

FAST COMPANY

You Got Game Theory!

It was all such fun until we realized that no business really uses game theory.

From: [Issue 91](#) | February 2005 | Page 32 **By:** Martin Kihn **Illustrations by:** Alison Seiffer

Game theory is the fun-sounding branch of economics introduced in the 1940s by Hungarian genius John von Neumann and developed in the 1950s by Princeton's John Nash, subject of the 2001 Oscar-winning film *A Beautiful Mind*.

Over the years, the status of game theory -- which describes the interactions of self-interested parties such as poker players and deal makers -- soared, and its insights were applied to fields as far-reaching as evolution, auctions, even counterterrorism. Playing along, we here at the CDU decided to find out just how much court time game theory gets in the big game of business. After all, it has been taught to almost every one of the some 2.5 million MBAs and economists in the United States alone. Surely, we thought, it would be a slam dunk to turn up dozens of examples of game theory applied in the real world.

Adopting our usual rigorous methodology, we set the following parameters. To count, an example must:

1. be an actual business situation where somebody used the insights of game theory;
2. have occurred within the past five years; and
3. involve real, live, actual companies -- not governments, nonprofit organizations, or Russell Crowe.

First, we scoured the literature. We selected a relevant portfolio of 40 publications and submitted our queries. We tried again. And again. And we found . . . *nothing*. There were plenty of mentions of government spectrum auctions, and *A Beautiful Mind* came up hundreds of times. Not quite what we had in mind.

Perhaps, we thought, the media just doesn't get it. Undaunted, we assembled a panel of 30 respected game theorists around the world, and we sent them a survey asking, "Can you think of any examples of real, live companies that have consciously applied game-theoretical concepts to a real business problem?"

The response was . . . a deafening chorus of head scratching.

"The short answer is, I don't know," said David Levine of UCLA. "Let me think about this," replied MIT's Muhamet Yildiz.

Others on our expert panel, while not offering up any actual, you know, *examples*, were willing to speculate on why they couldn't. Traditional game theory "prescribes a lot of advice that does not actually seem to work," admitted Paul Bartha of the University of British Columbia. Why not? Maybe because "the sorts of situations that would allow the application of formal methods are so simple that people can

understand them without much help," suggested the University of Minnesota's Andy McLennan.

Does that mean game theory is just, um, common sense? "Game theory gives you a nice systematic way to think about strategy, but it's not magic," agreed Hal Varian, an economist at the University of California at Berkeley and coauthor of the bestselling *Information Rules* (Harvard Business School Press, 1999). Or, as MIT's David McAdams put it, "Game theory is really a frame of mind and, once you have it, you see it everywhere."

Everywhere, perhaps, and nowhere.

In the end, none of our experts had a concrete example. But many offered the same advice: "Ask Preston McAfee" -- an economist at the California Institute of Technology and perhaps the country's foremost working game theorist (he designed that government spectrum auction). He was more encouraging: "There are lots of examples," he emailed, agreeing to an interview.

We reached the professor in his office at Caltech. "So," we asked, "what are all these examples of game theory applied to real life?" There was a silence on the line. "Well," he said, "a lot of companies hired game theorists to prepare for those spectrum auctions." Okay -- but what about nongovernment auction situations? "I don't know of any companies that employ pure game theorists -- but maybe they're keeping it quiet."

Very, very quiet.

Martin Kihn is author of *House of Lies: How Management Consultants Steal Your Watch and Then Tell You the Time* (Warner Books, March 2005). For the CDU's take on game theory and Shaquille O'Neal, go to www.fastcompany.com/keyword/cdu91.



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