Crowdsourcing Via Competitions/Prizes: History

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  • 1567: Longitude Prize (Spain)
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    • Pursued unsuccessfully by Galileo
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Anno Regni ANNAE REGINÆ Magnæ Britanniae, Franciae, & Hiberniae, DUODECIMO.

At the Parliament Summoned to be Held at Westminster, the Twelfth Day of November, Anno Dom. 1713. In the Twelfth Year of the Reign of our Sovereign Lady ANNE, by the Grace of God, of Great Britain, France, and Ireland, Queen, Defender of the Faith, &c.

And by several Writs of Prorogation Began and Holden on the Sixteenth Day of February, 1713. Being the First Session of this present Parliament.

LONDON,
Printed by John Busett, Printer to the Queens most Excellent Majesty, And by the Assigns of Thomas Newcomb, and Henry Hills, deceas'd. 1714.
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John Harrison
(commons.wikimedia.org/w/index.php?curid=318112)
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    • 1730-1761: John Harrison
    • 1773: £8,750 but no official award
Crowdsourcing Via Competitions/Prizes: History

- 1714: Meslay Prize (France)
  - 125,000 livres for prizes in celestial mechanics (even years) and naval science (odd years)
  - Administered by the French Academie des Sciences
  - 1753: David Bernoulli, steam power for propelling vessels, screw propeller
- 1734: Premium for an Invention to Stop the Progress of Fires (Sweden)
- 1747: Prize for Sugar from Native Plants (Dutch)
- 1756: Society for the Encouragement of Arts, Manufactures and Commerce Premium Award Scheme (British)
  - Awards for challenges in six areas: “Agriculture, Manufacture, Chemistry, Mechanics, Polite Arts (painting and the plastic arts), Colonies and Trade”
- 1757: oil that burned with improved smell
- 1759: improved wind-mill
- 1761: spinning machine
- 1761: improved saw mill
- 1763: English rhubarb
- 1768: English raised silk
- 1768: optical glass
- 1776: fishing nets
- 1777: measuring "the degrees of sweetness in saccharine substances"
- 1785: power loom
- 1788: first iron bridge
- 1787: hydraulic engine
- 1788: paint without white lead
- 1790: paper from raw vegetable sources
- 1793: glazing earthenware without lead
- 1796: apparatus "obviating the necessity of children being employed within flues."
Crowdsourcing Via Competitions/Prizes: History

• 1771: Académie de Besançon Prize for Substitute Foods (French)
  • Response to 1769 famine
  • Antoine-Augustin Parmentier: Potato

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  • 1791: solution discovered by Nicolas Leblanc
  • 1793: French Revolutionary, alkali factory confiscated
  • 1802: factory returned to Leblanc, but he didn’t have enough money to run it
  • 1806: Leblanc suicide
  • 1855: prize awarded to heirs
Crowdsourcing Via Competitions/Prizes: History

- 1785: The Magellanic Prize (US), American Philosophical Society
  - For major contributions in navigation, astronomy, or natural philosophy
  - Oldest U.S. medal for scientific achievement
  - Awarded 33 times

- 1789: South Shields Lifeboat Premium (British)
  - First lifeboat

- Napoleon
  - 1795: Food Preservation Prize
    - 1809: award to Nicolas François Appert, keys ideas for modern canning
  - 1801: Volta Prize for Electricity
    - Best applications of electric power
    - 1807: award to Sir Humphry Davy for work on electrolysis, despite England and France being at war
  - 1810: Sugar Beet Prize
  - 1810: Flax Spinning Machine

- 1869: Napoleon III Margarine Prize
Crowdsourcing Via Competitions/Prizes: History

- 1820: French Academy of Sciences Montyon Prizes (French)
  - Large awards in medicine
  - 1860: award to Louis Pasteur, subsidized much of best known work
- 1852: Guano Prize (British), Royal Agricultural Society of England
Crowdsourcing Via Competitions/Prizes: History

