE system is the first Web-based negotiation support system. It is based on analytical models rooted in decision and negotiation analysis (Kersten 1985; Kersten and Szapiro 1986; Rangaswamy and Shell 1994). Developed in the context of a cross-cultural study of decision making and negotiation, the system has been primarily used to conduct and study negotiation via the World Wide Web as well as in teaching information systems, management science, international management and English as a Second Language.

The system has been implemented as an application available through remote access over the Web. It is, however, conceptualized as client-side software assisting a negotiator, much like a traditional desktop application dedicated to the negotiator, and communicating over the Internet with a similar “copy” of the software belonging to the other negotiator.

INSPIRE does not act autonomously like a third party arbitrator; rather each “copy” acts solely to support a single negotiator. It supports asynchronous negotiations, thus ameliorating the time zone problem. To facilitate this type of negotiation the system saves the current state resulting from each user's actions in a form that can be retrieved when the counterpart logs some time later (Kersten and Noronha, 1999).

INSPIRE views negotiation as a process involving three stages: pre-negotiation, conduct of negotiation and post-settlement (see Fig. 1). The first stage involves understanding the negotiation problem, issues and options and the elicitation of preferences through hybrid conjoint analysis. This allows one to obtain a rating for every possible offer. The second stage involves support for offer construction and counteroffer evaluation. Finally, the last stage involves computation of possible offers that dominate the most recent compromise and re-negotiation. Details of the methodology and the system’s architecture can be found in Kersten and Noronha, (1998) and at http://interneg.org/.

The system can be used to conduct multiple bilateral negotiations. The most commonly used case involves trade negotiations between two companies: Itex, a producer

of bicycle parts and Cypress Cycles, which builds bicycles. To reflect the dynamics of negotiation in developing countries, we have developed cases about negotiations for international technology transfer and for the sustainable development of natural resources.

4. Negotiations via INSPIRE

4.1 Cases

At IIMB, INSPIRE has so far been used in four different courses. The first was an elective course on Technology Management, offered to post-graduate students. The primary focus of this course was to understand issues related to technology adoption, technology pricing, adaptation of a technology to local needs and fostering technological innovations at the firm level.

Two courses were long-term executive development programs: the Management Program for Technologists and the Reliance Engineers Program. The focus of the module for these programs was on international negotiations. The fourth course was an elective offered for post-graduate students concentrating in marketing. Given the variation in the focus of the programs and participant needs, different cases were used for the above programs.

For the first course, we developed a case that focuses on commonly used mechanisms for technology transfer including preparation for effective transfer at the firm level. This is the INSPIRE *Techno* case which deals with a technology purchase decision. The case involves two companies, Pegard Technology Inc. (PTI), a U.S.-based manufacturer of industrial robots, and Intelligent Tools Inc. (ITI), a small south Asian firm dedicated to manufacturing transmissions for robots and automated, guided vehicles.

The international technology market for designs and know-how for the product and processes presents a fairly wide range of technological possibilities and choices. ITI has identified the sensors market as an important element for sustaining its competitive advantage. Mastering this technology requires a thorough understanding of optics, computer science, and electronics. ITI lacks expertise in these areas and has thus decided to obtain the needed technology from an outside source. Its search process has led to PTI which has expressed interest in co-operating with ITI. The two companies need to discuss and agree on the terms of technology transfer.

There are four issues that both sides need to discuss, namely, price, collaboration content, technology restrictions and payment. Collaboration content refers to the mode of actual technology transfer. Technology can be transferred in different forms: as blueprints, through technical collaboration involving process designs and drawings, through the acquisition of key parts of the plant or the shipping of the complete plant itself. The parties also negotiatie over constraints on further development of the technology and its sale to others. Such restrictions are common in technology transfer agreements. Each party is presented with their side of the case, told that they are to represent PTI and ITI respectively and that their companies are interested in achieving a breakthrough. No indication as to the desirability of the options (issue values) either in terms of directions or specific trade-off values is made. Since classroom sessions

have already focussed on the issues this would constitute an unnecessary repetition. This design also provides for instructor manipulation of the perceived trade-offs that may be desirable for either research or instructional purposes.

For the three other programs, the emphasis was more on negotiation strategies per se. Because the majority of the participants already had some expertise and interest in the area of purchase management, the "Cypress and Itex" bicycle parts procurement case was used. In this case there are four issues that both sides have to resolve, namely the price of the components, delivery times, payment arrangements and terms for the return of defective parts.

4.2 Introduction of INSPIRE to participants

The negotiation course starts with a basic introduction to negotiation and international technology negotiation. The participants are exposed to cases such as Metro Corporation (Contractor, 1995) and Brother Surgicals (Madanmohan 1997) to familiarize them with negotiation tactics, issues related to licensing in international technology negotiation, effects of sunk costs and other topics relevant to managerial decision making and negotiations.

At the end of the class, a brief presentation about InterNeg and INSPIRE is made. It is made clear at the beginning of the course that INSPIRE is an important module of the course and participation is compulsory. However, it is also stated that the final result of their negotiation (compromise or not) and its utility score are *not* used for grading purposes. This is important because the participants should be able to negotiate in as realistic a situation as possible. That is, negotiations with one company can be broken and new negotiations initiated with another, the counterparts may have their own agenda, and the sole objective of the negotiations cannot be the achievement of a high utility value. The latter is critical because sophisticated users can easily manipulate the utility so that they may achieve a compromise yielding very high utility value but which does not reflect the interests of the company they represent.

