

Foreword

Offering monetary inducement prizes to stimulate and accelerate the achievement of scientific, engineering and technological goals has a celebrated lineage. In 1714, the British Government established the Longitude Prize to encourage the development of a feasible way to measure a ship's east-west position while at sea. Over the subsequent half-century, multiple recipients earned cash awards for inventions and methods that helped to solve the problem of determining longitude. In 1919, the \$25 000 Orteig Prize was announced for the first nonstop flight between New York and Paris. Advances in aviation technology aided Charles Lindbergh to win this prize in 1927. More recently, in 2004, Scaled Composites earned the \$10 million Ansari X Prize – set up in 1996 to reward the first non-governmental team to launch, and then re-launch within two weeks, a reusable space vehicle. The Ansari X Prize not only motivated the private exploration of space, with numerous teams worldwide vying to reach the goal, but also spurred renewed activity in using inducement prizes to address technological, medical, environmental, and other societal challenges. Today, in a growing number of countries, private foundations, government agencies, research organizations, and private companies are offering inducement prizes, ranging in value from the equivalent of a few thousand to many millions of dollars. Advocates suggest that inducement prizes accelerate innovation by promoting excitement, competition and entrepreneurship and by leveraging resources that typically greatly exceed the value of the prize itself. On the face of it, this is a compelling argument. Yet, notwithstanding the great increase of investment and attention now accorded to inducement prizes, there has been surprisingly little independent and robust assessment of the effectiveness and operations of such prizes. With impeccable timing, this book – *Technological Innovation and Prize Incentives* – by Luciano Kay, steps in to fill this gap.

In his book, Luciano Kay adds considerably to our understanding of innovation inducement prizes. He reviews the development and rediscovery of inducement prizes and then probes whether grand inducement prizes (also referred to as X prizes) actually result in additional or faster innovation and entrepreneurship. This is not a straightforward task: each prize has its own unique attributes and there are no readily available data

sets to crunch. Luciano Kay carefully addresses the conceptual and methodological challenges posed in assessing prize incentives and painstakingly accumulates evidence and assesses counter-factual explanations. Two completed inducement X prizes are examined (the Ansari X Prize and the Northrop Grumman Lunar Lander Challenge), alongside field work in the United States and other countries to investigate the currently ongoing Google Lunar X Prize. The book highlights the diversity of motivations – beyond monetary rewards – that drive prize contestants and looks into how problem-solving activities are undertaken not only to win the prize but also to achieve other goals. We learn that many intermediate outputs are attained on the way to developing solutions to the prize challenge. Comparisons are made with conventional innovation practices and how competing for prizes relates to other innovation processes and objectives. Towards the end of the book, insights and improvement recommendations are offered to policymakers, sponsors and others seeking to offer or participate in future inducement prize competitions.

On a personal level, I am both pleased and honored to be invited to write the foreword to this book. I have witnessed how Luciano Kay has evolved this project from its initial formulation, research design and field work through to journal publications and professional reports, and now to this exciting and perceptive book. Luciano Kay reminds us of the importance of independent questioning and robust empirical research in understanding and evaluating the effects of innovation approaches and policies and in improving their design and implementation. By carefully analyzing the links between prize incentives and technological innovation, Luciano Kay opens up new avenues for dialogue about inducement prizes and also contributes significantly to the broader domain of technology and innovation studies, management, and policy assessment.

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