

Chemical Vision2020

Challenge

Objective, Competition and Award

“[The National Academy of Science] recommends that Congress encourage federal agencies to experiment more extensively with inducement prize contests in science and technology - competitions designed to foster progress toward achievement of a specific objective by offering a named prize or award - as a complement to their existing portfolio of science and technology instruments.”

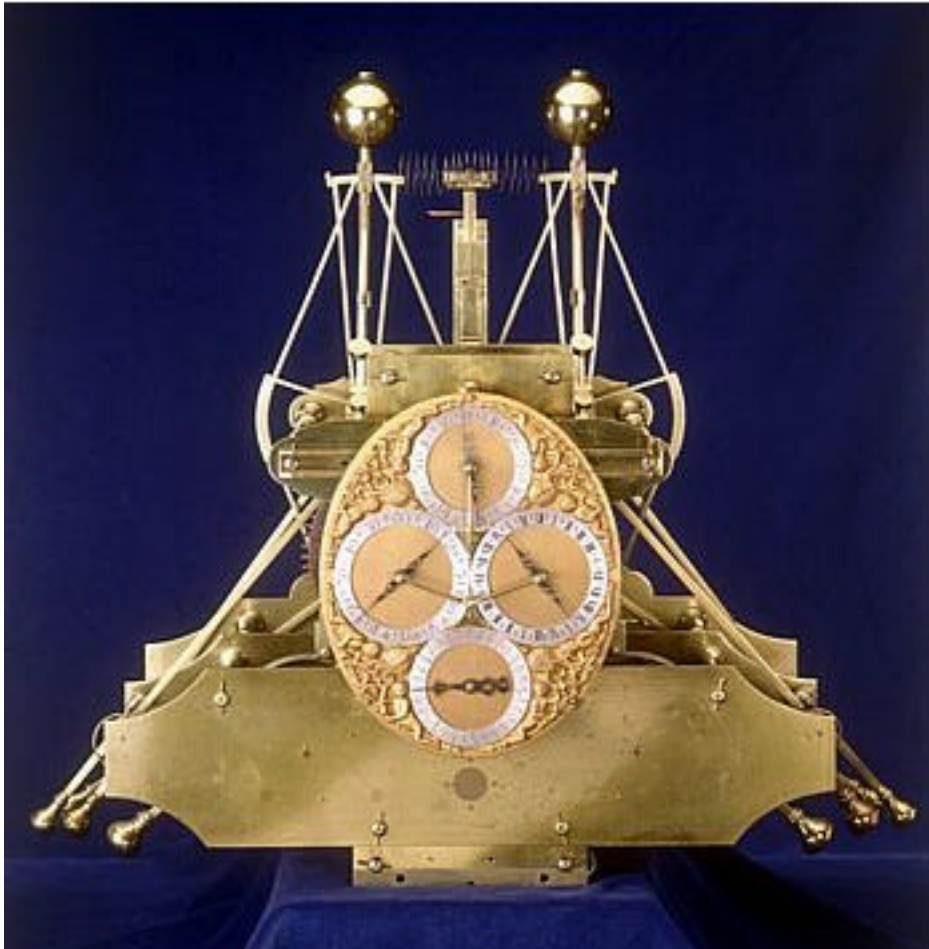
(April 1999 report)

A New Answer

Why is the challenge better than *de rigueur* R&D ?

- Not all solutions or products come from big R&D
(corporate or government)
- Wider input to solving a defined problem
 - Suppliers
 - Academia
 - Entrepreneurs
 - Inventors
 - Garage scientist
 - Cross industry
- Collateral benefits of publicity - Enhances public perception of the chemical industry

Objective, Competition and Award



In 1714, the British Government offered, by Act of Parliament, £20,000 for a solution which could provide longitude to within half-a-degree (2 minutes of time)

Recent Challenges

Monsanto \$1M Challenges - 1996 & 1997

Objective

Recovery technology for a specific process stream

Competition

Call for Proposals

Criteria for Selection

Economic merit

Applicability to other processes

Novelty of Solution

Award

\$500,000 to fund technology development

\$500,000 for successful demonstration

Recent Challenge

Monsanto Results

1996 Challenge

2300 Inquiries

183 Proposals

Three Technologies Developed, One Patent

1997 Challenge

200 Inquires

60 Proposals

New Business Formed

Two Entities Create a Challenge



- Champion R&D activities that service the entire chemical industry
- Recognizes that NAS recommendation is an opportunity to broaden R&D activities

US Department of Energy
Office of Industrial Technologies
realizes a need to follow the NAS
recommendation

Objective, Competition and Award Implementation

Defining the Objective

Defining the Competition

Defining the Award

Implementing the Challenge

The Challenge Objective

- Generate interest to broad segment of chemical industry
- A significant number of proposals
- Measurable metrics: proposals and results can be evaluated and compared

(Interest strong enough that companies would make an earnest effort to support the further development of the project)

Potential Challenge Topics

- **“Game Changing” new unit operation**
- **Significant energy cost savings for a major chemical**
- **Physical properties / computational tools**

Challenge Competition

Potential Steps

Pre-proposals	2 to 5 page technical proposal
Proposals	Full technical, financial and legal proposal
Phase 1	Proof of concept, demonstration
Phase 2	Full pilot / Full scale Demonstration

Challenge Award

What really makes the Challenge different from an R&D contract?

ADDITIONAL INCENTIVES

Challenge Incentives

Phase 1

Traditional Funding with Government

Phase 2

Additional Industry Incentives

Cash

Guaranteed Sale

Guaranteed Support

Guaranteed Path to Commercialization

Value of Incentives

Benefits to those who provide incentives

- R&D enhancement of your process
- Early Adoption - results and reports as work progresses
- Cost-Free/Low-Cost licensing of successful solution
- Valuable Publicity

Challenge Implementation

- Vision 2020 and OIT agree on a Challenge Problem
- Vision 2020 obtains incentive commitments
- Vision 2020 promotes Challenge
- Distinguished Industry Judges review pre-proposals
- Vision 2020 Letter of Merit
- USDOE-OIT issues RFP on Challenge Problem
(Letter of Merit significant factor in selection criteria)
- Distinguished Industry Judges review project results
- Vision 2020 coordinates Awards

Challenge

Discussion