

# Harnessing the Wisdom of the Crowd

*Skip Davis  
NineSigma*

If innovation was only this easy ...



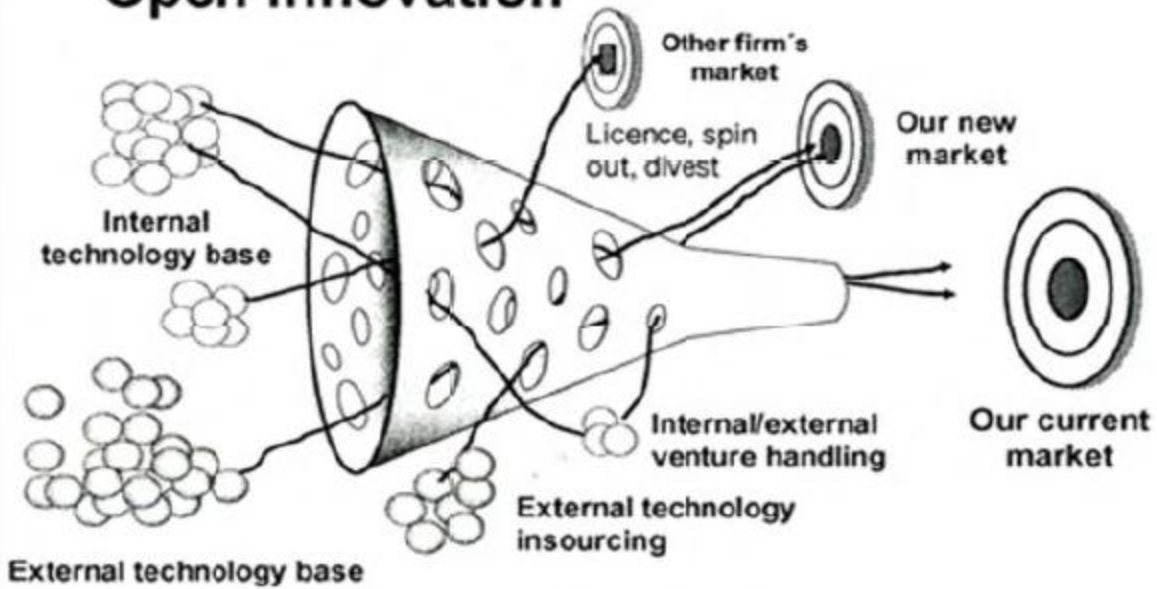
When googling innovation this picture used to be the number one hit



*"I' am happy to give you innovative thinking. What are the guidelines?"*

Lately, a new picture has placed  
even higher ...

# Open innovation



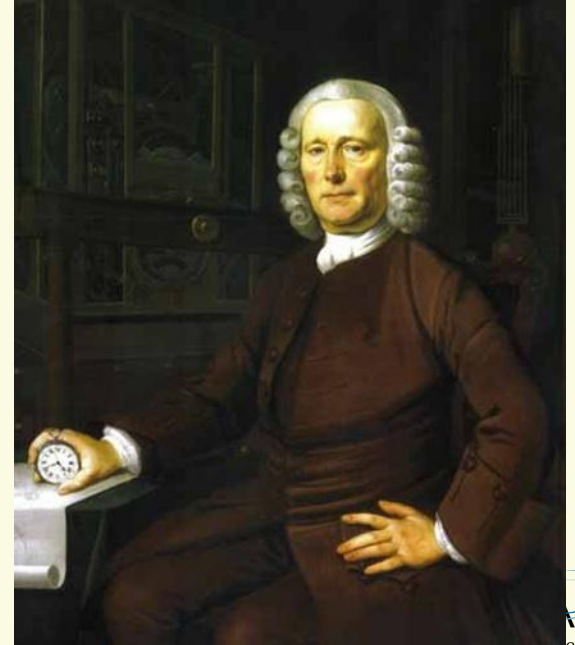
*Stolen with pride from Prof Henry Chesbrough UC Berkeley, Open Innovation Renewing Growth from Industrial R&D, 10th Annual Innovation Convergence, Minneapolis Sept 27, 2004*

Crowds  
Open Innovation  
Crowdsourcing  
Open Source  
Communities of Practice  
Networking

Where did all this start ??

