



Crowd-sourcing and open-engineering

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Agenda

- What is crowd-sourcing
- Examples of crowd-sourcing from other industries
- Crowd-sourcing in Engineering
- Limitations of crowd-sourcing
- Pointers on obtaining best results
- Benefits for manufacturing companies
- Why engineers like it
- Future of crowd-sourcing in engineering

What is crowd-sourcing

Crowdsourcing is a process that involves outsourcing tasks to a distributed group of people.

The difference between crowdsourcing and ordinary outsourcing is that a task or problem is outsourced to an undefined public rather than a specific body, such as paid employees.

wikipedia.org

Examples of crowd-sourcing from other industries:

Amazon Mechanical Turk (mturk.com)

Mechanical Turk is a marketplace for work.

We give businesses and developers access to an on-demand, scalable workforce. Workers select from thousands of tasks and work whenever it's convenient.

200,184 HITs available. [View them now.](#)

Make Money by working on HITs

HITs - *Human Intelligence Tasks* - are individual tasks that you work on. [Find HITs now.](#)

As a Mechanical Turk Worker you:

- Can work from home
- Choose your own work hours
- Get paid for doing good work



Get Results from Mechanical Turk Workers

Ask workers to complete HITs - *Human Intelligence Tasks* - and get results using Mechanical Turk. [Register Now](#)

As a Mechanical Turk Requester you:

- Have access to a global, on-demand, 24 x 7 workforce
- Get thousands of HITs completed in minutes
- Pay only when you're satisfied with the results



Examples of crowd-sourcing from other industries:

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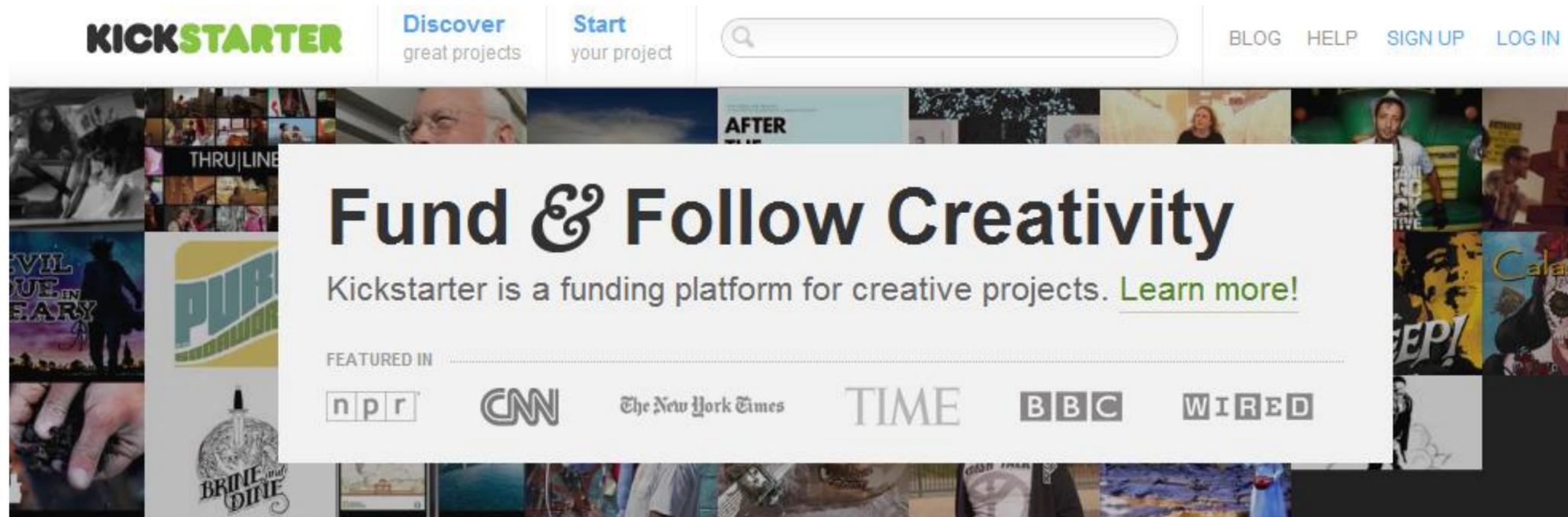
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Examples of crowd-sourcing from other industries:

