

Book Review

Game Theory for Business – A Primer in Strategic Gaming

By Paul Papayoanou

Book Review by Frank Koch

There are many excellent books describing business strategy development. Some of them focus on decision analysis techniques to deal with decision making in the face of uncertainty. Others cover game theory and the interaction of players as they compete, collaborate and cooperate. Game theory and decision analysis are usually treated as two independent disciplines. However in my experience during the past 20 years in the oil and gas business, many strategic business decisions must be made in the face of both significant uncertainty and complex player interactions. Game Theory for Business fills that void in decision analysis literature, providing a practical guide to the incorporation of gaming elements into business decision making.

The book starts with a short review of game theory's development as a strategic tool, referring to the work of Nash, Schelling and others, to provide a background; but Papayoanou does not distract the reader with a mathematical exposition on the theory. He refers the reader to several fine texts where they can absorb all the theory and math they desire. The book provides a framework for thinking about simple games by considering three "end members": competitive games, collaboration games, and coordination games. These basic games are illustrated using 2X2 matrices and simple game trees. Papayoanou then describes a strategic gaming process that includes three steps: dynamic framing, strategy evaluation and execution planning. This process closely corresponds to the "stage-gate" processes (e.g.

opportunity identification, alternative selection, project engineering and execution) that many businesses have adopted for their strategic and major project decision making.

The middle third of the book explores each step in the strategic gaming process in detail using game trees that incorporate uncertainties and private information as well as 2X2 game matrices, tornado diagrams and other tools. Examples include sequential and simultaneous decisions, signaling games, mixed strategies and repeated games. The discussion of execution planning covers both the development of tactics to change the game and the construction of a dynamic roadmap that illustrates the interaction of the players during the execution of their strategies.

The final third of the book contains a series of specific examples, case studies of coordination, collaboration and competitive games that illustrate the benefit strategic gaming can bring to decision making.

I have read many books on game theory. They have been fascinating and informative; but after reading them I have been left with an unfilled gap on how to apply these concepts to business decisions. Game Theory for Business was written with the practitioner in mind. It is clear, readable and prepares the reader to apply basic game theory concepts to his or her decisions. If you are involved in analyzing or making strategic decisions where others' decisions and actions can have a critical impact on your success, I highly recommend you read this book. Read it today and improve your decisions tomorrow.