

GAME THEORY AND THE LAW

(ALTERNATIVE DISPUTE RESOLUTION)

“What economists call game theory psychologists call the theory of social situations, which is an accurate description of what game theory is about. Although game theory is relevant to parlor games such as poker or bridge, most research in game theory focuses on how groups of people interact.”

-Prof. David K. Levine, Economist

INTRODUCTION

‘Game theory is the science of rational decision making in interactive situations.’¹ ‘Game theory can be defined as the study of mathematical models of conflict and cooperation between intelligent rational-decision makers.’² Both these definitions focus on the interactive component between the parties. At the heart there are the twin issues of conflict and cooperation. There is the assumption that these decision makers are rational and have specific objectives in mind which in a dispute is to reach a settlement. Game theory, a mathematical model used in a variety of dispute contexts starts with the premise that the participants, while not knowing fully the position of the other party, are rational and want to achieve the best possible outcomes.

Despite the intensity of a dispute, both sides ultimately want to achieve the best possible outcome. Each party has to assume that the other party is rational even though he may not know exactly what the other party wants. It is in this situation that the third party negotiator’s role becomes increasingly important to help move the parties along in the process of information exchange until they come closer to a common understanding as to what the other person wants. Game theory provides a new language to think of human behaviour and of parties who are in conflict. Negotiation can be used in the family setting to alter the expectations and preferences of the parties. In game theory, one of the

¹ Dixit & Skeath, *Games of Strategy*, 1999, p. 3

² Myerson, Roger B. (1991). *Game Theory: Analysis of Conflict*, Harvard University Press, p. 1. Chapter-preview links, pp. vii–xi

dominant models which has been used to explain the behaviour of individuals is the Nash Equilibrium. The usefulness of the Nash Equilibrium is that somewhere in the hodgepot/potboiler of emotions there comes a point where the parties realize that they will need to settle in order to maximize their chance of a positive outcome. This Article uses game theory to explain the power of game theory in showing how law can be effective without sanctions.

WHY GAME THEORY?

Game theory is the formal study of conflict and cooperation. Game theoretic concepts apply whenever the actions of several agents are interdependent. These agents may be individuals, groups, firms, or any combination of these. The concepts of game theory provide a language to formulate, structure, analyze, and understand strategic scenarios.³

Game theory is predicated on the premise that there can be a ‘non-zero sum’ game where simply because one of the parties engaged in the dispute process has won, it doesn’t mean the other has lost. It is for this reason that only some cases are suitable for ADR. The mediator or Arbitrator, in striving to let the parties own the process is in fact working for a ‘win-win’ situation— trying to bring the parties as close to a tolerable position as possible.

In game theory, the Nash equilibrium is a solution concept of a non-cooperative game involving two or more players in which each player is assumed to know the equilibrium strategies of the other players, and no player has anything to gain by changing only his or her own strategy. If each player has chosen a strategy and no player can benefit by changing strategies while the other players keep theirs unchanged, then the current set of strategy choices and the corresponding payoffs constitutes a Nash equilibrium. For example, X and Y are in Nash Equilibrium if X is making the best decision she can, taking into account Y's decision, and Y is making the best decision she can, taking into account X's decision. Likewise, a group of players are in Nash Equilibrium if each one is making the best decision that he or she can, taking into account the decisions of the others.

³ Theodore L. Turocy, Bernhard von Stengel, “*Game Theory*”, CDAM Research Report LSE-CDAM-2001-09, available at <http://www.cdam.lse.ac.uk/Reports/Files/cdam-2001-09.pdf>

The best negotiator knows when to compete and when to cooperate.

THE DYNAMICS: ADR

ADR offers the parties an opportunity to avoid risks and reduces the likelihood of an unfavorable outcome. It gives the parties in the dispute the opportunity to consider the risks involved in litigation. The use of game theory is not meant to assume that within it is the solution to real life issues. What it offers is simply a model to

understanding conflict situations and analyzing how parties can make decisions that result in a positive outcomes. There is also no claim to expertise in the use of the game theory model and the approach may in fact be superficial, but mediation transforms disputants into a harmonious non-zero sum relation which elevates the process of ADR into a normative justification for the avoidance of litigation.