Before beginning a negotiation, participants are asked to submit a pseudonym (to ensure anonymity) and their e-mail address (which is kept confidential by the system) before a particular date. Once the list is obtained, all the participants are informed about a demonstration session of INSPIRE. This session is intended to familiarize the participants with the Web (mostly for executive participants), and INSPIRE. The participants are shown how to log on to INSPIRE, how to construct and send offers using the system, and how to incorporate changes in any of the offers or issues in subsequent visits.

The demonstration session usually lasts an hour and a half. The instructor uses hard copies of the forms used in the INSPIRE negotiation so that the participants can actually see what kinds of forms they will fill in. This activity is quite useful as a preparatory step for structuring the negotiation process.

During the demonstration session students log in and read the INSPIRE case. At this time they may conduct initial analytical activities: specify the relative importance of each issue and the options for the issues. This information is used to determine

their subjective utilities for all packages.[1] In many cases the session ends with the participant making a first offer to his /her counterpart. Before the session ends, the participants are reminded that they will be notified by INSPIRE via e-mail whenever a message or offer from the counterpart is received by the system. When they receive notification the participants log into INSPIRE to read and evaluate the offer and submit a counter-offer.

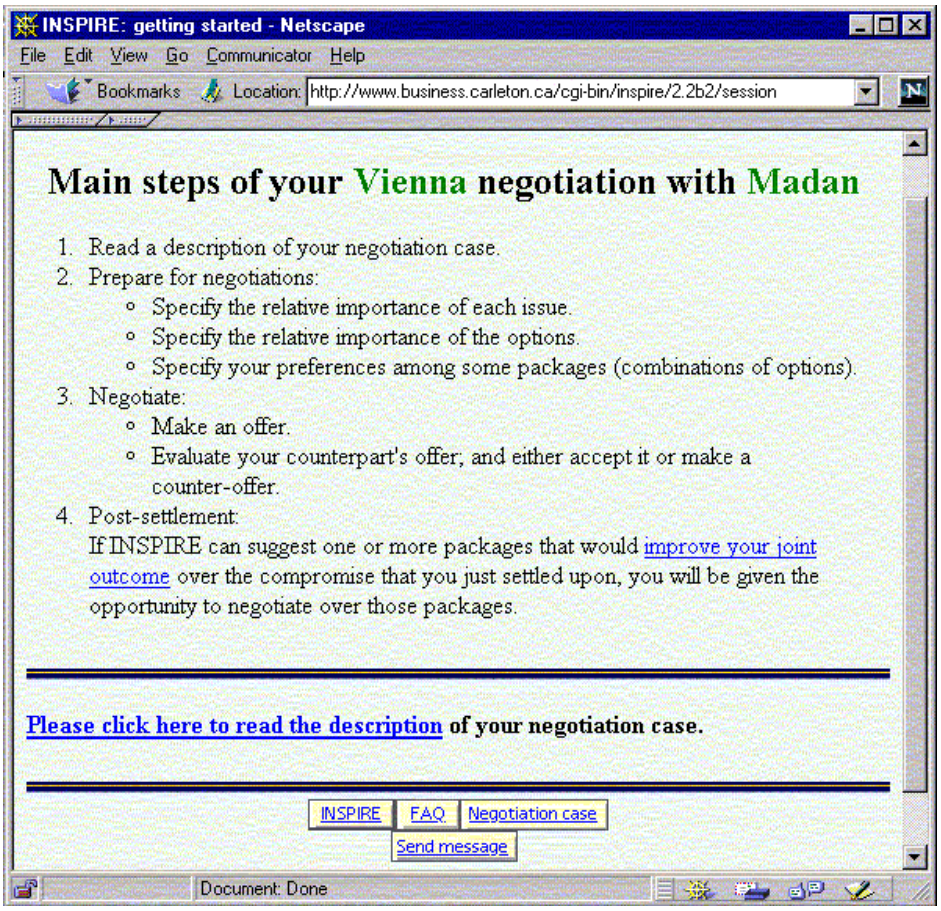

Figure 1. Initial outline of the negotiation process

[1] In INSPIRE each negotiation issue has several options listed a priori. A "package" or "offer" is constructed by selecting one option for each issue. For example, if there are two issues, price and quality and price options are R45, R54, R60, and the quality options are "high" and "medium", then there are 6 different packages (R45 and "high"; R45 and "medium"; R54 and "high"; R54 and "medium"; R60 and "high"; and R60 and "medium").

4.3 An example of negotiations using INSPIRE

This section describes a typical example of user activities in an INSPIRE negotiation. The description is illustrated with six screen snapshots. The first five figures are snapshots of negotiations between Gregory and Madan, two of the paper's authors.