Kickstarter.com



Staff Picks: Music

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- Comics
- Dance
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- Fashion
- Film & Video
- Food
- Games
- Music**
- Photography
- Publishing

Examples of crowd-sourcing from other industries:

Innocentive.com

The screenshot shows the Innocentive.com website. At the top, the logo "INNOCENTIVE" is on the left, and navigation links "1-855-CROWDNOW", "Contact Us", "Blog", "Register", and "Login" are on the right. Below this is a secondary navigation bar with "My IC", "Products/Services", "For Solvers", "Challenge Center", "Resources", and "About Us", along with a "Challenge Search" input field and a right arrow. The main content area features a large banner with the text "Looking to Expand Your Open Innovation Capability?" and a "Learn more »" button. Below the banner are three columns of benefits, each with an icon and a list of bullet points. At the bottom, there are three sections: "What is InnoCentive? Watch!" with a video player, "Resources" with a white paper titled "2012 State of Global Open Innovation", and "The Latest" with news and press items.

INNOCENTIVE
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My IC Products/Services For Solvers Challenge Center Resources About Us Challenge Search >>

Looking to Expand Your Open Innovation Capability?

[Learn more »](#)

- Lightbulb icon: Crowdfund Your Challenge Today**
 - Run a self-service Brainstorm Challenge
 - Tap our experts for a Premium Challenge
 - Build a transformative Grand Challenge
- Gears icon: Drive Growth & Return-On-Innovation**
 - Harness our cloud-based platform
 - Develop and train your teams
 - Build your open innovation strategy
- Group of people icon: Join Our Community of Problem Solvers**
 - Solve Challenges for cash awards
 - Find teammates and collaborate
 - Earn recognition and badges

What is InnoCentive? Watch!

INNOCENTIVE
OPEN INNOVATION
CROWD-SOURCING
PROBLEM SOLVING

Resources

2012 State of Global Open Innovation
Based on a global survey of 229 open innovation (OI) decision makers conducted by Forrester Research and sponsored by InnoCentive, this white paper provides an in-depth look into the OI landscape and key trends....
[Download White Paper](#)

The Latest

All In the News Events PR

News [What Can Tempt Researchers to Tackle a Tough Job? Try Offering a Prize](#)

Press [ACCION Partners with InnoCentive to Increase](#)

Crowd-sourcing in Engineering: **GrabCAD.com**

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2-Spool High Bypass Turbofan by Chris Shakal
Chris Shakal has 13 CAD models and has left 159 comments

Happening now — Babanatsas Theoharis (Teo) added a rendering to BevelGears



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Crowd-sourcing in engineering: Shelby design challenge



<http://grabcad.com/challenges/shelby-needs-your-input-on-their-latest-supercar-tuataras-interior>

Shelby design challenge: 46 entries

 <p>Tuatara Interior by John Huizingh Available in 3 versions ↓55 ↓15 ↓11</p>	 <p>SSC2atara by Sasank Gopinathan Available in 10 versions ↓134 ↓106 ↓21</p>
 <p>The SSC Challenge - v.2.1 by Mateusz Kliber Available in 4 versions ↓58 ↓10 ↓3</p>	 <p>Shelby Tuataras Concept Int... by Matt Perez Available in 2 versions ↓15 ↓9 ↓3</p>
 <p>Tuatara challenge by gee Available in 2 versions ↓32 ↓17 ↓13</p>	 <p>Tuatara interior 2 by John Huizingh Available in 2 versions ↓7 ↓9 ↓1</p>
 <p>Girl's point of view by Jenny Available in 2 versions ↓4 ↓8 ↓6</p>	 <p>Tuatara Interior 3 by John Huizingh Available in 4 versions ↓44 ↓28 ↓7</p>



[Jerod Shelby](#)

16 days ago

Nice advancements John. This is looking much better. I like the modification that you made to the tube feature across the dash. It flows with the lines of the car much better!