In case of mediation, while a mediator is not the decision maker in the strictest application of the phrase, he is nevertheless the one who manages all the information, especially in a context where shuttle diplomacy is being employed. To this end the mediator must be able to create an appropriate information model that will work. He also has to create an atmosphere where each party becomes aware of his option but as he does so, he must consider their 'preferences and reactions'. By acquainting himself with the expectations of each participant in the dispute process the mediator assumes more than a supervisory role but a God-like benevolent purpose. In this way he influences the process by deciding which or what part of the information to convey, effectively becoming a decision-maker. The mediator must ensure that what would have been framed in adversarial language is not spoken in the language of peace.

It is said that the best negotiators understand the tension and timing of competition and cooperation in achieving deals that are satisfactory to negotiating parties. Game Theory is fundamental to understanding negotiations. Every human interaction can be understood as a game in which there is both cooperation in creating value and competition to divide it up. Thus, combining these two aspects into one unified behavior, "cooperation" expresses the strategy of effective negotiations.⁴ In his recent book on legal negotiations, Harvard Professor Robert Mnookin argues that lawyers who make deals and resolve disputes are at

⁴ Barry Nalebuff and Adam Brandenburger, *Cooperation*, 1996.

the same time creating values and claiming value for their client.⁵ We will now look at the techniques involved while applying game theory to negotiation.

A. Understand the other side

A key concept in strategic negotiations is to develop a plan that not only includes a thorough understanding of your side of the case, but also an understanding of the opponent's case as well. Effective negotiators put themselves in the shoes of their opponents and try to evaluate the strengths and weaknesses of the case as viewed from the other side. When a negotiator understands his opponent's perspective of the case, he is better able to anticipate that he will be needed at the right moment to address and overcome the objections of his opponent.

B. Start at the Goal Line and work backwards

Effective negotiators have an opening, middle and end game strategy. They think through about where they want to end up and work backwards to develop tactical maneuvers that lead them back to their goal. Local negotiation is a dynamic process of human interactions at many levels, perceived and unperceived, played in the shadow of a range of possible judicial outcomes with each party gambling on the strengths of their prediction. Define your goal - for eg. the terms of an acceptable agreement, and work backwards - then develop proposal and counter proposals that will lead to where you and your client want to end up.

C. Before and after the negotiation

The counsel should write out a plan of attack before the negotiation begins. After the negotiation, write a summary of what happened that explains why the counsel believes that the negotiation was successful or not. This would be an excellent way of tracing one's experience and reviewing what worked and what didn't.

CONCLUSION

Playing the dispute resolution game can be a very challenging task. According to game theory, success depends on knowing how to play the right game. One key to success in any game is to look forward into the game and then reason backward to figure out the best

⁵ Scott R. Peppet & Andrew Tulumellow, *Beyond Winning: Negotiating to create value in Deals and Disputes*, Harvard University Press, 2000.

action today considering what your competition might do tomorrow. This perspective requires you as a strategic thinker to get in the head of your competitors and consider how they are likely to play the game. Game theory enhances one's strategic understanding of both the opportunities and limitations of negotiation. Whereas opportunities for resolving conflicts at all levels abound, many are lost because players are not forthcoming, norms and procedures do not exist or are manipulated, threats are made the undermine trust, and so on. Rather than viewing these problems as pathologies, they are more properly seen as the strategic responses of rational actors in the negotiation games they play. Because negotiations are intrinsically strategic, game theory provides powerful tools for negotiators to narrow their differences and find common ground. The application of game theory in negotiation is therefore, crucial and an understanding of the same is now being widely used by lawyers in resolution of disputes outside courts.

For further information on Game Theory as well as its application in Law and ADR please contact Nitin Walia or Taniya Pandey at KMNP Law by telephone (+91-11-4550 2527) or email (n.walia@kmnplaw.com). The KMNP Law website can be accessed at www.kmnplaw.com.

The content of this article is intended to provide a general guide to the subject matter. Specialist advice should be sought about your specific circumstances.