

Rewarding Good Negotiating Behaviour with Smartsettle

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from a related presentation for the
7th Annual International Forum on Online Dispute Resolution
in Victoria BC, June 18 – 19, 2008



Figure 1. Smartsettle Technology Presentation

The illustrations in this paper have been extracted from a PowerPoint presentation given by Thiessen at the 7th Annual International Forum on Online Dispute Resolution.

¹ Ernest Thiessen, President and CEO of iCan Systems Inc., is responsible for the research and development of Smartsettle. Paul Miniato was VP Software Engineering during the time that some of the features described in this paper were implemented. Both Thiessen and Miniato are named as inventors of a patent pending application entitled "Multivariate Blind Bidding Negotiation Support System Rewarding Smallest Last Session Move".

Ordinary negotiations suffer from three serious problems:

1. Time and money are wasted with a tedious negotiation dance,
2. Value is left on the table, and
3. Relations are tattered by adversarial tactics.

Smartsettle has a suite of products from One to Infinity (Figure 2) that employ sophisticated optimization algorithms and appropriate rewards for good negotiating behaviour to enable negotiators to overcome all three of these problems.



Figure 2. One to Infinity

Smartsettle Infinity uses optimization to uncover hidden value in cases with any number or issues or parties. It turns adversarial negotiators with a win-lose attitude into collaborators looking for a solution beyond win-win. Smartsettle One is optimized for negotiators looking for a single-valued outcome. This application excels in is saving time, virtually eliminating the tedious negotiation dance that characterizes most ordinary negotiations. If you start your negotiation with Smartsettle One and decide that it isn't that simple after all, you can easily move it to Smartsettle Infinity. Both of these products manage your confidential data with a patented neutral site that puts you in control of a process that quickly produces fair and efficient outcomes.

Smartsettle is a comprehensive interactive and dynamic multiparty eNegotiation system that helps decision makers model their problem, elicits their preferences on both quantitative and qualitative issues. Figure 3 illustrates an invisible and secure neutral site server on the Internet that Smartsettle employs to keep party preferences confidential and generate suggestions for achieving the objectives of fairness² and efficiency.

² Fairness is like beauty; it exists almost entirely in the eye of the beholder (http://andrewolmsted.com/archives/2007/01/the_beauty_of_f.html). Fairness achieved with Smartsettle is determined by the negotiators themselves. They predetermine the fairness of the

The Smartsettle negotiation process is divided into a series of sessions. In the first session, parties exchange optimistic proposals in order to identify bargaining ranges. In subsequent sessions, in order to quickly achieve an outcome, and avoid the tedious negotiation dance that characterizes most ordinary negotiations, Smartsettle negotiators can take advantage of a unique³ multivariate blind bidding method. Instead of responding to their opponent's concessions, a Smartsettle negotiator focuses on his or her own party's interests by placing hidden acceptances on favoured suggestions. Parties may also continue to exchange proposals in order to visibly narrow any bargaining ranges that may be particularly wide or lopsided.

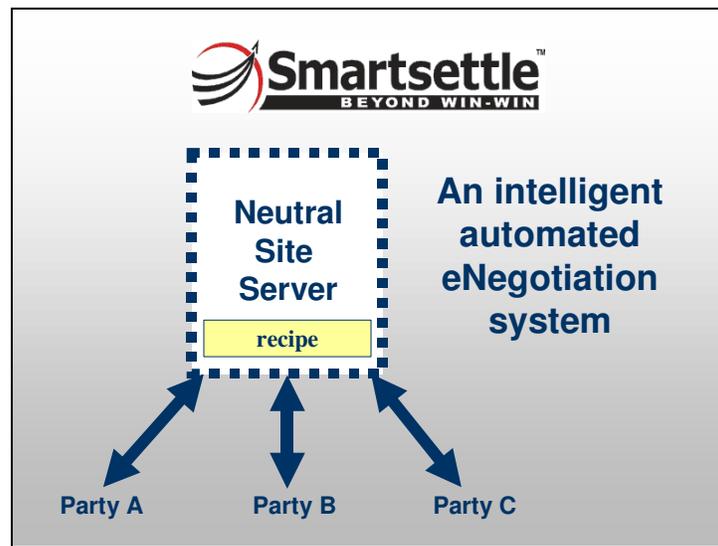


Figure 3. Neutral Site Server

Smartsettle employs a neutral site server on the Internet that acts as an unbiased automated mediator that understands how each party becomes satisfied. The server uses optimization algorithms to suggest efficient outcomes. Imagine optimization algorithms as a recipe that is used by the neutral server to take ingredients from the parties and return something good back to them.