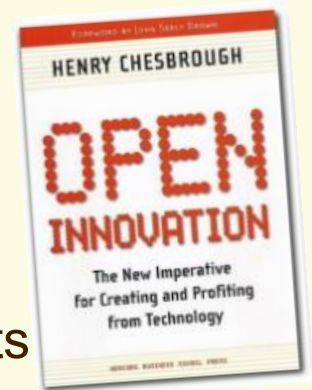
# If we go back in time ...

- In 1714, the British government offered the Longitude Prize to anyone who could develop a method for determining a ship's longitude.
- Incentives valuing over £100,000 were offered
- The winner was John Harrison, who received £14,315 for his work on chronometers.



# More recently

“The presence of many smart people outside your own company is not simply a problem for you or a fact of life to be regretted. It poses an opportunity for you. If the smart people within your company are aware of, connected to, and informed by the efforts of smart people outside, then your innovation process will reinvent fewer wheels. What’s more, your internal efforts will be multiplied many times through their embrace of other’s ideas and inspiration.”



Source: Open Innovation; Henry Chesbrough; 2003

## And yet more recently

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The term "crowdsourcing" is a portmanteau of "crowd" and "outsourcing," first coined by Jeff Howe in a June 2006 Wired magazine article "The Rise of Crowdsourcing".

— From Wikipedia



# So what does this mean to those of us in the room?

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**None of this is new:**

Organizations have been tapping into "crowds" outside their organization for many years in order to solve challenges



In 1936, Toyota received 27,000 contributions from which their corporate logo was determined

# What makes it more powerful today:

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- Technology now makes it possible to reach millions of groups and/or people around the world
- People and companies are getting more skilled at collaboration
- We understand how crowds behave, how to recruit and motivate them, how to drive desired outcomes

Given this background ...

# If asked to connect to the "crowd" to speed innovation ...

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- How would you start?
- Where would you start?
- How would you conclude?

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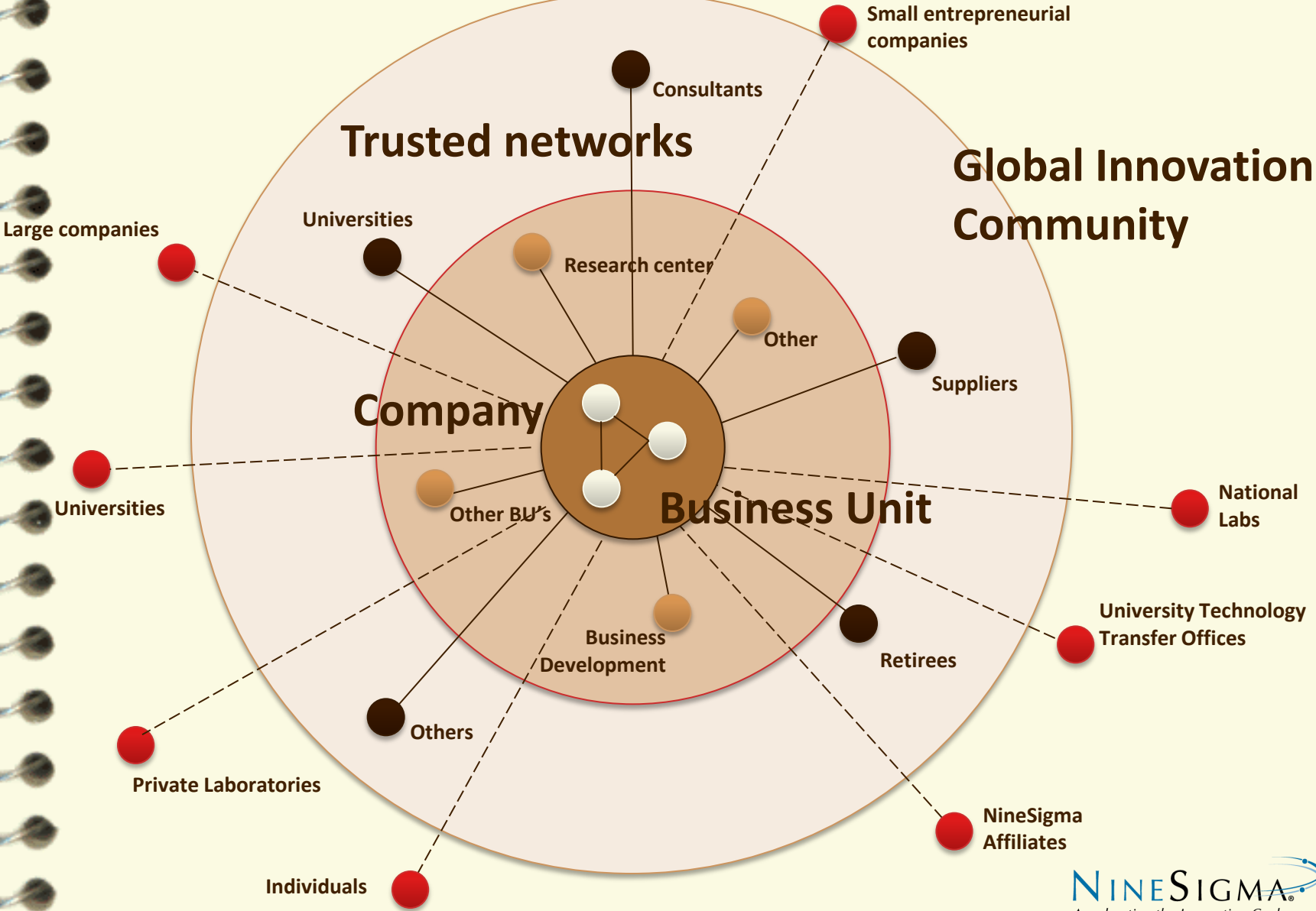
If not Google then what ??

