Researchers study hedge fund model for complex societal problems
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A hedge fund designed to pool money together for the public good could tackle a niche of problems that governments, non-profit organizations and for-profit companies all struggle with solving, according to Penn State researchers.

In a study, a pair of Smeal College of Business researchers outlined a hedge fund model that features an ever-growing prize and patent repository. They said the money raised through the hedge fund—an actively managed investment pool—could then be aimed at solving problems that have broad societal value, such as curing diseases and tackling environmental challenges.

The public good-oriented hedge fund idea goes to the heart of a vexing problem, said John Liechty, professor of marketing and an affiliate of the Institute for Computational and Data Sciences. Non-profits are usually restricted to smaller budgets to solve problems and governments can be hampered by political inefficiencies, said Liechty. In contrast, for-profit companies are adept at managing large sums of money for problems that can earn money over long periods of time, he added.

“There are certain classes of problems that occur that the businesses won't tackle, traditionally, because they can't formulate the expected return,” said Liechty. “The question for me was: How do you organize capital to actually try to solve those really hard problems? In some sense, it's easy to organize capital to go help your neighbor, for example because the problem is small, but we have some problems that are really hard, like how do we get a group of really smart, talented, committed people to dedicate a decade of their lives or more to potentially solving these really big problems. That's not easy to do.”

In their proposal to address this resource gap, the researchers suggest a crowdfunding—or crowdsourcing—approach that would create an ever-growing monetary prize to attract that necessary talent for solving a problem. Crowdfunding is a well-established method for people to pool money or resources together.

Prioritizing projects

Crowdfunding would do more than just raise money—the approach can also help raise awareness and better prioritize projects, according to Stefan Wuyts, professor of marketing, Smeal College of Business and director of the Institute for the Study of Business Markets.

“There are certain problems that will not be addressed if things are left on their own and those are problems that are not just sufficiently attractive economically, but also problems with enormous uncertainty, like finding a cure for a disease,” said Wuyts. “When you crowdfund and crowdsource the solution to problems and you get funding from the larger crowd, then society is essentially deciding on what are the important problems to tackle. What's more, since the hedge fund can grow organically over time, it is not necessary to determine
beforehand how much it should cost, which is another question that we do not have the answer to advise because of that uncertainty."

The model allows people to donate money to the hedge fund, whose fund managers can then invest that money in a range of assets, similar to an established trust fund. People sympathetic to the cause, but who do not want to invest directly, could have their money managed by the hedge fund. The management fees from that fund, then, could be donated back to the main fund.

A patent repository would serve as the legal structure to share intellectual property that is being used to target a problem, such as a chemical compound to treat or cure a disease. The repository would also ensure that a person or team whose ideas helped solve the problem—within the parameters set by the organizers—would be awarded the prize money.

The proposal would work best by focusing resources on a single problem, said the researchers.

"It wouldn't try to solve every problem," said Liechty. "This is an entity that has been set up for a special purpose, a particular problem, even if it is a global problem."

**Treat cystic fibrosis**

The search for a cure for cystic fibrosis, a progressive, genetic disease that causes persistent lung infections and limits the ability to breathe, is one example of how a grassroots' crowd-sourced effort could galvanize support and create new pathways to funding innovative treatments and solutions, according to the researchers, who report their findings in *SN Business & Economics*. It also shows the challenges these efforts face to be ultimately successful.

The researchers said that the Cystic Fibrosis Foundation invested more than $150 million to develop an FDA-approved treatment, which was then patented and sold to a pharmaceutical company. The treatment now costs patients about $300,000 each year, according to the researchers.

However, a grassroots-initiated study of another promising, but non-patentable oral approach for the condition, targets glutathione—GSH—levels in the patients' lungs. While the treatment has shown initial limited success, it has yet to receive funding for the necessary, but expensive, FDA approval process. The GSH treatment, if successful, would cost approximately $1,200 a year, the researchers added.

The researchers report that "The fact that the oral GSH approach—a potentially viable treatment—has no path to secure monopoly pricing nor offer academic prestige, has left it bereft of capital; this represents not only a market failure, but in our view, a philanthropic failure."

**A hedge fund for climate remediation?**

Beyond medical treatments, hedge funds could be created for other significant social and scientific challenges, said Wuyts.

"I think climate-related solutions might be interesting," said Wuyts. "A solution for climate change is too vague because it's too big of a problem, but it can be narrowed down. For example, to target alternative sources of energy that are as yet too uncertain to attract corporate or government funding, but that could possibly work."

Liechty suggested that finding legal solutions to the negative effects of the internet and social media are another category for hedge funds that potentially could serve the public good.

"You just have to think about hard problems that aren't being addressed," said Liechty.

The researchers said the next step for the project would be connecting with people and organizations who might be interested in partnering on the idea and identifying initial problems that could benefit from this approach.

"We've talked a lot about how to get this started, how to get the ball rolling," said Wuyts. "I agree that one way is to start small to make sure all the details are working and use that as a success story that could lead to addressing bigger and bigger
problems."

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