At the end of each session, Smartsettle checks to see which packages have been accepted. If one or more packages have been mutually accepted, Smartsettle declares one of those packages to be a deal⁴. In choosing which of

outcome by first accepting the process as fair. It's like the slicer-picks-last rule. Most people perceive that to be a fair procedure because it strikes a fair balance between the importance of the outcome and the cost of getting there (<http://legaltheorylexicon.blogspot.com/2004/02/legal-theory-lexicon-023-procedural.html>).

³ Smartsettle's method of blind bidding differs from ordinary blind bidding in what is blind. In ordinary blind bidding, the proposals (offers and demands) are blind. In Smartsettle's method, the acceptance of a value or package is hidden until there is a deal.

⁴ In Smartsettle Infinity, this deal is considered a tentative agreement. In order to make sure that no value is left on the table, parties may request an improvement. Smartsettle uses an algorithm called "maximize the minimum gain" in order to generate another suggestion on the efficiency frontier. How close Smartsettle comes to achieving this objective depends on how well parties have represented their preferences.

the mutually acceptable packages becomes the agreement, Smartsettle rewards the party that moved soonest to the zone of agreement⁵.

With Smartsettle's server-based technology, progress towards agreement is made both synchronously and asynchronously to make the best use of each party's scheduling constraints. Structuring the negotiation process with sessions helps asynchronous communications progress more quickly due to the fact that each party usually makes at least two moves per turn. A session would usually be in progress when a party returns to the negotiating panel. That party would typically make a move to end that session and then, if there has been no agreement, make another move to start the next session.

Whether or not parties should also meet face-to-face depends on a number of factors such as:

- physical distance between the parties,
- time schedules,
- the state of the current relationship, and
- the importance of future relationships.

Face-to-face meetings can be productively used for creating a Framework for Agreement. A Framework for Agreement is like a final agreement except for blanks that represent the unresolved issues. Parties may also wish to discuss certain facts of the case that may make a difference to their preferences. It is not necessary, and often not advisable, to use face-to-face sessions for exchanging proposals or any potentially adversarial type of communication. However, a warm handshake at the end of the process may well be important.

Figure 4 illustrates one important advantage of the Smartsettle blind bidding process with a simple model of a two-party dispute resolution process. To give the negotiation some context, the parties are named InsurCo and Claimant, but you can imagine any type of dispute that might end up in court. For other types of negotiations, replace the label "Expected in Court" with BATNA.⁶

⁵ Each negotiator has a zone of acceptability. If they are to find agreement, then these zones must overlap. This is the zone of agreement in which the final agreement on whatever is being negotiated may be found.

⁶ BATNA is a commonly used acronym for "Best Alternative To a Negotiated Agreement". In this model, we assume that the costs of negotiating and securing the BATNA are not part of it. The BATNA for each party would not usually be the same.

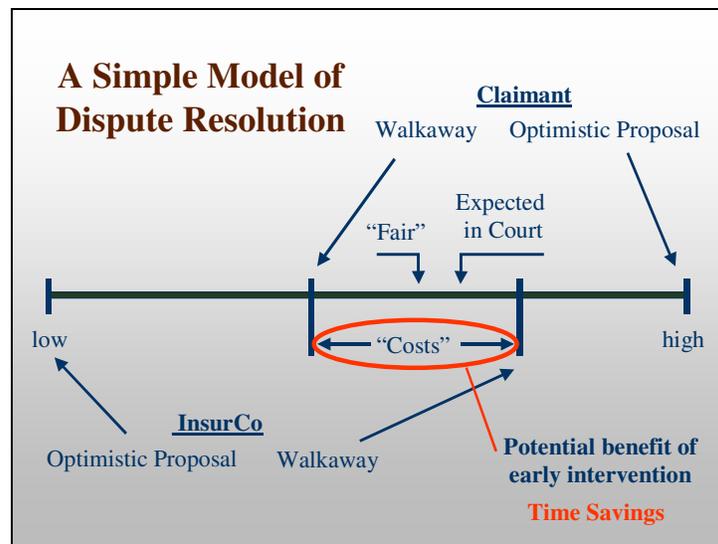


Figure 4. A Simple Model of Dispute Resolution

The labels “high” and “low” imply a dispute over a single numerical issue like money. The expected costs in this case, mostly the time associated with the alternative (preparing for court), represent the potential benefit of early intervention.

