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Review of Barry J. Nalebuff and Adam N. Brandenburger, *Co-opetition 1. Revolutionary Mindset that Redefines Competition and Co-operation 2. The Game Theory Strategy that's Changing the Game of Business*

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Abstract

In this book, Brandenburger and Nalebuff use game theory to develop a set of guidelines that will "make it easier to explain the reasoning behind a proposed strategy." The games that they use as analogies do not involve sports with their zero-sum outcomes; instead, they consider a variety of games that allow for mutual benefit, as well as harm, for the players. They use the term co-opetition, which is consistent with their message that cooperation pays off in some situations, competition in others. They encourage readers to think about not only how to play the game, but also how to change the rules. Examination of these games leads them to make recommendations for managers, many of which are relevant to marketing managers. So, to the extent that a game is like a business, this book should be useful. My aims in reviewing the book are to ask: (1) Is it new? (2) Is it useful? and (3) Is it supported? The book has flaws, particularly in the area of supporting evidence, but it is an important book.

Disciplines

Marketing

Comments

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Co-opetition[1] by Adam M. Brandenburger and Barry J. Nalebuff (New York: Doubleday, 1996, 290 pages, $25 hardback; a detailed description of the content is provided on the Internet at http://mayet.som.yale.edu/coopetition)

Why Can't a Game Be More Like a Business?

In this book, Brandenburger and Nalebuff use game theory to develop a set of guidelines that will "make it easier to explain the reasoning behind a proposed strategy." The games that they use as analogies do not involve sports with their zero-sum outcomes; instead, they consider a variety of games that allow for mutual benefit, as well as harm, for the players. They use the term *co-opetition*, which is consistent with their message that cooperation pays off in some situations, competition in others. They encourage readers to think about not only how to play the game, but also how to change the rules. Examination of these games leads them to make recommendations for managers, many of which are relevant to marketing managers. So, to the extent that a game is like a business, this book should be useful.

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What's New: Old Wine in New Bottles?

According to the Nobel prize – winning economist Kenneth Arrow, Brandenburger and Nalebuff (B&N hereinafter) have produced an exciting new approach to business strategy. Is it new? Although B&N do not discuss the history or development of their ideas, I recognized most of them. When they discuss strategies for negotiated pricing, I found some are covered in Nagle (1987), often under different names. For example, B&N refer to "discounted value" for a concept that Nagle refers to as the "pricing of bundled products." As a result, it is not clear what is new.

They present many things as if they were new insights. By creating new names and clever slogans for strategies (e.g., "E.T.– the Wrong Call), B&N make it difficult to see where the ideas might have originated. It would have been useful to trace the development of ideas so that these ideas can be compared with what we currently know, and existing evidence can be examined.

They propose the term *complementors* to refer to organizations that sell products that enhance the value of another firm's products. Complementors can collaborate to enhance the value of their products to customers. Examples are companies that sell computer hardware collaborating with software companies and gas stations linking with fast-food companies. If you are like me, you are probably thinking, "Oh yeah, I knew that." And in presenting examples, B&N refer to alliances such those that General Motors made with Goodyear tires and Prest-0-Lite headlights in 1913. So though the term *complementors* is new, the concept is not. Although there has been a substantial increase in relationships among complementors in recent years, I agree with B&;N that managers do not think enough about potential complementors, how

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Helpful suggestions were provided by Wilfred Almadoss, Fred Collopy, Pete Fader, and Brian Wansink. Corrections and improvements were also made using suggestions by Adam Brandenburger and Barry Nalebuff, which is not to imply that they agreed with everything in this review. John Carstens, Jennifer Armstrong, and Dara Yang provided editorial support.

they should cooperate, and how to negotiate with them. For example, B&N refer to Citibank's failure to think about complementors when it introduced its automatic teller machine in 1977; B&N claim that it was only in 1991 that Citibank finally "woke up" to this possibility.

The *explicit* consideration of complementors is new to me. For almost three decades, I have taught students about the stakeholder approach to identifying objectives. When I have asked them to list possible stakeholders, they suggest many groups, such as employees, customers, suppliers, distributors, local community, and stockholders (along with some inappropriate groups such as competitors and government). However, no one has ever mentioned complementors, nor have students used this concept when solving cases. By naming complementors as a stakeholder group and including it on their checklist, B&N provide something new.