# First, what is a crowd?

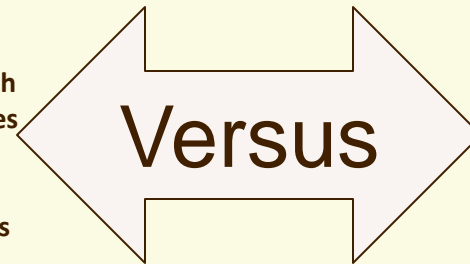
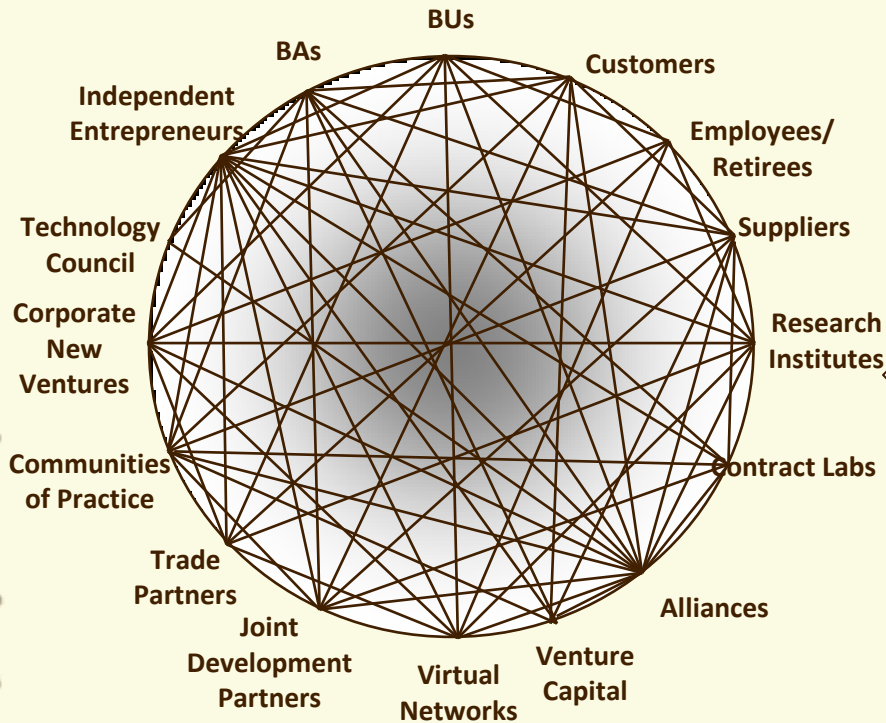
The screenshot shows the website for Global Voices For Maternal Health, a project of the University of Oxford. The header features the organization's logo on the left and the University of Oxford logo on the right. Below the header is a blue navigation bar with links for 'topics', 'about', 'how it works', 'panelists', 'resources', 'blog', 'contact', 'login', and 'join'. A search bar with a 'go' button is also present. The main content area has a dark background with a photograph of a woman holding a baby. The text reads: 'Calling All Midwives, Nurses And Doctors! Welcome To The Global Voices For Maternal Health Forum — Have Your Say!'. Below this, it says: 'Here you can share and discover ideas about improving maternal healthcare with hundreds of other professionals all over the world. [View discussion topics and contribute.](#) Help us find ways to deliver safe and effective medical care to more pregnant women worldwide.' Three circular icons represent 'SOLVE' (a lightbulb), 'COMMENT' (a speech bubble), and 'VOTE' (a checkmark). Each icon has a brief description: 'Share ideas on how to improve maternal healthcare.', 'Give feedback based on your professional experience.', and 'Score ideas on how useful they are to maternal health.' At the bottom of the main content area is a blue bar with a series of right-pointing arrows and a 'GET STARTED' button.

