



Understanding Multi-Player Complexity

Situations with multiple players who can all act to influence the final outcome are particularly difficult for numerous reasons.

A) Internal bias

Humans are inherently biased towards seeing the situation from their own perspective and projecting those same values onto other players. Open Options deals with this by forcing the client's issue team to examine the situation from the viewpoint of external stakeholders such as competitors, regulators or suppliers.

B) Larger variety of actions

Incorporating multiple players into the analysis increases the types and variety of actions available which increases the number of possible outcomes. When considering an internal problem, the list of possible actions is limited to what can be done by the company itself. However, once governments, competitors and suppliers are involved the range of possible actions and outcomes expands very quickly.

C) Different players with different objectives

While having more possible actions expands the number of possible outcomes, having different players with different objectives expands the forces acting in a situation. As an analogy, compare one person pushing a large ball towards his goal against another scenario where eight people are each pushing the same ball towards their individual goals. Regardless of the obstacles in the path of a single organization, predicting the evolution of an issue involving multiple forces acting independently is more difficult. Open Options' tools identify novel trade-offs, commonalities, hidden opponents and other tactical information that can be used to predict the behavior of players in a multiple player situation.

D) Coordination problems

Due to the corporate hierarchy, internal decisions can be controlled and actions aligned. However, when there are multiple external players involved, some players will be actively working against your interests and their actions will not be under the corporate hierarchy's control. Without control over the actions, coordination of actions becomes more complex.

E) Players react to each other, not according to a probability function

In the real world, competitors do not react to a new pricing strategy by flipping a coin. To truly model a "thinking" player, the player must react based on the actions of other players not on some inferred probability



function. To explore all the possible “what if” scenarios where one player might act first but all other players can react in different ways requires powerful software to sort through all the possibilities. Open Options has developed proprietary tools to do just that. These tools build upon traditional competitive intelligence as they enable analysis of players as dynamic rather than static entities.

F) Unstructured

Some problems, such as financial or purchasing decisions have widely accepted methods for assessing the opportunity such as net present value. However, when a problem involves different preferences from different players and no common measurement value (such as dollars) it becomes unstructured and often causes either analysis paralysis or forces a gut-feel approach. The Open Options Process introduces a structured framework to discuss inherently unstructured problems and thereby avoids circular discussions. Moreover, it brings analytical rigor to problems that may have previously been solved by gut-feel alone.

G) Complex in an unconventional way

Throughout school and in the business world, traditional problem solving uses spreadsheets and statistics to synthesize many elements of an issue down to a few key decision variables. For example, spreadsheets allow the decision maker to first see how all the different elements interact and then decide based on a few outputs. Statistics is similar as it looks for patterns in numerous data points and outputs summary statistics which are useful in making decisions.

Making decisions in a multiple player scenario is quite different, since there is no large set of data points to analyze and the decision cannot be reduced to a single decision variable such as net present value. Instead, the outputs are millions of different outcomes that describe different states of the situation.

Although it is not a reason why multiple player situations are complex, it is symptomatic of multi-player complexity that hundreds of academic papers that study the simplest of games (2 players, 2 options each) have been published and that game theorists have been awarded two Nobel prizes in economics.

While multiple player situations are complex in a variety of ways, Open Options has over 10 years' experience interpreting how multiple player scenarios evolve and devising strategic action plans to take advantage of the unique characteristics of multiple player situations.