The book helped me to think through negotiation situations that I have not encountered. When B&N present situations, the solutions were not obvious to me. For example, which partner should go first in a Texas shoot-out to end a partnership (in which one partner states a price for its share of the partnership and the other must either buy or sell at that price)? Furthermore, I am not sure that it would have occurred to me to pay suppliers to make bids to me in situations in which competition is weak or that, as a supplier, I should be paid to make a bid to supply services (Chapter 4). Judging from their examples, such as Holland Sweetener's attempt to supplant NutraSweet as a supplier to Coke and Pepsi, these ideas did not occur to Holland Sweetener's managers, much to the regret of their shareholders and employees. In that case, in mounting their challenge, Holland Sweetener put Coke and Pepsi in a stronger bargaining position with NutraSweet, but NutraSweet kept the contract.

Much of the advice is overly general. It seems that they are saying "think clearly" or "think about what can go wrong." They offer a useful framework that they call PARTS: Player (think about who is playing and who should be playing the game), Added values (what does each player bring to the game?), Rules (what are the rules, and can they be changed?), Tactics (what are some alternate tactics?), and Scope (can the game be expanded?). They devote a chapter to each of these topics.

They do get more operational with their "value net." But when they use it to analyze a university, they produce what I believe to be a traditional and misleading analysis (pp. 23 – 27): "Students as customers? . . . It sounds provocative, even heretical. Yet many universities need to start thinking this way" (p. 268). This is hardly a new idea. By itself, it might even be a dangerous idea. Schools that have adopted this idea have encountered difficulties with respect to learning as a goal, because they assume that the faculty members produce learning in the students. Students can be considered as consumers, but they are also producers of their own learning. The faculty are producers of knowledge, and, though this can contribute to learning, it does not ensure that students learn. Different assumptions about who is the producer of learning lead to radically different conclusions about how to improve the system.

B&N's applications of game theory are generally convincing and insightful. Certainly they reveal aspects of some problems I had not considered. For example, they use game theory to explain programs for increasing brand loyalty, such as the American Airlines frequent flyer program. However, I wonder about the usefulness of some of their advice, such as, "Do not say thank you [to your customer) too quickly, or too slowly" (p. 140). Would I be able to apply these or other rules successfully?

B&N's use of game theory leads them to some conclusions that run counter to popular thinking among marketing managers. For example, they suggest an underlying principle that firms should treat their own customers better than they treat their rival's customers (p. 190). Many firms violate this when they provide incentives to win customers away from other firms. For example, new subscribers to a service are often given lower rates than those given to loyal subscribers. Therefore, I expect that much of the discussion ,in this book will be new to managers.

So, though most of this seems to be old wine, it is fine wine.

Is It Useful: Will It Improve Decision Making?

The basic argument is that by using game theory, managers can generate strategies, then select the best one. Although I am not aware of any evidence, I believe that game theory might help in the search for alternate strategies. (I also can imagine other ways to do this, such as by brainstorming using a diverse group of experts.) However, to select the best strategy, sometimes a manager would need to forecast the outcomes. I am skeptical that game theory is of value here because it is difficult to match real situ~tions with games. Therefore, it will be difficult to forecast what will happen when taking a strategy that is successful in a game and using it in an actual situation.

B&N (p. 52) suggest, "To anticipate other players' reactions to your actions, you have to put yourself in their shoes and imagine how they'll play the game. You look forward into the game and then reason backwards to figure out which initial move will lead you to where you want to end up." Again, though this advice seems useful as a way of *identifying* possible strategies, I doubt that it is useful for *predicting* what will happen when a manager adopts a new strategy in real life. The problem is that a manager must predict not only the initial reaction from another party, but also his or her response, and then the other's response, and so on. It is a daunting matter to think through all the possibilities, especially when the rules of the game are not always clear and it is possible to change the rules.

B&N recognize these problems, and they suggest (p. 63) that the manager "ask a colleague to iole-play by stepping into that player's shoes." Instead, I suggest the use of roleplaying simulations. This would first require an accurate written description of the actual situation (not of a game that a manager believes to be representative of the situation). Next, select people who can play the roles. Props can help to increase the realism of the role playing. An administrator would try to ensure that the players do not step outside their roles and ask that they improvise as needed. Role playing would then simulate the situation to determine what agreement the players reach. Role playing for a given strategy could be conducted numerous times using different subjects to determine the likelihood of various outcomes.