The real key is organizing and  
accessing the "crowds"

# Innovation Ecosystem



# Competition today is ...



Your  
Ecosystem

Competitor's Innovation  
Ecosystem

# So the questions become:

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- Who is in my ecosystem?
- How do I organize my ecosystem into crowds?
- When and which crowd do I use?
- How do I access my crowd?
- What are benefits?
- What are challenges?

# Who is in my ecosystem?

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- Employees
- Trusted Partners – retirees, suppliers, universities, consultants, others
- Everyone else – ad hoc crowds created for specific outcomes

# How do I organize my ecosystem?

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- Into distinct crowds along two dimensions:
  - Level of trust
  - What they know

# When do I use my ecosystem?

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**Needs**

**Determine  
needs to  
present to  
innovation  
ecosystem**

**Engage**

**Identify  
crowd,  
connect and  
receive  
responses**

**Assess**

**Assess  
responses for  
fit to  
requirements**

**Acquire**

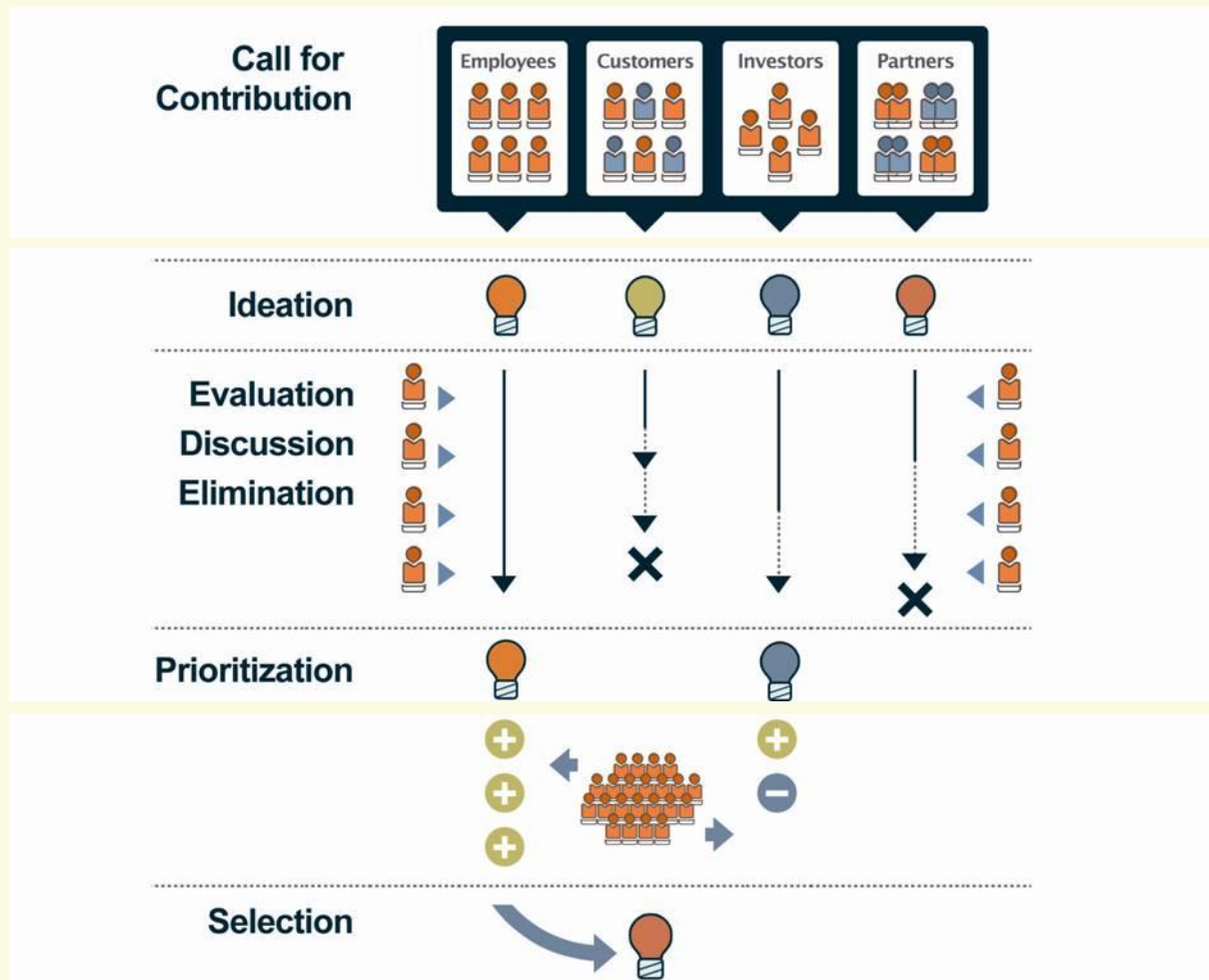
**Integrate  
knowledge,  
technology,  
capabilities,  
innovation**

# How do I access my crowd?

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- Technology platform
- People – Tacit knowledge
- Engagement model

# Collaborative Crowdsourcing Model



# Intermediary Model

**NINESIGMA**  
NineSigma - Connecting technology seekers with solution providers around the globe