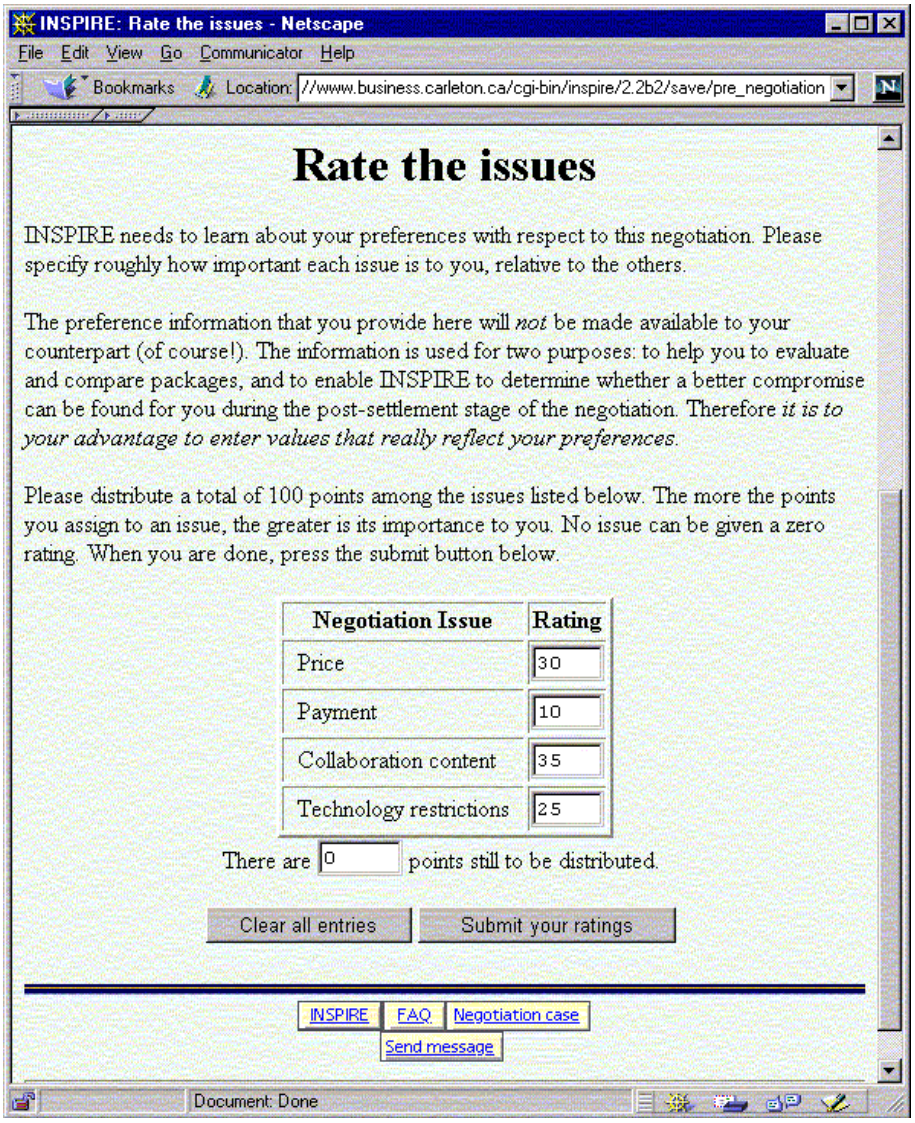

Figure 2. Rating the issues under negotiation

The INSPIRE users are assured that the information they exchange is confidential and therefore we cannot use their messages or offers for illustration purposes. The last figure presents negotiation between two users. It contains aggregated data (utility values of one side) but not any specific information that these users had exchanged.

Negotiations proceed thorough several main steps and in each step the user conducts one or more specific activities. A list of the steps denoting the steps already completed is displayed every time the user logs into the system. The initial screen that the user sees when beginning the INSPIRE supported negotiations is shown in Fig. 1. This is the screen seen by Gregory in his negotiations called Vienna, with Madan.

