

Howard

Howard is a web platform designed to publicize existing problems within private technical companies and, through competition, find people most capable of solving these problems.

Problem

Lesser-known problems are less likely to find good solutions.

Innovation has always been the key to success. However, even today, industries continue to focus their innovation efforts in a covert manner and are, therefore, cutting off infinitely many potentially brilliant solutions to their unique research problems.

The majority of research topics continue to be based on the assumptions that researchers make about an industry, as opposed to the industry sharing the problems it actually has. By design, industry will always be a step-ahead in knowing what problems are prevalent and worth prioritizing. Therefore, if industry drove the research, both sides would benefit.

How will Howard work?

Howard will create a communication channel between the research community and the Research & Development (R&D) sectors of private technical companies.

We will post the most relevant and interesting problems that companies have in the form of a challenge. Professionals and researchers in the field of a particular challenge may then submit proposals of an approach they would take and, based on their expertise in the subject, briefly

address resources their approach would require and estimates of the results.

We will have three models of competitions:

1. Competition for Knowledge:
company – receives fresh ideas
researchers – receive an interesting problem to work on
2. Competition for an Announced Prize:
company – receives solutions, implementations and prototypes
researchers – receive an interesting problem and monetary prize
3. Competition for Grant/Funding:
company – finds a perfect group to research its problem
researchers – get resources to pursue their passion

Who benefits from Howard?

Howard's approach would attract more people to learn about existing problems within industries and add an aspect of competition to the research community. To the industry, we provide a tool for finding the best solutions or teams who are most capable of finding a solution to specific problems. To the researchers, we provide a tool to expand the awareness of their field and, by proposing the best approach to an existing problem, either winning a monetary prize or receiving a grant to pursue their approach.

Current Market

Cumulative spending on the R&D sector within private companies of the United States topped at \$250 billion in 2014. That money is attributed to research within the companies for the purpose of innovation. However, we aim to prove that those resources can be used more efficiently by following Howard's approach of creating publically known challenges that are hosted by private companies.

A few companies are starting to realize that some problems can be solved by a variety of different approaches that can't all be sponsored. For example, Netflix Grand Challenge was a competition for the prize of \$1 million to optimize

Netflix movie suggestion algorithm. However, even after Netflix success, other companies have never successfully adopted such approach.

A few companies, such as Kaggle and MindSumo, use a similar competition-based approach for generating brilliant solutions to problems in data science and product design respectively. However, none offers a solution to find a perfectly tailored approach and team for existing problems in the field of Research & Development within private companies. Howard does.

Howard Strategy

Howard will initially aim to connect a local community of Boulder startups/companies with CU Boulder's College of Engineering. After proving that the model works on a small R&D sector and gaining interest from the research community, we plan to work with bigger companies and their R&D development problems. Howard will initially target the industries of Chemicals & Energy (\$10 billion on R&D in 2014), Computing & Electronics (72\$ billion) and Software & Internet (\$49 billion). Those industries are well developed in Boulder and have an excess of professionals in the area.

During our first stage, we will run only one challenge for an Announced Prize and spend all our efforts on marketing that challenge within research community. Such approach will focus all initial interest on one specific challenge and will compensate for the lack of awareness from researchers side.

After the first stage, we will be able to gain interest of researchers and provide example of a working model to companies. We will continue to keep the amount of ongoing challenges relatively small to have enough researchers participating in each challenge. Eventually, such model could be scaled to host more challenges at once as long as there is sufficient interest from researchers.

Risk Analysis

Howard project is subject to the following risks:

1. Researchers would like publicity, while companies sometimes would prefer privacy of their research
2. Not accurately measuring effectiveness of the proposed approaches
3. Initial lack of participation from companies
4. Initial lack of participation from researchers

To mitigate those risks, Howard will undertake a number of initiatives:

1. Find problems that do not require privacy of the problem.
2. Require research prediction for each competition entry and open feedback from non-competing professionals; Introduction of a peer-grading strategy into every proposal submission
3. Prove effectiveness to the industry by test-problem rounds.
4. Recognize the winners of test rounds.

Howard Financials

Howard addresses a two-party communication problem. Its solution does not require complex implementation strategy or significant monetary resources and instead depends entirely on how the community perceives it. Therefore, all our efforts will be on the positive experience of both the research community and R&D sectors of companies. We plan to charge companies 3% from their announced monetary prize or 0.5% from companies announced grant value.

Howard Team

Howard is currently only comprised of myself. I am a well-rounded CU Buff majoring in Computer Science/Applied Math. I am an experienced public speaker and have numerous connections with students, faculty, and local startups. Currently, I have multiple advisors who supplement my inexperience in business and marketing. Eventually, I plan to build out a team, in order to modernize the way today's research works.