## Request for Proposal

**REQUEST # 50601-1**  
**Local Subsea Power Generation**

**RESPONSE DUE DATE:** [3-4 weeks after launch]


**MANAGER:** Kevin C. Stark, Ph.D.  
**SOLUTION PROVIDER HELP DESK**  
EMAIL: [PhD@ninesigma.com](mailto:PhD@ninesigma.com) PHONE: 216-283-3501

**Opportunity**  
Possible outcomes are research, pilot testing, and possible multiple applications of a local power generation system for a seabed application.

**Timeline / Financials**  
Phase 1: Paper study to evaluate feasibility (anticipated late 2008)  
Phase 2: Future dependant on outcome of Phase 1

**Download Proposal Template**  
**Indicate intention to submit proposal**  
**SUBMIT proposal online**  
**Frequently Asked Questions**

(click buttons above)



**REQUEST FOR PROPOSAL DESCRIPTION**  
NineSigma, representing an Energy Company seeks proposals for remote local power generation systems for seabed applications. Early stage technologies and conceptual proposals are of interest. The objective is to create power generation system building blocks to meet a variety of underwater (sub-sea) power demand needs, replacing long distance power cables. Solutions shall be capable of being configured by interconnecting multiple modules in series and parallel to produce power ranging from a few megawatts to more than 100 MW.

**Details on desired specifications for candidate technologies:**

- **Continuous power generation and supply** to varying electric motor drives located on the ocean bottom.
- Ambient conditions include external pressures ranging from 10 to 150 bar (due to water depths from 100m to 1500m), and sea floor temperatures from -2°C to 10°C.
- **Robust, reliable power generation designs** are critical due to the remoteness of the potential application areas.