This dispute has been boiled down to a single monetary issue. Claimant prefers high values and InsurCo prefers low values. The parties initially submit optimistic proposals to establish a bargaining range. Somewhere within that range is a fair outcome, but everyone has a different idea about where it might be. What’s expected in court might be something else again. If the case does end up in court, there are some costs in getting there (mostly time). The expected court outcome plus an estimate of InsurCo’s costs is their “walkaway”. The expected court outcome minus an estimate of Claimant’s costs is their “walkaway”. The sum total of these costs represents the potential benefit of early intervention in single-issue cases.⁷

Most disputes in the current court system are treated as if they will reach the judges, when in fact, only about 5% of them actually do. However, due to a poorly built justice system⁸, most of the costs of going to court are also incurred by the rest of the cases. In related research at the UBC Faculty of Law in 2002, John Hogarth and Kari Boyle asked, “Is Mediation a Cost Effective Alternative in Motor Vehicle Personal Injury Claims? They concluded; “The most cost effective method of resolution for all parties is early direct negotiation. All parties benefit from early and fair resolution.”

⁷ In more complex negotiations involving multiple decision variables, the potential benefit of early intervention also includes hidden value that cannot be depicted with this simple model. In high-value negotiations, the value of wasted time is often dwarfed by inefficiencies due to value left on the table.

⁸ These statistics were estimated from British Columbia statistics during a verbal conversation on February 22, 2006 with Chief Judge Hugh Stansfield, Provincial Courts of British Columbia.

The goal of any negotiation is to determine a fair and acceptable outcome. If there is an overlap within the range of outcomes acceptable to the parties, then that overlap represents the zone of agreement. However, where a fair outcome might lie is a subjective matter and there is no way to determine that without both parties agreeing to it. One party might be forthcoming and start out with a proposal that s/he honestly thinks is fair. However, if the other party disagrees, honestly or otherwise, then they could be stuck at impasse with face-saving problems. In order to avoid this, negotiators will typically start out with optimistic proposals. However, in order to reach an outcome (assuming no mediator), they must resort to a negotiation dance and hope for the best.

Negotiators get the best of both worlds using the Smartsettle process. They can start with optimistic proposals, and even concessions to narrow the bargaining ranges if they like. However, they can also immediately indicate what they think is fair without revealing that to the other party. They do this by placing a hidden acceptance on one or more packages⁹, as depicted by Figure 5. If the other party does likewise, and there is an overlap, then they've got a deal. If there is no deal, all the parties learn is that one or both of them will need to "try harder" in the next session if a deal is to be reached. However, neither party has revealed anything to the other that can be taken advantage of in subsequent negotiations.

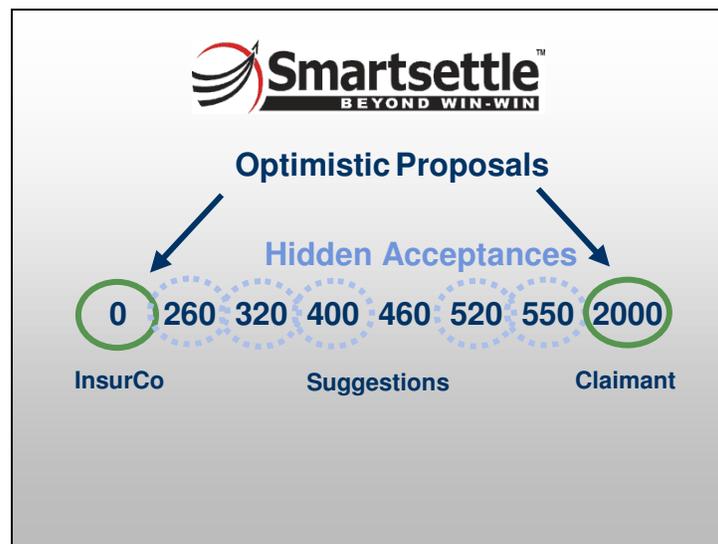


Figure 5. Hidden Acceptances on Suggestions

The Smartsettle process encourages parties to begin with visible optimistic proposals. The bargaining range here is between zero and 2000¹⁰. Rather than continue with a tedious negotiation dance, Smartsettle generates a sequence of suggestions on which each party can place hidden acceptances. Neither party knows which values or packages the other party has accepted until they both accept the same value or package.

⁹ In a single-issue case the package would only be one value.

¹⁰ The range of zero to 2000 could represent dollars in a single-issue negotiation. In a negotiation over multiple issues, this range might be satisfaction ratings, in which case the scale would appear differently to each party, depending on their preferences.