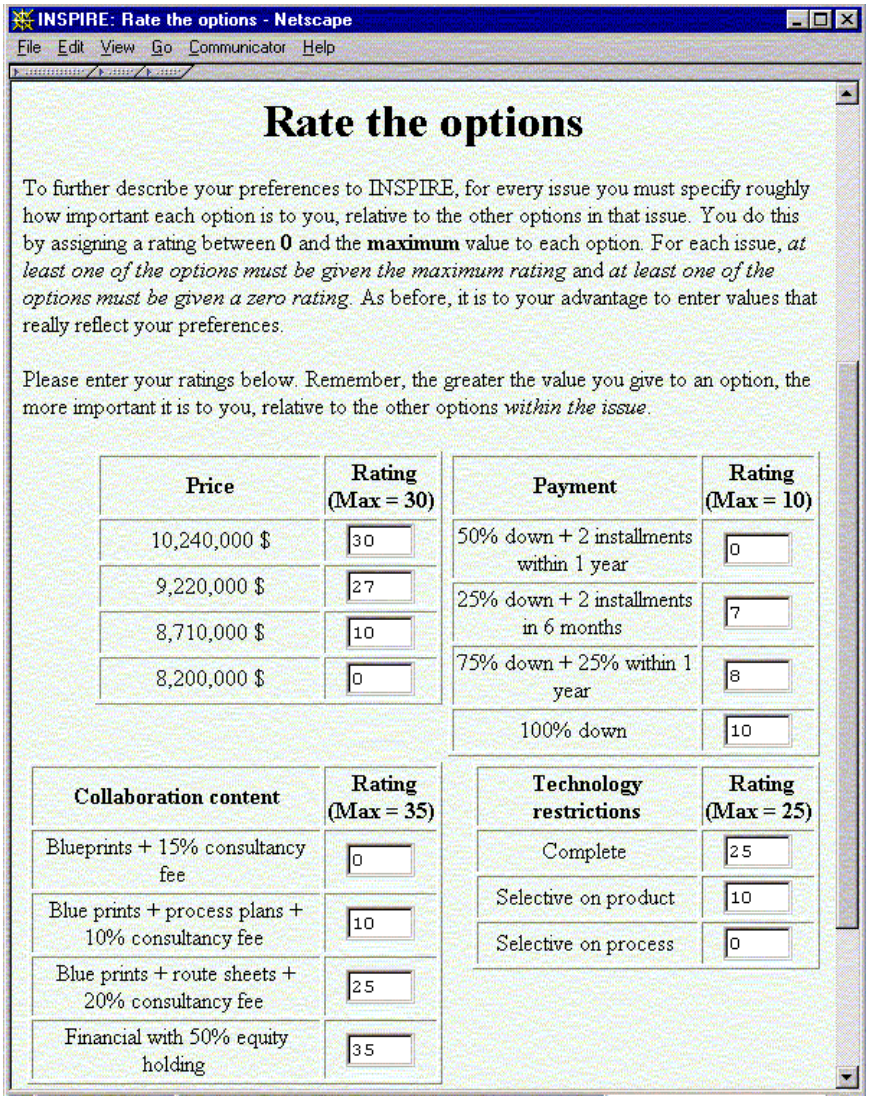

Figure 3. Option rating

At the bottom of Fig. 1 is a request to read the negotiated case that has been selected for the particular negotiations. Having read the description of the case the user can move to the next step which is preparation for negotiations. In this step the user has to evaluate the relative importance of the negotiated issues and, for each issue, their options. The issue rating activity is presented in Fig. 2 and the option rating for the four issues is illustrated in Fig. 3.

Each negotiation has a deadline. Typically, the deadline is set to expire three to four weeks from its initiation in order to allow the participants adequate time to complete their negotiation. After the deadline expires, participants can no longer send offers through the system, effectively representing a "failed" negotiation. Participants are asked to inform the faculty concerned about any difficulty encountered during the course of the negotiation. When conducting the negotiations, users construct offers, analyze counter-offers, send and receive messages, and review the negotiation's dynamics.

Figure 4 is a snapshot of the offer construction screen: it illustrates how the users can communicate either by plain messages or structured offers. It also shows how the score attached to a package helps to select an appropriate offer.

In the INSPIRE system the offer construction activity involves analysis of the counterpart's previous offer, and optionally, formulation of a message to the counterpart explaining and supporting one's position.

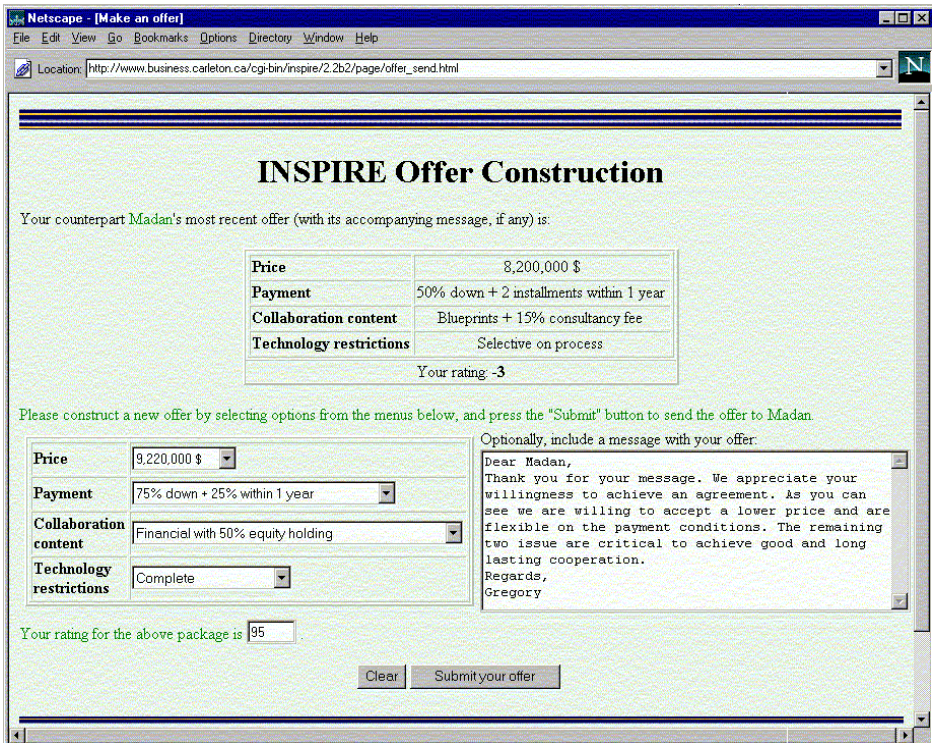

Figure 4. Offer construction.

Received offers are presented as a separate screen; the user may respond using one of four options. Figure 5 shows an offer sent by Madan. Gregory's four options are listed in Fig. 5; he may accept this offer, decide to make a counter-offer (then the offer construction screen would be displayed), send only a message, or terminate the negotiations.

