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Prizes: a winning strategy for innovation

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Back in the 18th century, the inability to accurately measure the longitude of a ship's position made transoceanic voyages high-risk ventures—for investors as well as sailors. The answer? In 1714, the British government offered a cash award of £20,000 to anyone who could develop a way of precisely determining a ship's longitude. Although most felt the answer would emerge from a leading astronomer, in an early example of crowd sourcing, the prize inspired the British clockmaker John Harrison to develop the marine chronometer, which by solving the problem greatly enhanced the safety of long-distance sea voyages.

Nearly 300 years later, prizes meant to spark solutions to complex problems are experiencing a renaissance. Philanthropists, corporations, and public agencies are using innovative prize designs to address an extraordinary array of challenges, from cleaning arsenic-laced water wells in India to reducing America's reliance on imported oil to improving the governance of African countries.

A prize is a familiar and easily understood concept that has a long history of inspiring beneficial change. Besides the 18th-century Longitude Prize, for example, there was the French government's food preservation prize that led to long-shelf life canned foods, and the 1858 Bréant Prize which, though never awarded, stimulated research into infectious diseases. As the patent and grant system matured, however, prizes seemed to become peripheral to innovation. Today, they are booming again. Since 2000, more than 60 prizes with a value greater than \$100,000 have debuted around the world, representing almost \$250 million in new prize money, and the total annual value of the large prizes that we tracked has more than tripled. At the same time, the use of prizes is shifting away from traditional areas, such as the arts and humanities, toward technologically complex ones—climate change, space travel, and biotechnology, to name just a few. Furthermore, innovative prize forms are emerging that have the power to build skills, strengthen networks, or even create markets.

This renaissance is driven by the simple fact that prizes work—almost by definition, since they pay only for desired results, not noble failures. The power of prizes to stimulate innovation comes from their ability to mobilize resources, intellectual as well as financial, and to draw attention, which can influence the perceptions and actions of potential solvers or society at large. These attributes are often very attractive to companies and philanthropists looking for unconventional ways to solve tough problems that have resisted traditional approaches.

Are there limits to what prizes can achieve? What are appropriate objectives for them and the best practices in their use? We took a close look and found some clear principles for creating effective prizes.

Exploiting the power of prizes to drive change

Traditionally, prizes have generated change in one of two ways. Recognition prizes seek to identify excellence—for instance, by recognizing specific individuals or innovations. In doing so, these prizes mark specific endeavors as valuable and encourage others to emulate the recipients or build on their innovations. Nobel prizes are the paradigm of this type. Inducement prizes, on the other hand, aim to spur specific innovations by focusing the energy of potential problem solvers on well-defined problems. NASA's Astronaut Glove Challenge, for example, specifies simple criteria for higher-performing spacesuit gloves. The Challenge is open to any innovator; and in fact the first winner was an unemployed engineer.

Both types of prizes use high-profile competitions to signal the seriousness of a problem and to attract innovators. They are powerful forces for change, but our research showed that prizes can be—and are—used much more expansively. We've identified at least four other types of prize for promoting change.

The first are exposition prizes, to which the Internet gives new potential. These prizes use a competition to highlight ideas or opportunities within a field. In England, the Royal Agricultural Society's 19th-century annual exhibition awarded medals for technological innovation—which frequently led to patents and further investment—are a good example. Today, prize sponsors use the Internet to achieve something similar. The Netherlands' PICNIC Green Challenge, for example, is an exhibition that highlights green products and services and enlists other organizations to help improve and scale the best ideas. Last year, the prize attracted over 200 entrants.

Network prizes build and strengthen communities by connecting funders and innovators, creating forums for interaction, and encouraging potential leaders. The Milken Family Foundation's Educator Awards, for example, recognize educational excellence, giving prizes of \$25,000 to America's top kindergarten through 12th-grade teachers, principals, and educational specialists. But that's only the beginning. Much of the impact of the awards comes from the way the foundation helps these winners build a community. . Each year, for instance, it assembles them at a national conference with policy and community leaders, and it perpetuates the group through the Milken Educator Network, whose members often serve on state committees or national commissions on education.