About [Jerod Shelby](#) — CAD models uploaded: 1 Comments left: 34



[Jerod Shelby](#)

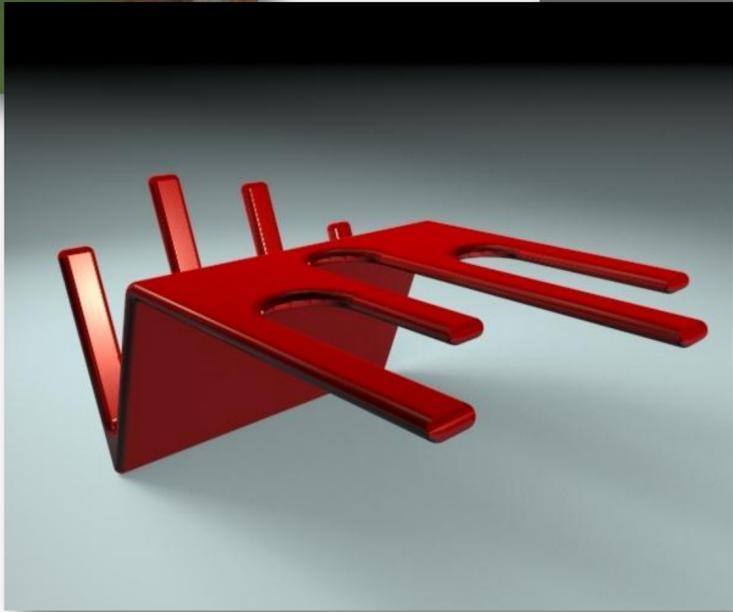
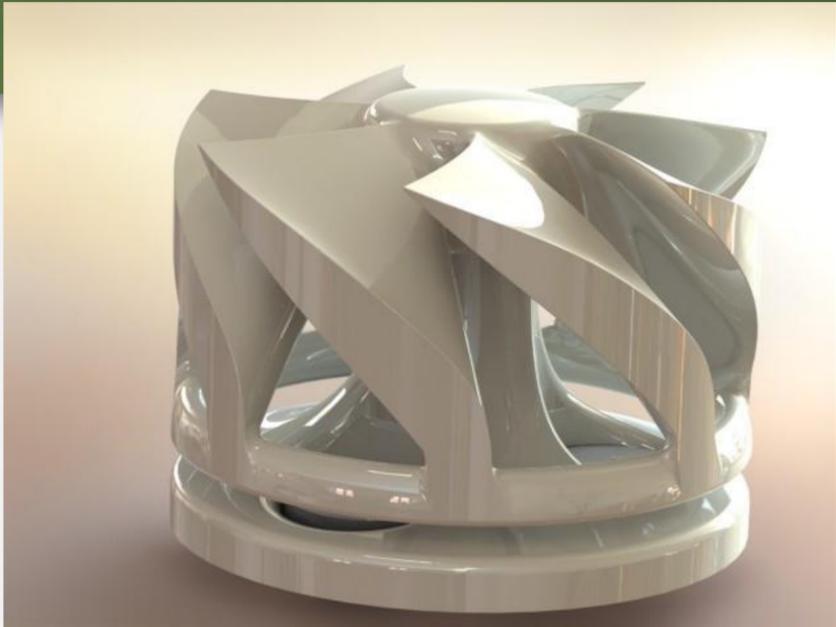
20 days ago

The rake and shape of your windshield looks about right. Although it does look to me like the whole windshield/glass roof needs to be moved forward on the cab about 6". The front base of the windshield where it meets the body is in front of the centerline of the front wheel. If you moved your same shaped glass roof forward about 6", I think you would be fine for conceptual purposes to continue your design. Thanks for verifying.

About [Jerod Shelby](#) — CAD models uploaded: 1 Comments left: 34

<http://grabcad.com/challenges/shelby-needs-your-input-on-their-latest-supercar-tuataras-interior>