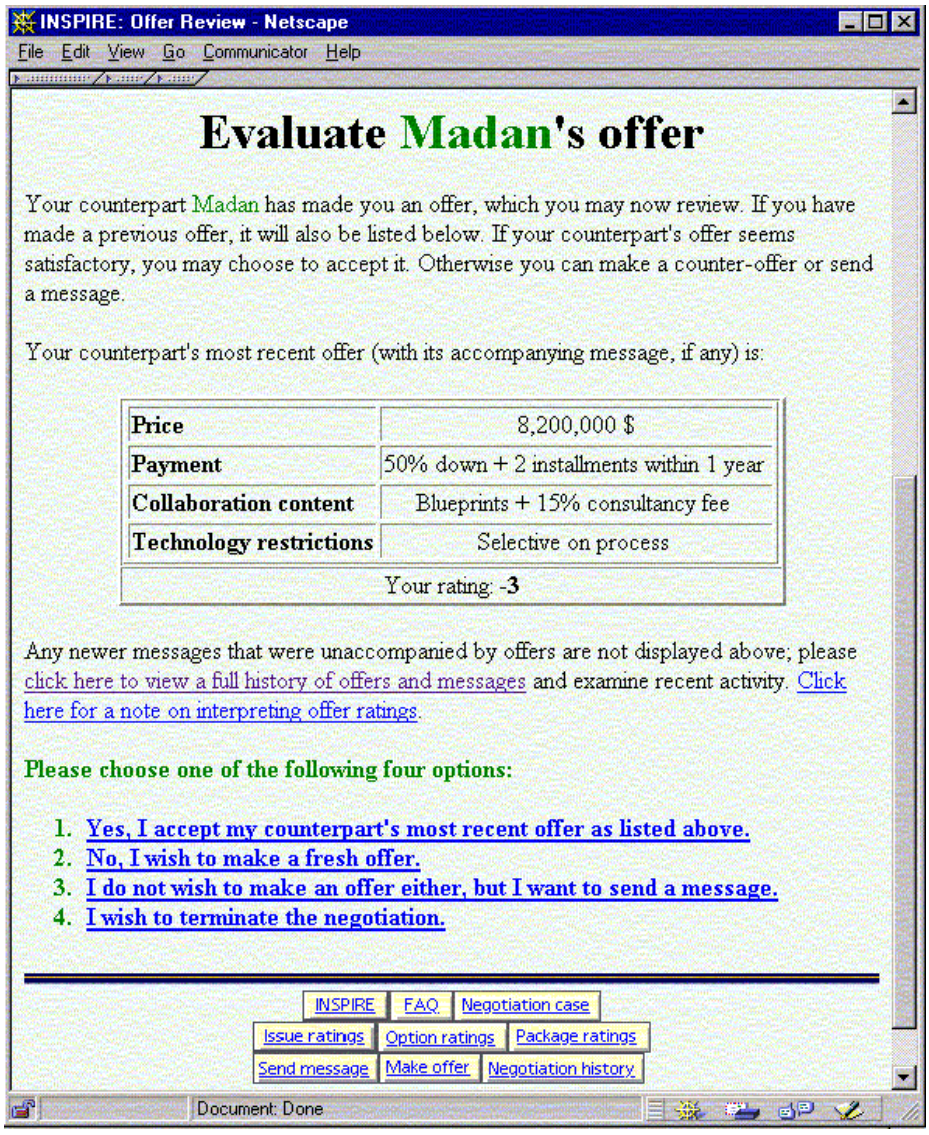

Figure 5. Offer evaluation

At any point the user may review the status of the negotiations by accessing a complete negotiation log that includes all offers and messages with their time stamps. This option is shown in Fig. 5, both below the table with Madan's offer and at the bottom of the screen where menu buttons are displayed.

The negotiation history contains the log of all exchanges as well as a graph that presents the dynamics of the negotiations in a simple form. An example of a negotiation graph is shown in Fig. 6.

The example in Figure 6 is an example illustrates the dynamics of the negotiation between Thomas and Andreas-Helm.[2] These names are pseudonyms that users have chosen for their negotiation. The small numbered triangles denote offers. The X axis shows the time at which each offer occurred and the Y axis represents the score associated with the offer. Note that although both parties' offers are shown, only a single utility function (that of the participant viewing the graph) has been used to evaluate all of them. This reflects the fact that INSPIRE does not expose a participant's preference function to his/her counterpart. It also stems from the fact that comparison of all offers, whether one's own or one's counterpart's, can only be meaningfully done according to one's own value system.

