

NATIONAL SECURITY

'Terrorism Futures' Could Have a Future, Experts Say

It was tasteless, even for an agency not known for its tact. FutureMAP, a Pentagon project to encourage gambling about the likelihood of events such as terrorist attacks, drew withering criticism from appalled legislators. The Defense Advanced Research Projects Agency (DARPA) scuppered the plan last week just a day after the storm of outrage broke. Yet many scientists and economists see the project as a clever scheme to harness the expertise of hundreds or thousands of people, essentially creating a social-science supercomputer out of flesh rather than silicon. And many fear that the worthwhile ideas behind "information markets" such as the Pentagon project will be lost in the political fallout.

"Information markets in general have a PR problem" because they are popularly viewed as little more than gambling, says Michael Abramowicz, a law professor at George Mason University in Fairfax, Virginia, who studies information markets. "They sound crazy." Yet, he adds, the idea is very powerful.

In 1776, English economist Adam Smith noted that a market made up of individuals, each acting in his own self-interest, tends to behave in a manner that's wiser and more farsighted than the individuals themselves. It is as if an occult "invisible hand" guides investors to make the right decisions, he suggested.

In the past half-century or so, economists have built upon this idea with the "efficient market hypothesis." "In essence, it says that market prices [take] almost all the things you can think of into account," says Robin Hanson, an economist at George Mason. The cost of an object on the market, whether it's a stock certificate or a chunk of silver or a prediction of future sales of orange juice, tends to reflect all the information available about the stock, or silver, or orange juice. In that case, researchers reasoned, an efficient way to harness all the information available to a group of people is to set them up in an artificial market. And, in fact, this is precisely what economists have been doing for years—very successfully.

Since 1988, the University of Iowa's Henry B. Tippie College of Business has been predicting the outcomes of elections

with a futures market. About 7500 participants around the globe buy and sell shares whose values depend on the percentage of the popular vote each candidate gets. As election night approaches, the prices of those shares become a very accurate predictor of who will win. "Our average error is about 2.5%," says economist Robert Forsythe of the University of Iowa in Iowa City. "We typically do better than polls." The Iowa research group has also set up markets that accurately predict the box office returns of movies.

"In the end, these markets aren't going to magically get things correct," says Abramowicz. Yet, theoretically, information markets tend to be self-correcting; knowl-

what a bushel of corn is," he says. And a good measure of political stability would take into account factors such as suicide bombings, political assassinations, and unrest. "To test, say, whether the Mideast road map is going well, you trade in specific event securities that are correlated to the road map's going well," says Polk. "You can have one on whether Hamas joins the Palestinian Authority's government structure, or how many suicide bombings there are inside the green line." So speculating on political stability is, implicitly, placing money on whether events—some regrettable—will occur. "It looks like it's in bad taste, but intelligence, by its nature, is in bad taste," says Hanson. "You pay people to tell you bad things and sometimes to do bad things. Any market dealing with intelligence is going to be in poor taste; that's unavoidable."

When DARPA's project hit the news on 28 July, the outrage was so intense that DARPA killed FutureMAP a day later. Hanson and Net Exchange lost their grant, driving Net Exchange out of the information markets business, at least for intelligence. "Unless it comes with a pile of money and an extra-special media shield, I'm not going back," says Polk.

Others are a little more optimistic. Neoteric Technologies in Huntsville, Alabama, lost a \$750,000

FutureMAP grant, but its vice president, William Adkins, still hopes that the Department of Defense will find use for information markets. His company is involved in a project that will use a market to measure the progress of a Pentagon weapons project. "It'll give evidence whether the project will be on time or whether the program manager is whistling in the dark," says Adkins, who notes that the market could break bad news to officials without whistleblowers having to risk their careers. Adkins has also been working on a market of epidemiologists that he hopes might give early warning of an epidemic, such as a resurgence of SARS.

Despite the promise of information markets, the handling of FutureMAP has damaged the field, says Hanson. "It's a setback," he says. "I think it's a promising enough idea that it will win out eventually, but in economics, it may take 50 years."

—CHARLES SEIFE

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Market forecast? Although recent plans died amid controversy, letting speculators trade shares in political unrest, social disorder, and terrorism might give analysts a powerful new way to extract information.

edgeable people make money and increase their standing in the market, while clueless people lose their money and cease to have any influence.

Launched by DARPA in 2001, FutureMAP attempted to apply such information markets to national security matters by funding a number of research programs to test the idea. "Our markets were set up primarily as a research tool, not to predict but to see how well markets like this predict," says Hanson, who, along with the San Diego, California-based company Net Exchange, received two grants totaling \$850,000 to set up a prototype market designed to predict future economic, military, and political conditions in Middle Eastern countries.

That is where the taste issue arose. To work properly, a market has to quantify what it's trading in, says Charles Polk, president of Net Exchange. "Nobody's going to trade in bushels of corn if you can't define