In order to encourage parties to move sooner to the zone of agreement, Smartsettle rewards the party who made the smallest move in the last session. Figure 6 depicts a hypothetical scenario where Claimant is rewarded for making the smallest last move¹¹. For ease of illustration, the simplest possible case is illustrated here, i.e., negotiation of a single numerical issue. The illustration depicts actual results when using Smartsettle One, which is Smartsettle's entry-level product, optimized for single-issue negotiations. Using Smartsettle Infinity with complex negotiations, this method is extended to cases with multiple issues and parties.

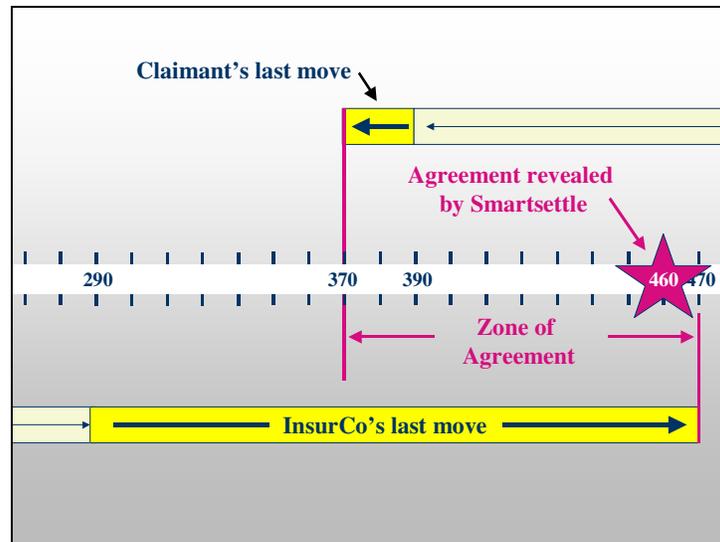


Figure 6. Reward for Smallest Last Move

An agreement is declared by Smartsettle One in response to the last moves made by InsurCo and Claimant. The yellow bars show the moves made by each party in each session. At the end of the second-last session, InsurCo and Claimant had accepted values of 290 and 390 respectively. These acceptances are hidden from the other party. In the current session, InsurCo accepted a value of 470 and Claimant accepted a value of 370. The final agreement could potentially lie anywhere between 370 and 470 since all values in between have been mutually accepted. Smartsettle declares the agreement to be 460, which proportionately rewards Claimant, who made the smallest move in the final session.

¹¹ The formula used here for determining the agreement value is

$$\text{Reference} = (T_c * A_c + T_i * A_i) / (T_c + T_i)$$

where

A_c = the least preferred accepted value of Claimant at the end of the previous session.

A_i = the least preferred accepted value of InsurCo at the end of the previous session.

T_c = the size of Claimant's move

T_i = the size of InsurCo's move

Smartsettle declares the agreement to be the accepted value that is closest to the calculated Reference. In this example, the Reference and Agreement happen to be the same.

Of course, negotiators could still hold back in this process if there were an unlimited number of sessions available. To avoid that possibility, Smartsettle allows either party to declare Final Session at any time. To further encourage parties to be reasonable in Final Session, they can also invoke the arbitration option. If Final Session results in no deal, then the arbitrator is instructed to declare one of the accepted packages as an agreement (Figure 7). He would do this by considering the facts and favouring whoever seems to have been most “generous”.¹²

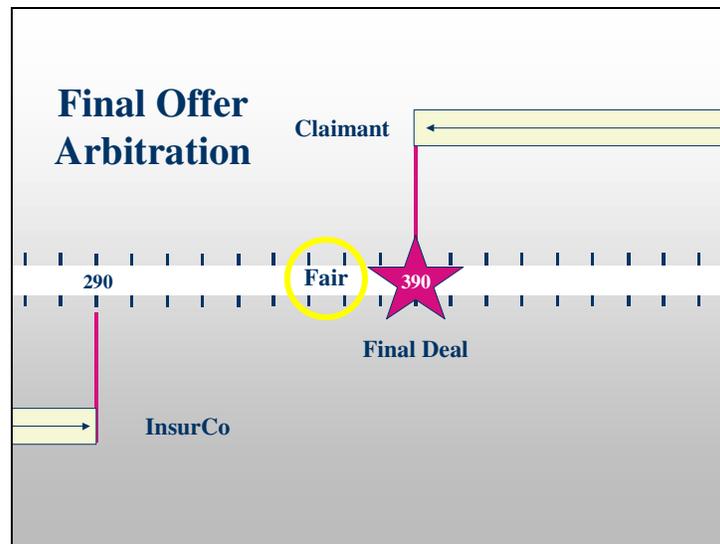


Figure 7. Final Offer Arbitration

If negotiations end without an agreement, parties can still be guaranteed an agreement if they agree to Final Offer Arbitration in the Final Session. From the last two accepted values (or packages), the arbitrator will pick the one closest to the arbitrator’s own idea of “fair” and declare it to be the Final Deal.