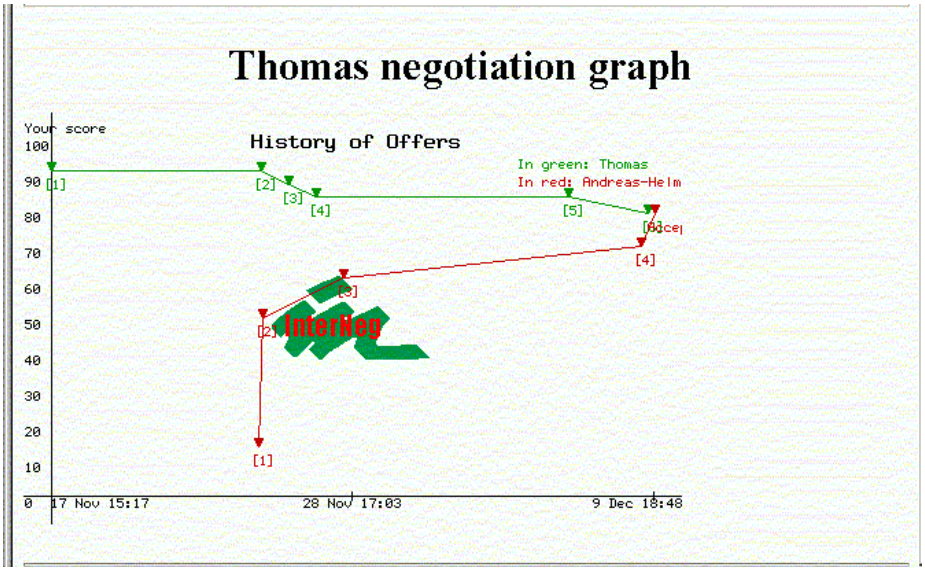

Figure 6. The negotiation graph

[2] Thomas (in reality Petter Westerback for the Abo Academy University in Turku, Finland) has described his negotiation experiences. His report can be accessed at: http://interneg.org/interneg/training/inspire/reports/pw/.

5. The IIMB Experience

5.1 Course offering and students' needs

The Indian Institute of Management Bangalore (IIMB), established by the Government of India in 1973, is an institution of higher learning committed to the cause of excellence in management education. The Institute offers both postgraduate and doctoral courses for students selected through a national level entrance exam and interviews. The Institute offers specialization in marketing, production and operations, finance and accounting, and human resource management. With a view to enabling practicing managers to stay current with new developments in various fields of management, IIMB offers short as well as long duration training programs for executives in general and, in particular, for functional managers. These programs can be divided into two types: (a) those that are open to managers from different firms, and (b) programs tailored to suit the requirements of a specific group or firm.

At IIMB a course on negotiation is offered as an elective, typically in the last year of the postgraduate program. Modules on negotiations are also offered in other courses. For example, in the Technology Management course there is a module on technology transfer negotiations. This module focuses on the dynamics of technology transfer between a donor and a recipient, and typically a case is discussed.

The Institute also offers a two-week executive level program on negotiation and there are several other executive programs, such as Purchasing and Supply Management in which the participants are exposed to the nuances of negotiation. The pedagogy adopted in these courses, prior to the introduction of INSPIRE, was largely lecture based, coupled with cases and games. Some of the homegrown cases were useful in helping the participants understand the behavioral part of negotiation: emphasizing mostly negotiation style and specific negotiation strategies. While these pedagogical tools were useful drivers for imparting the fundamentals of negotiation, the participants had more demands.

Feedback from postgraduate students indicated that they would actually prefer a tool that would enable them to participate in a negotiation, to understand the real motives of a human counterpart, and to see how they fared in the process. The usual restrictions of the semester and class duration also limited the effectiveness of role play and associated experiential learning techniques. A post-graduate student from the intake of '96-97 stated:

> "The international technology negotiation game should expose us to the real motives of the donors, the vulnerability of governments and the recipient. A more dynamic representation wherein we could don the role of choice and enhance our learning is needed".

The feedback from the executive program participants was even more revealing. One of the participants from the Management Program for Technologists said:

> "Given the experience we have in negotiating with the French and others, I look for the negotiation course to actually aid in understanding the dynamics of negotiation from our perspective. In a technology transfer we may be more interested in a typical arrangement, say only technical. We need a course wherein the instructor need not actually hand-hold us through negotiation, but devise programs that help us to uncover ourselves first. Well, later may be we need to know what to do better".

During the early 1990's, several departments of IIMB identified areas of research and consulting interest that would specifically address the needs of Indian industry in an increasingly multilateral and global context. Hence there has been a renewed interest in cross-cultural business, especially negotiations. Faculty teaching related courses felt a need for offering a dynamic platform from which cross-cultural research and training could be pursued along similar lines.

5.2 Users' experience

All students and participants in executive development programs at IIM Bangalore are graduates with English as their medium of instruction, hence no specific language training was required. However, for few of the executives who had had no prior computer experience, a hands-on tutorial to familiarize them with the Internet was provided. They were also guided by teaching assistants during their first few sessions with INSPIRE. Every alternate day the participants were contacted to find out whether they had experienced any snag or difficulty. The participants were requested to record every activity they undertook related to their negotiation via INSPIRE. This log was used for their personal assessment of the overall negotiations after they were completed as well as discussion in the class. It also facilitated individual discussions with the instructor about the difficulties and problems students encountered. On completion of all participants' negotiations, the results of several negotiations were discussed in subsequent classes.

Two batches of post-graduate students and three executive program participants, totaling thirty-three participants, were exposed to INSPIRE. They had registered for the Technology Management and International Management Courses, wherein either technology purchasing or managing across boundaries was the main focus. Descriptive data for the participants, who had an average negotiation experience of 2.2 years, is shown in Table 1. Despite currently low levels of access to the Web, all the participants expected a significant increase in their use of the Web. For a significant majority of the participants INSPIRE was the first DSS/NSS that they had used. Few of the participants reported any problems using the system during their negotiations.

Most participants exceeded their initial expectations for the agreement and achieved much of what they wanted. The upper limit for the utility value is 100 (i.e. the participant receives 100% of his/her most preferred package). As shown in Table 1 the IIMB participants reached an average value of 82 for their final compromises. Since the counterparts may give different weights to issues and options the total value of the final package may vary. If the negotiation is strictly competitive, that is each side assigns mirror image weights to each of the issues and options (e.g., one side wants the lowest price and the other the highest then the sum of the two sides' utility values is 100. On the other hand, if the sides had exactly the same interests, which should not happen given the case descriptions, then combined utility will be much higher.