Therefore, whereas B&N suggest that managers think about the roles of the parties involved, I suggest that they simulate the situation. This has been tested. Armstrong and Hutcherson (1989) compare role-playing outcomes with those predicted by subjects who were asked simply to think about the problem. The study examined eight conflict situations in experiments with 226 role-playing sessions. Role playing was superior to "thinking" in seven of the situations, and there was one tie. Averaging across the eight situations, role playing correctly predicted outcomes for 63.6% of the cases. In contrast, thinking was correct for only 18.2% of the predictions. When I asked other subjects to think things through and I also gave them the role descriptions, they were no rnore accurate than those who did not have the role descriptions (Armstrong 1987). The important aspect of role playing, then, is that it goes beyond thinking by simulating the situation.

I would be happy to challenge game theorists to predict the outcomes of conflict or negotiation situations. My bet is that role playing will provide more accurate predictions than can be obtained from thinking by the best game theorists. Furthermore, role playing does not require that the managers have any knowledge of game theory. Perhaps role playing could have been used to prevent adoption of the detrimental portions of the Federal Election Campaign Act relevant to television advertising rates for political campaigns (p. 163) or the unfortunate pricing rules in the federal government's Medicare reimbursement rules (p. 164).

In summary, I expect that B&N's recommendations will lead to a broader and more creative consideration of strategies than might occur using current practice. But it will be difficult to predict the effects of various strategies by using game theory.

Is There Support: Does Saying So Make it So?

B&N state (p. 8), "We're skeptics, and we want you to be skeptical too. We don't want you to take what we say on trust." I am happy to oblige because I believe that managers should examine evidence before making major changes in their procedures.

Is it valid to generalize from games? To demonstrate that their recommendations are useful, they first would have to show that it is possible to match the real situation to the relevant game. The match should be close enough that useful predictions can be made. I have reviewed the literature on the effectiveness of game theory for predictions and have been unable to find any evidence to directly support the belief that game theory would aid predictive ability.

Even if the games can represent real-world situations, it would be necessary to show that the recommendations could be used properly by managers. B&N do not attempt this. Instead, they present cases of executives who made what turned out to be poor decisions. The implication is that better decisions would have been made had their recommendations been followed. But, for example, how do we know that analysts using B&N's advice would have helped IBM to make better decisions with respect to Microsoft and Intel (pp. 154 – 56)?

I suspect that the major contribution of game theory to business strategy is to suggest strategies that are otherwise not obvious. Here again, B&N do not discuss empirical research findings. They support their conclusions with anecdotes of business successes and fail.ures, an approach that I have always regarded as fallacious because generalizations should not be made from a singie example.

Although B&N ignore empirical research,[2]~ on those occasions when I was aware of relevant research, their recommendations usually are consistent with the research findings. For example, B&N suggest (p. 8) that the goal of a firm should be "to do well for yourself." They suggest that it is unwise for a firm to adopt a goal to beat its competitors. This advice might seem old hat to economists, for whom profit maximizing is widely accepted, however, in practice, managers often adopt the goal "to beat their competitors" (Anterasian and Graham 1996). Much evidence supports B&N's advice (Armstrong and Coliopy l996). Here is an another example: B &N examine strategies used by Nintendo for selling computer games. This strategy also has been analyzed from a psychological perspective by Cialdini (1984), who reports on empirical studies about the use of scarcity to sell products. Although B&N make no reference to this literature, their advice is consistent.

There were only a few occasions when my knowledge of evidence failed to support their recommendations. Consider the following advice they provide (p. 151): "Compete aggressively for volume so that competitors can't follow you down the learning curve." Is this consistent with their goal to do the best for themselves? What about their advice on page 37: "What matters is not whether others win – it is a fact of life that they sometimes will – but whether you win." (I suspect they meant to say "profit" instead of "win.") Why not study price elasticity and then forecast the effects of alternative strategies in an effort to identify the most profitable strategy? This could lead a firm to determine whether it is useful to increase production. In other words, it is not clear that this advice contributes to good decision making, and it is easy to see how a firm could be misled into trying to beat its competitors, a goal that the authors suggest avoiding.