The incentives provided to encourage Smartsettle negotiators to come to agreement quickly are made possible by a unique multivariate blind bidding method, in which proposals and suggestions are actually out in the open for all parties to see. A party can inspect and evaluate a potential outcome before it becomes a deal and safely accept packages that they would be willing to sign.

¹² If parties are using Infinity, parties may still wish Smartsettle to attempt to find an improvement to discover if any hidden value remains.

The main benefit to negotiators in simple single-issue cases is time savings that result from early agreements. Such cases can be negotiated most effectively with Smartsettle One.

Table 1 summarizes Smartsettle rewards for good negotiating behaviour. Acceptance of a fair outcome is the first prerequisite for achieving a win-win outcome. Smartsettle enables this behaviour in a process where parties can place hidden acceptances on packages. The party that moves early to the zone of agreement is rewarded with a bigger portion of the overlap. An agreement is ensured if parties agree to final offer arbitration in the Final Session, and in fact is more likely to happen without arbitration in that case. These three behaviours all contribute to quickly achieving a fair outcome and are applicable to all negotiations, whether simple or complex.

Table 1: Smartsettle Rewards for Good Negotiating Behaviour

Behaviour	Reward	Objective
Acceptance of a fair outcome	A win-win outcome	Fairness
Early movement to the Zone of Agreement	Bigger portion of the overlap	
Agreement to Final Offer Arbitration	Guaranteed agreement	
Truthfulness	Uncovered hidden value	Efficiency
Collaboration	Improved relationships	Peace

In more complex multivariate cases, the importance of coming to an early agreement is even greater. In addition to time savings, negotiators also have the opportunity of discovering hidden value. Figure 8 illustrates the magnitude of value often left behind in ordinary negotiations. Research¹³ shows that negotiators that are subjected to a tedious negotiation dance become exhausted and have little energy left to go “beyond win-win”[®] in a search for hidden value.

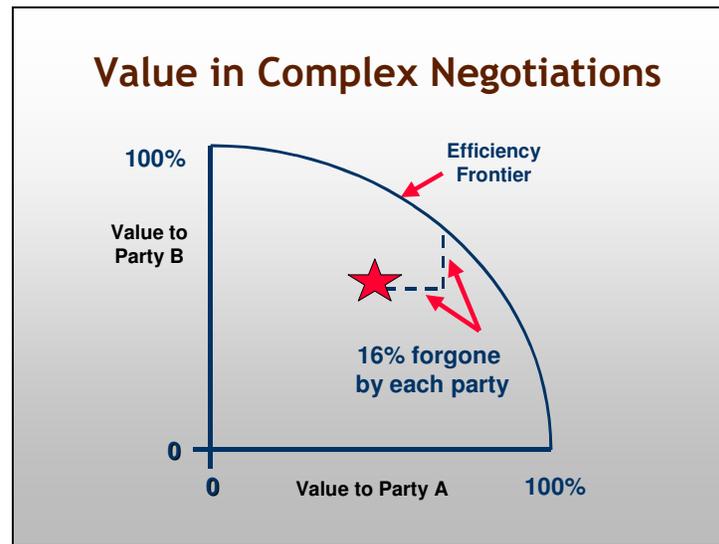


Figure 8. Value Forgone in Complex Negotiations

Substantial value is often left on the table in complex negotiations. Research by Thiessen¹⁴ pointed to a typical value of 16% forgone by each party.

In ordinary negotiations, parties will often tend to hide or even misrepresent their true preferences. However, with Smartsettle Infinity, which is a comprehensive eNegotiation system that addresses all of the challenges set forth in this paper, the temptation to misrepresent preferences is eliminated. Negotiators realize that deception is actually counter-productive with Smartsettle and that truthfulness is rewarded with significant uncovered hidden value. All of these good behaviours together represent collaboration and result in improved relationships.

Smartsettle’s vision is

Conflict resolved in a more
peaceful, collaborative & intelligent
way throughout the world ¹⁵

¹³ 1999, Shell, G. Richard, *Bargaining for Advantage: Negotiation Strategies for Reasonable People*. New York: Penguin, 1999. ISBN 0 14 02.8191 6 paper.

¹⁴ 1992, Thiessen, E.M., and D.P. Loucks, "Computer-Assisted Negotiation of Multi-objective Water Resources Conflicts," *Water Resources Bulletin*, American Water Resources Association, 28(1), 163-177, February.

¹⁵ Please visit www.smartsettle.com for more information.