Figulo design challenge: 337 entries



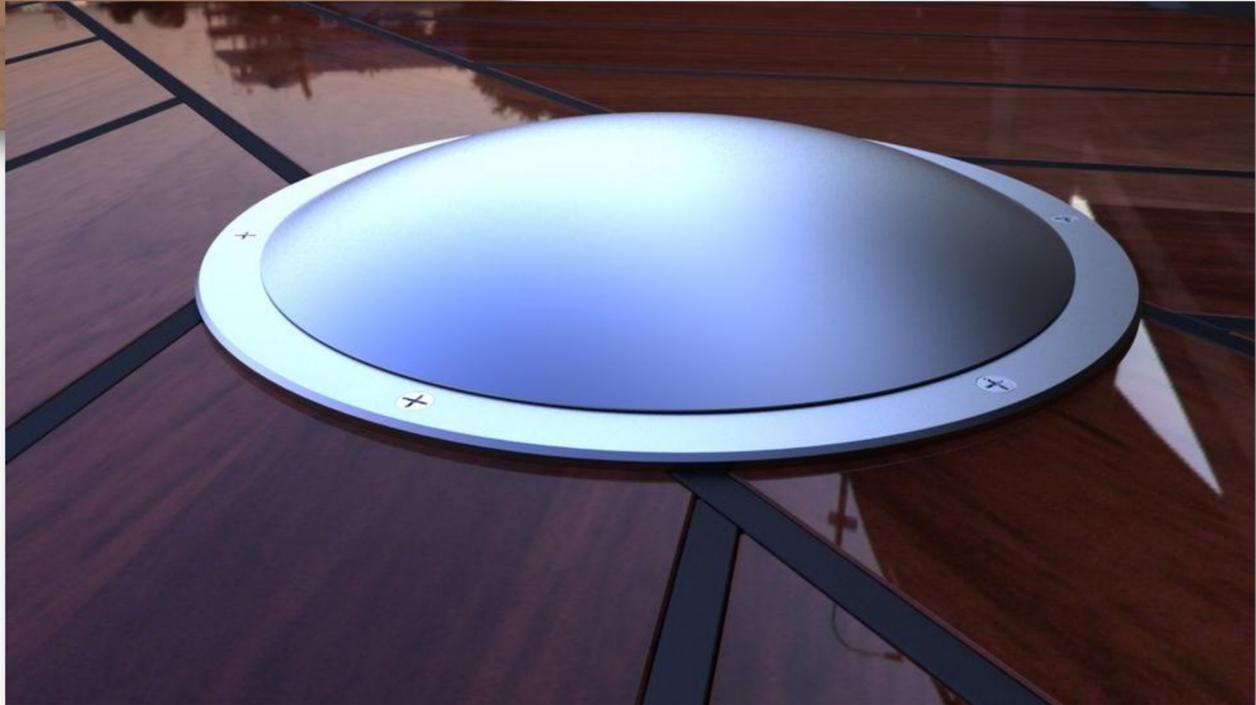
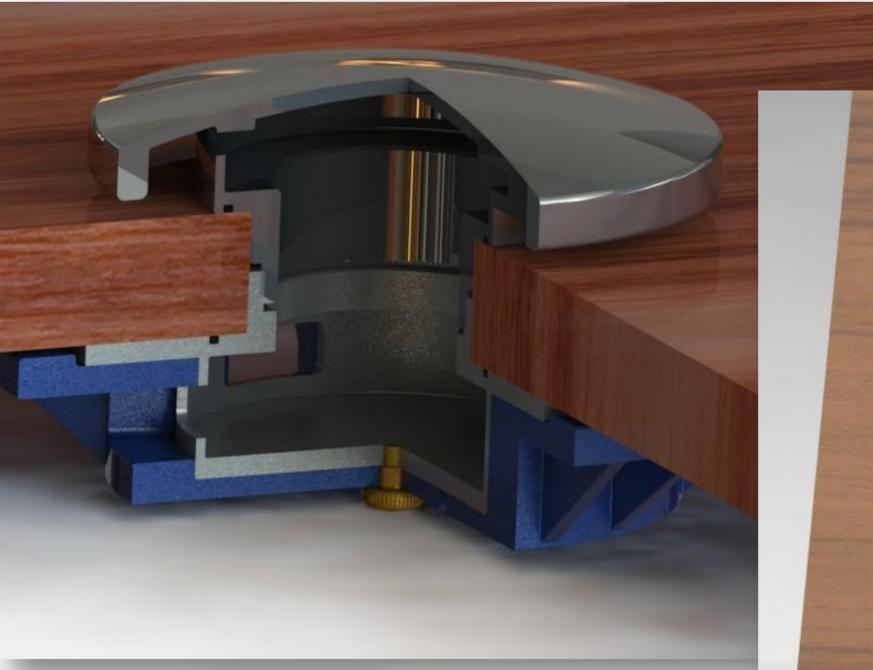
<http://grabcad.com/challenges/ceramic-home-decor-objects>