• 1861: The Confederate Prize for Inventions that Sink or Destroy Union Ships (US)
  • "new kind of armed vessel, or floating battery, or defense invention"
  • Led to the development of the submarine H.L. Hunley, first to sink an enemy ship

• 1863: Billiard Ball Prize (US)
  • $10,000 for a non-ivory billiard ball
  • Led to modern plastics industry

• 1900: Deutsch de la Meurthe prize (French)
  • First flying machine capable of a round trip between Parc St Cloud and Eiffel tower in 30 minutes
  • Completed in 29:30
  • Judges were not going to give the award because the mooring line wasn’t secured, but audience outcry changed their mind
Crowdsourcing Via Competitions/Prizes: More Recent History

• 1980: Fredkin Prize
  • First computer to beat the world chess champion
  • 1997: Awarded to IBM’s Deep Blue team

• 1990: Loebner Prize for Artificial Intelligence
  • Turing Test
  • Controversial

• 1991: RSA Factoring Challenge
  • List of numbers with two prime factors
  • Example: 1522605027922533360535618378132637429718068114961380688657908494580122963258952897654000350692006139
  • 1997: RSA Secret-Key Challenge, DES Challenges

• 1996: Ansari X Prize
  • $10,000,000
  • Launch a reusable manned spacecraft into space twice within two weeks
  • October 4, 2004: award to Tier One (funded by Paul Allen)
  • $100,000,000 invested across the various attempts
Crowdsourcing Via Competitions/Prizes: More Recent History

• 2000: Goldcorp Challenge
  • > $500,000 for locating new gold deposits
  • All online via 400 MG of FTP of data
  • Winners from Australia (Fractal Graphics/West Perth and Taylor Wall and Associates/Queensland).
  • Identified 110 sites, 50% previously unknown, worth more than $6 billion
Crowdsourcing Via Competitions/Prizes: More Recent History

• 2003-7: DARPA Grand Challenge
  • 2004:
    • $1M
    • 150 mile route
    • 22 entrants ⇒ 15 vehicles ⇒ 2 withdrawn, 1 flipped over at start, less than 1/3 of the way through only 3 left ⇒ 0 winners (longest: 7 miles)
  • 2005:
    • $2M
    • 132 mile route, 23 finalists ⇒ 22 went more than 7 miles ⇒ 5 finished ⇒ winner Stanford (6:53) (longest 12:51) (Cornell 20th place: hit guard rail, didn’t have backing up functionality)
  • 2007:
    • $3.5M
    • 60 mile “urban” course – traffic, signals, obstacles, etc., 53 entrants ⇒ 36 semifinalists ⇒ 11 finalists ⇒ 6 completed course (incl Team Cornell) ⇒ winner CMU (4:10) (Cornell/MIT car accident)
Crowdsourcing Via Competitions/Prizes: More Recent History

• 2006: Netflix prize
  • Training set: 100,480,507 ratings including 1,408,395 “probe” data
    • # votes/user: median 19, average 200
  • Quiz set: 1,408,342 ratings – they will give accuracy on
  • Test set: 1,408,342 ratings – they will give accuracy on
  • Target: improve over Netflix’s in-house system by 10%
  • Yearly progress prize for best performance over 1%
  • Had to publish code if you won
  • Once a team hits 10% there is a 30 day end period for all contestants
• 2007: BellKor (over 40,000 teams)
• 2008: BellKor + BigChaos
• 2009: BellKor + Pragmatic Theory + BigChaos
  • Dramatic finish
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Crowdsourcing Via Competitions/Prizes: More Recent History

• 2009: DARPA “Red Balloon” Network Challenge
  • Very different strategies
  • Lots of misinformation
Crowdsourcing Via Competitions/Prizes: More Recent History

• **2001:** TopCoder – programming competitions
  • Software products
  • Recruiting programmers
  • “Money, glory and cheap talk: analyzing strategic behavior of contestants in simultaneous crowdsourcing contests on TopCoder.com”. Archak N. In *Proceedings of the 19th international conference on world wide web 2010*

• **2010:** Kaggle – data analytics competitions
Competition Design Questions

• How much to give?
• Entry fee?
• Judging?