Exceptionally high scores on expected utility (the value a participant believes he/she will achieve at the beginning of the negotiation) and actual utility (the value of the final agreement) indicate that the participants might have been more interested in maximizing their utility value rather than achieving a realistic compromise. This ap-

pears to have happened in some of the IIMB negotiations even though it was stressed that the utility value would not be considered an indicator of successful negotiations nor used for grading purposes. One might hypothesize that the very high scores reflect high competitiveness of Indian students and managers who wish to better the scores of the colleagues even though this had no impact on their success in the course. This competitive tendency had been remarked upon earlier by Druckman et al. (1976). For comparison, the expected and achieved utility values for Americans, Canadians and Finns are generally between 40 and 60 (Kersten and Noronha, 1998).

Out of the twenty two participants who reached an agreement in a negotiation, about 34 per cent achieved efficient solutions, that is the results for one side could not be improved with degrading the value for their opponent. This is one example of the usefulness of a system like INSPIRE. Despite the fact that the negotiation problem is relatively simple with only 180 potential offers, it is complex enough that most of the participants do not achieve an efficient agreement. If the original agreement is not efficient, the system displays up to five solutions that will yield a higher utility value for both negotiators.

Table 1. Descriptive statistics of users' profile and satisfaction with the experience

Current use of Internet [a]	3.8 (1.4)
Used DSS/NSS previously	19%
Expect increased Web access	100%
Satisfaction with agreement [b]	3.1 (1.3)
Satisfaction with own performance [b]	3.8 (1.4)
Agreement met expectations [c]	3.7 (1.6)
No agreement	11 (33%)
Achieved agreement	22 (67%)
Expected utility value [d]	91 (10)
Utility value of the compromise [d]	82 (22)
Efficient compromise achieved	34%

a - 1 several times a day, 6 rarely; Average (Variance)
b - 1 extremely satisfied, 7 extremely unsatisfied; Average (Variance)
c - 1 yes completely, 5 - no, not at all; Average (Variance)
d - Maximum = 100; Average (Variance)

Along with the data from the post-negotiation questionnaire presented in Table 1, additional information collected at the conclusion of the course offered further insights into the users' evaluations. Table 2 offers descriptive details of some of the feedback received. A significant majority of users said they perceived INSPIRE to have actually helped them to acquire or improve their negotiation skills. Many felt it helped them to prepare for a negotiation and focus better. For example, an executive from United Bristles and Brushes Ltd., said:

> "When negotiating service contracts with a Taiwanese manufacturer we had great problem. Often, he did not understand what I wanted and I did not have a clue of what he was saying. More than language barrier, the major handicap was lack of preparation. INSPIRE prepared me for low communication negotiation and I think that does add value to my practice."

Another participant from a large public sector organization said:

"I find it extremely useful for two purposes. First as a training tool. Second as a platform for small and medium industries managers from India who can negotiate their orders through the system".

A few of the participants stated that INSPIRE helped them to see an intercultural point of view. This occurred in a situation where the participants did not know the nationality of their counterparts. A significant majority said INSPIRE did help them better to understand their counterpart's position and actually helped them to refine their own negotiation skills. Acquiring negotiation skills without direct intervention of the instructor is considered one of the biggest benefits of the INSPIRE system. Despite the participants' limited experience with the Internet, their ability to achieve expected compromises suggests that the INSPIRE system and Web-based negotiations do not introduce a significant burden or add complexity to the already complex negotiation process.

Table 2. Users' perception of their negotiations via INSPIRE

Helps in honing/development of negotiation skills [a]	3.3 (1.1)
Obtain intercultural point of view [a]	1.4 (1.3)
Understand counterpart strategies [a]	2.9 (1.6)
Will use INSPIRE for real-life negotiation [b]	2 (13%)
Will use INSPIRE for preparation of negotiation [b]	6 (40%)
Will use INSPIRE for practice [b]	8 (53%)

a - 1 no, not at all .. 5 extremely; Average (Variance)
b - based on 15 completed post-negotiation questionnaires.

5.3 Teacher's experience

Being an Internet based tool, INSPIRE required different preparation, handling and conduct of the negotiations than face-to-face methods. In contrast to instruction using cases, teaching negotiation through INSPIRE required first ascertaining the level of Internet expertise of the users. Appropriate training sessions on the nternet may need to be planned before the INSPIRE session starts. Typically, at IIMB one week orientation program was carried out to meet the requirements of the participants.

For a teacher whose class conducts a Web-based negotiation the process involves preparation and handling of three major stages:

1. introduction to the system,
2. the first exchange of offers and messages, and
3. discussion following the negotiations.

At the IIMB a formal lecture was adopted to introduce various aspects of INSPIRE and INSS. Its focus is on the specification of the environment in which the participants would negotiate, clarification of any queries regarding the sequence of activities and the submission of ratings, and the provision of certain broad guidelines about the INSPIRE system itself.

The first hands-on class was always conducted at the computer center. In this session, participants were guided through such steps as log in, reading of the case, submission of rating of issues and packages, and finally the first offer. Deft handling of varying levels of experience and expertise among the participants is of crucial impor-

tance here. We found it useful to place one skilled and less skilled participant next to each other. The role of faculty here is one of a facilitator and his presence after the submission of the first offer, was generally not necessary.