It is hoped that *Co-opetition* will stimulate researchers to test B&N's recommendations. I suspect that some recommendations will be useful and others will be misused. Right now, all we have is their word: "Thinking in terms of competition and cooperation – thinking co-opetition – has already benefited numerous businesses." This had the ring of an Infomercial. B&N credit the National Science Foundation

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[2] They do mention Axelrod's (l984) empirical research on game theory, but it receives only two lines in a footnote.

and the Pew, Rhodes, and Sloan foundations with supporting their research. Perhaps these foundations would be willing to support researchers to *test* these ideas.

The issues can be tested. For example, which is superior: (1) thinking about the problem using games as analogies, (2) using formal decision-aiding procedures that are widely available and have been shown to be effective, or (3) unaided management thinking? For example, we could ask independent teams to write up two-page analyses and recommendations on the basis of advice from B&N's book. Other teams might be asked to do the same without using the book, but using formal procedures such as brainstorming to find at least five ways to improve return on investment, then using role playing to predict the outcomes, and finaily making quantitative estimates of the profitability of different alternatives. Still other teams might analyze the problem as they normally do (perhaps by asking untested and misleading questions such as, "What is our mission?"). Does use of the book lead different groups to the same recommendation? Does it differ from the recommendations by those using formal procedures? Which recommendations are best? I would expect those using existing formal procedures to do better than those using game analogies, and those following current practice to do worse. In addition, I expect that conducting such "experiments" within companies would, in itself, lead to improvements in decision making.

So will the people who use the concepts in this book make better decisions than will those who are armed only with a traditional economics course or another book or "street smarts"? We have to trust the authors, even though they tell us not to.

Discussion

I am generally skeptical when authors base their advice on their opinions. Opinion-based procedures, such as the BCG (Boston Consulting Group) matrix and the experience curve, are likely to produce less profitable decisions. *Co-opetition* is different. These, opinions are based on a well-argued analogies games and business, and they lead to useful recommendations.

At least, their recommendations *seemed* useful to me. B&N would describe a situation and then use game theory to explain why things turned out as they did. Their discussion provided insight about the problem. At the time I was working en this review, my wife and I visited a photographic exhibit by Harry Callahan. Callahan took photographs in many cities that we have visited. We looked at photographs such as the one of a person in Chieago and concluded that "he certainly captured the spirit of Chicago." Then we decided not to read the caption first. In subsequent photographs, we could not figure out what city was being captured. Was my reading of *Co-opetition* similarly deceptive?

Co-opetition is aimed primarily at practitioners. It could provide supplementary reading in strategy courses as well as courses on pricing or negotiation. (Educators might want to use some of the 60 Powerpoint overheads provided on the coopetition web site.) The descriptions of how executives at major corporations occasionally make what seem, in retrospect, such poor decisions, might lead students to take the advice seriously. Their games would serve as useful exercises in classes to illustrate various decision-making procedures.

The writing is excellent if, like me, the reader appreciates the style of the *Wall Street Journal*. However, the overall organization is difficult to follow, the index could have been better (e.g., where is Axelrod?), and the footnotes are distracting.[3]

[3] Pete Fader, a marketing professor at The Wharton School and a self-proclaimed footnote expert states, "Don't you hate it when you go through the effort to check a footnote, only to find that it's just a useless quote from one of the author's colleagues?"

Conclusion

The strength of this book is that it offers fresh and valuable perspectives on management. B&N summarize their advice in a checklist (pp. 262 – 63) that should help managers to generate strategies. More important, the book can help managers to develop strategies in which cooperation could be profitable and to identify situations in which competition could be unprofitable. The book is likely to make a major contribution to management thinking, and I have already recommended it to students and faculty. I expect that it will be read widely in the business community.

Although I like the message, I remain skeptical. It is difficult to match games to real situations. We do not know whether game theory, when compared with formal idea generation procedures, will improve the search for alternative solutions. We have little evidence that game theory can substantially improve the way managers think about problems. Finally, we lack evidence that game theory can improve predictions of the outcomes of alternative strategies. So handle with care. After all, games are not exactly like businesses.

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