Just competing for a prize can improve the skills or behavior of entrants, so a few sponsors have made participation a primary objective, designing prizes for which the competitive process is at least as important as the outcome. The annual FIRST Robotics Competition, for example, puts tens of thousands of American high school students through a variety of robot building challenges, rewarding team spirit and professionalism as much as finished products. The focus on reinforcing motivation and

building team skills is partly responsible for the fact that participants are three times more likely than peers from similar backgrounds to major in engineering—and twice as likely to perform community service. We found participation prizes to be one of the least-used prize types, but there are enough good examples of successful ones to suggest that they should be used more often as a broader social-change strategy.

Finally, some recent prizes aim to go beyond promoting specific innovations. By emulating market incentives and exposing latent demand, these competitions attempt to stimulate an entire market. The \$10 million Ansari X PRIZE, awarded in 2004, is a celebrated example; through a competition to create reusable manned spacecraft, this market-building prize helped to spur the development of the private spaceflight industry. The 26 teams that competed invested more than \$100 million collectively in their efforts to win the prize, which helped mobilize new talent, drive down costs, and publicize the market's potential. Investors have since spent more than \$1.5 billion to develop the industry.

Emerging best practices

The traditional focus in creating a prize is the initial design—the topic, the judging criteria, and the reward—and the method for determining the winner. But our case studies and interviews with experts suggest that the most successful prize competitions place an equal emphasis on other elements, such as the broader change strategy, the competition itself, and post-award activities designed to enhance the impact of the prize.

Successful prize sponsors think strategically by investing significant resources in prize development long before announcing a purse. The \$10 million Progressive Automotive X PRIZE, for example, went through a year-long design phase that involved extensive input from outside experts and potential competitors. Ashoka's Changemakers competitions solicit input from hundreds of Ashoka fellows and past entrants to create a detailed "discovery framework" that defines the problems to be solved. In both cases, a generous investment of time and resources improves the odds that later investments, by the sponsors and the participants alike, will pay off in social benefits.

Much as prize sponsors can exploit the power of competition to drive innovation, they should also recognize the benefits of collaboration. A great deal of research suggests that collaboration can promote innovation substantially and some prizes actively encourage it. Changemakers, for example, encourages publication of submissions during the competition, generating conversations that often inspire participants to improve their entries before the competition closes.

Finally, much of the impact of a prize occurs after it is awarded. Prize sponsors who devote significant effort to post-prize activities consistently impressed us. Sponsors, for instance, can make their prizes part of a broader change strategy that also includes grants, contracts, or infrastructure investments to help institutionalize benefits or scale up innovations. They can transform their winners into a reservoir of human and intellectual capital for solving other vexing problems. And they can periodically review

the impact of a prize, learning lessons from their experience and applying the lessons in a way that improves the prize's effectiveness.

Strong outlook for prizes

We see a bright future for prizes. Nearly a third of the sponsors we surveyed plan to increase their prize activity. The new generation of philanthropists are embracing prizes, and the entry of new kinds of sponsors, such as governments, may further expand the resources available. Prizes are also likely to become more professional, as the emergence of full-time facilitators such as Innocentive and the X-PRIZE Foundation shows. Greater attention to best practices will make prizes more economically productive. And we expect to see a greater understanding of—and better solutions to—tricky challenges, such as the protection of intellectual property and the proliferation of prizes.

Are there limits to the effective use of prizes? Of course! Good ones require clear objectives, a rich field of potential problem solvers, and competitors willing to take risks. Prizes work best when a field isn't already flooded with funded research and the challenge is more to create a clever application of technology than a technology itself. These requirements, however, hardly limit the possibilities for the new prize forms and applications.

A prize is an old idea that remains surprisingly powerful today. We believe that more institutions should harness the power of this flexible, expressive instrument in their efforts to generate social and business benefits.

This piece was adapted from the McKinsey report *And the winner is...Capturing the promise of philanthropic prizes*, published in March 2009.

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