Typical problems that may arise in running an Internet based negotiation are:

1. system problems,
2. team problems, and
3. mechanisms for strong administration.

System problems include both hardware and software compatibility issues (INSPIRE requires Netscape 3, Explorer 4 or later browsers) and systemic problems (including power shutdowns, and network problems, common in India) which are often typical in a developing country.

The more acute problem in running INSPIRE negotiations was related to team dynamics, i.e. lack of a response from a counterpart at various stages of a negotiation. This poses serious difficulties in executive development programs that are normally of short duration. We worked out several strategies to address this issue. One was the expectation that students inform their instructor if they do not receive a response within two days after the submission of an offer. In such a situation, the instructor immediately e-mailed the counterpart instructor with a copy to the participant to activate the negotiations. In some cases, the instructor had to remind the participant in person about the upcoming deadline and ensure that negotiations were continuing. By design the INSPIRE negotiation exercise is a non-credit activity. To stimulate participants we posted pseudonyms of those who were active and likely to complete their negotiation. During the classes the participants were reminded of the approaching deadlines and the not-so-active participants were approached and asked if they required assistance.

To ensure successful completion of a negotiation through INSPIRE instructors need to plan and develop strong administrative mechanisms. These included identifying a module coordinator from the group of participants, who could help the group stay focused and productive during the negotiation. Administrative support also had to be planned for unintended interruptions, support that may be required during subsequent negotiations. Fortunately, once the students have begun their negotiation on INSPIRE there is very little intervention required from the instructors.

After the completion of the negotiations, most of the participants typically want to compare their analyses. The analysis of experiences can be done in many ways, i.e. instructors may comment on the process or a participant may dissect the process him or herself with or without external feedback or the instructor may conduct classroom discussions of typical negotiations. Individual introspection proved to be most useful for the executive development programs, while post-graduate students preferred classroom discussions. The instructor's role here is more to reflect on the various scores, probing the processes by which they were achieved, rather than to rank the group's scores or to evaluate specific negotiations on their basis of the outcome.

6. Conclusions

This paper outlines ongoing teaching activities at IIMB in which Web-based materials and support systems are heavily used. It is intended to share these experiences and

provide directions for effective use of Web technologies for teaching and training. An important feature of our experiments is very high acceptance of the INSPIRE system and its capabilities. The system was designed for both training and research purposes and with a cross-cultural focus. However, most of the users see its practical usefulness in its analytical, presentation, and communication aspects. Participants generally said that they would use the system for training and honing negotiation skills.

Web-based solutions such as the InterNeg site and the INSPIRE negotiation support system enhance the instructors' ability to teach negotiations more effectively. Unlike other media, systems available on the Web allow for expanding the discussion beyond local borders. They create a more realistic environment by allowing communication between individuals with similar educational or professional backgrounds. Obviously, it is also possible to have students from the same group negotiate with each other and INSPIRE has also been successfully used in this mode.

At present Web-based systems and materials only allow written communication. Clearly this reduces the participants' range of tactics and strategies since non-verbal communication plays an important role in negotiations (Faure, 1993). However, this limitation may be seen as a difficulty that negotiators will have to overcome in the future as such negotiations become a more common feature of international business. Although expansion into other media are possible in computer-assisted negotiation, the communication bandwidth in many developing countries does not allow for media rich exchanges of messages (e.g., voice, video, complex images).

INSPIRE requires negotiators to define their interests, set targets, and anticipate the actions and strategies of their opponents. One of its most important features is that it allows the formulation and communication of arguments and explanations. While the system shows the value of offers it does neither flag poor negotiation outcomes nor does it highlight inadequate planning. It purposely allows users to make mistakes, employ any tactic they want, and change it whenever needed. The ability to review the verbal negotiation history and the graphical presentation of the negotiation dynamics allows users to review and assess their actions during the course of the negotiation.

The INSPIRE system has proven its usefulness in teaching and training. However, its more sophisticated users request more features and more flexibility in the use of particular decision making and negotiation techniques. Instructors have asked for more negotiation cases and for cases that can be adapted to a specific situation or teaching program. Because the system is also used for research purposes (it is a data collection tool) a decision has been made to freeze its development and instead build another system that can be continually upgraded. This second system, called INSS (InterNeg Support System) is operational and has been used in a small number of negotiations. It allows participants to select a negotiation case, define the important issues, lay out options and to modify or add options or issues during the negotiations. Further, it has mechanisms for the specification and modification of BATNA (Best Alternative to the Negotiated Agreement) and reservation prices. It also has enhanced graphic functions that can be used to display different aspects of the negotiation process.

INSPIRE and its associated systems offer an innovative, flexible tool for teaching negotiations in a variety of settings. Using INSPIRE allows managers to experience cross-cultural tensions that often arise in negotiations surrounding sustainable development. Since the negotiations are with real human beings who have their own aspira-

tions and world views, they achieve a level of realism that is difficult to achieve through role-playing or case studies techniques. The system also introduces its users to the advantages of using support tools to untangle the complex issues that may arise in development negotiations. The wide availability of INSPIRE coupled with its flexibility, provides a means for sustaining not only technical and economic aspects of development but the human skills for managing the trade-offs and comparisons that must accompany any real progress in a sustainable development program

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