

MORE GAME THEORY IN ACTION

by [Steve Brown](#)

We received lots of comments regarding the use of game theory in banking from yesterday's post. Given the interest, we wanted to highlight a recent development around the changing face of game theory and how it can be utilized to solve problems.

Last week, the Pentagon's Defense Advanced Research Projects Agency ("DARPA"), issued a challenge, in an effort to tap the power of the internet for problem solving. The game was this: For a \$40k prize, who could be the first to successfully locate 10 large red weather balloons hidden at secret locations across the US within 9 days.

More than 4k groups entered and despite the fact that organizers had projected it was going to take at least 5 days to solve this problem, a 5-person group from MIT did so in less than 9 hours. How they did it gives us several instructive lessons.

First, in text book game theory, the MIT team let the game dictate the strategy. To solve the problem, MIT correctly reasoned that they needed as much "airspace" covered as possible. The traditional way to solve the problem might have been to download current satellite images or work with pilots for flyovers. These tactics would be expensive and time consuming, as pouring over millions of aerial images would take months. The better method, they reasoned, was to get as many people as they could to take a look outside. In order to do this, they designed a game structure that provided the best incentive within the boundaries of the game.

Most teams competing for the prize simply asked for help, while others offered a single prize for the correct balloon coordinates. MIT, however, realized that by offering prizes just for signing people up, a portion of that population (such as those outside of the US) would focus on specifically that, instead of spending energy actually looking for the weather balloons. Both tasks were important, so MIT offered not only a \$2k monetary prize for seeing a balloon and inputting its coordinates, but paid another \$1k for the person that registered the person that saw the balloon, \$500 to the person that registered the person that registered the person who saw the balloon and \$250 for the next level down, \$125 for the level after that and so on. In this manner, everyone in the chain was properly incented to sign up as many people to the website as possible.

The next step was to build a website to capture this information and to then to quickly get the word out. To get the word out fast, MIT leveraged social media (Twitter, Facebook, etc.) to "crowdsource" in a self-propagating fashion. Literally, within hours, millions of people were outside their house, going on hikes, looking for red balloons in airplanes, on bikes and rummaging around the U.S. to try to help solve the puzzle. By the end of the 8th hour, all 10 balloons were correctly identified (<https://networkchallenge.darpa.mil/BalloonMap.aspx>).

That is a long-winded way to get to banking, but it was needed to help set the process. For bankers, this points out many things including: the recursive (a procedure that repeats itself indefinitely) power of social networking. Traditional e-mail and text messaging pale in comparison to the effectiveness of a one-to-many communication channel. Keep in mind that this lesson is beyond viral marketing. Participants not only had to receive the message, but had to actively partake in an activity

and return a work-product. In addition, by designing the right game, MIT placed the probabilities of success in their favor. Aligning the proper incentives, giving people a reason to participate and making the activity easy are also some of the takeaways here.

These lessons can be utilized by bankers to design referral programs, roll out new products and gather deposits. At our upcoming Executive Management Conference (May 2-5 <http://www.pcbb.com/conference.html>), we will be discussing the utilization of both game theory and recursive structuring to produce products and marketing that are fun, exciting and highly effective. Until then, consider the lessons learned and spread the word you heard about them in the Banc Investment Daily.

BANK NEWS

Modified TARP?

Bankers were abuzz with news that the White House is considering giving community banks access to another round of TARP capital that would lack most of the current restrictions (as long as the bank used the capital to lend to small businesses). More information forthcoming.

Laws & Loopholes

The House is proposing that thrift deposits be included when considering whether a merger breaks federal restrictions on any one bank holding (more than 10% of all US deposits). Had this been the case in 2008, the BofA/Countrywide merger and JPMorgan/Wamu merger would not have occurred.

Goldman

Following outcry from the public on pay packages, the firm has decided to withhold cash bonuses this year for its top 30 management executives.

IT Budgets

As banks get set to approve IT budgets for 2010, we note Goldman Sachs estimates those budgets as a percent of revenue will be 1.5%, down 10% from this year. Meanwhile, Forrester Research projects an 8% increase for 2010.

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