Yacht deck vent challenge



<http://grabcad.com/challenges/deck-vent-for-luxury-yachts-builder-saare-yachts>

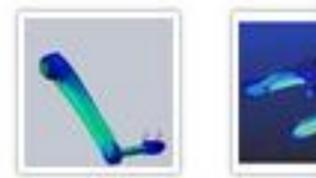
Yacht deck vent challenge: 94 entries



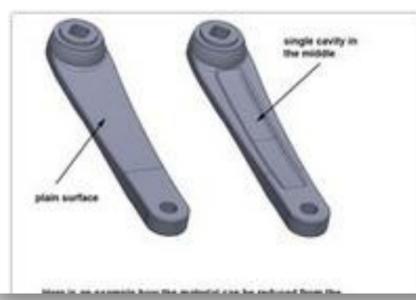
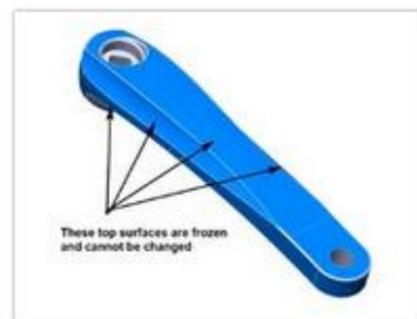
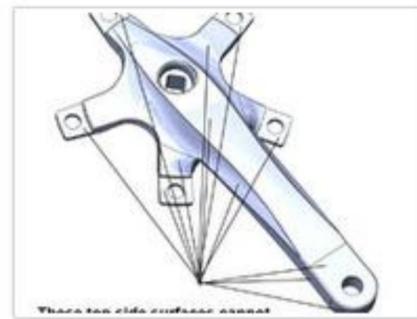
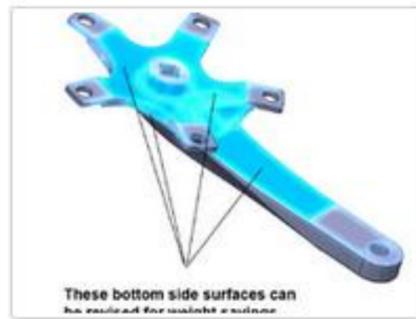
Bicycle crank weight reduction challenge



ENTRIES (35)



[View all entries](#)



<http://grabcad.com/challenges/bicycle-crank-weight-reduction>

In-house effort VS crowd-sourcing

	In-house	Crowd-sourcing
Selection	Single solution	46 alternatives
Level of excellency	Standard	Contest made engineers to go the extra mile
Time	3 months	5 weeks including preparation
Innovation	Closed, safe approach	Out-of-box, fresh approach
Additional benefit	None	Promotion + demonstrated openness of the company
Cost	Would have cost many times more	Total budget \$5,000

Limitations of Crowd-sourcing

- Sometimes you get what you pay for
- Organizing and executing challenges takes time and effort
- Primary results rarely can be taken directly to manufacturing

Pointers on obtaining best results

- Treat engineers with respect
- Set and define clear expectations
- Communicate with engineers throughout the process
- Attractive compensation

Benefits for manufacturing companies

- A great number of ideas generated quickly
- Fresh perspectives as compared to conservative, safe, classic in-house approaches
- Heat of competition drives community to excel and go the extra mile
- Great marketing opportunity to showcase your product to large online community of engineers and designers

Why engineers like it

- Extend their skillset
- Work on different projects for a variety of cool companies
- Earn extra money
- Participation in world-class contests improves reputation
- Discover, nurture and promote star talent

Future of crowd-sourcing in engineering

- Ecosystem must continually drive the quality of design upward
- Engineer's time and effort must be increasingly valued and respected

A well designed crowd-sourcing ecosystem will
unleash a powerful sea of untapped potential,
accelerating the engineering
world into the 21st century.

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