- Optimum solutions will have a physical mass and volume similar to or smaller than that of equivalent land based power generation technologies.
- Operate maintenance free for 2-5 years.
- System shall be capable of providing remote system control and condition-based management.
- Include or be capable of including provisions for ancillary and auxiliary load requirements.
- System shall be capable of remote restart following system shutdown.

**Desired power generation performance specifications for the various building blocks:**

With an output voltage from 4160 V to 6.9 kV

- 0.5 to 2 megawatt +/- power in a single packaged module

With an output voltage from 6.9KV to 69KV

- 5 megawatt +/- power in a single packaged module
- 20 megawatt +/- power in a single packaged module

AC or DC power will be considered

23611 Chagrin Blvd., Suite 320, Cleveland, OH 44122 • Phone: (216) 295-4800 • Fax: (216) 295-4825  
RFP format and graphics © Copyright 2007 NineSigma, Inc

NineSigma, representing an Energy Company seeks proposals for remote local power generation systems for seabed applications.

# Prize-based Model

The screenshot shows the ecomagination website interface. At the top left is the 'ecomagination' logo. To its right are links for 'Sign in' and 'Register', followed by a search bar with a dropdown arrow and a submit button. Below this is a green navigation bar with two main categories: 'POWERING YOUR HOME' (with a house icon) and 'POWERING THE GRID' (with a plug icon). On the right side of this bar are links for 'BLOG' and 'HAVE A GREAT IDEA? Submit your entry ->'. A secondary navigation bar below contains links for 'Ideas', 'About', 'How It Works', and 'Winners & Partners'. The main content area features a white box with the heading 'ecomagination challenge' and 'Powering Your Home'. Below the heading is a paragraph describing the challenge as the second GE ecomagination Challenge, part of GE's \$200 million commitment to finding and funding promising technologies for our energy future. It mentions that over 70,000 people visited to submit close to 800 ideas and leave over 10,000 comments. A second paragraph invites users to look at innovative technologies and processes submitted to improve energy in the home. To the right of the text is a stylized illustration of a house with a green roof and a blue starburst above it, with wind turbines in the background. A blue speech bubble contains a tweet: 'Some eco-friendly alternatives to gift-wrapping for kids birthday parties http://t.co/yD34cTB 16 hours ago'. The bottom right corner of the page features the 'NINESIGMA' logo with the tagline 'Accelerating the Innovation Cycle'.

ecomagination™ Sign in | Register Search

POWERING YOUR HOME POWERING THE GRID BLOG HAVE A GREAT IDEA? Submit your entry ->

Ideas About How It Works Winners & Partners

ecomagination challenge  
**Powering Your Home**

Powering Your Home was the second GE ecomagination Challenge, part of GE's \$200 million commitment to finding and funding the most promising technologies for our energy future. Powering Your Home focused on home energy. Over 70,000 people visited to submit close to 800 ideas and leave over 10,000 comments.

Take a look at some of the innovative technologies and processes users submitted to dramatically improve the creation, management and use of energy in the home.

Some eco-friendly alternatives to gift-wrapping for kids birthday parties  
<http://t.co/yD34cTB>  
16 hours ago

**NINESIGMA**  
Accelerating the Innovation Cycle

# Portal Model

**Eskom** REGISTER | LOGIN

Home | About the Pilot | FAQ | Contact Us

**ESKOM OPEN INNOVATION PLATFORM**

**WELCOME**

**CALLING ALL INNOVATORS AND SOLVERS!**

Eskom invites YOU to participate in the Open Innovation Pilot Project. The purpose of this project is to engage anyone who has a possible solution to help solve some of Eskom's challenges and needs. This project will create an innovation network for the energy sector that will help solve future energy related challenges and benefit all stakeholders.

The pilot project sees the launch of the challenges below. Please register and submit your reply to the challenges. All solutions are welcome and anyone is welcome to submit but please ensure that your solution adheres to the specific challenge requirements. [Read More](#)

**Thank you for your collaboration!** Challenges 1, 2 and 4 closed on the 31st of July.

COMING SOON: Challenge 3 - Seeking Experts to Peer Review a Sustainability Assessment Model that identifies the Impacts of an Electric Utility on Society.

Watch this space for details!

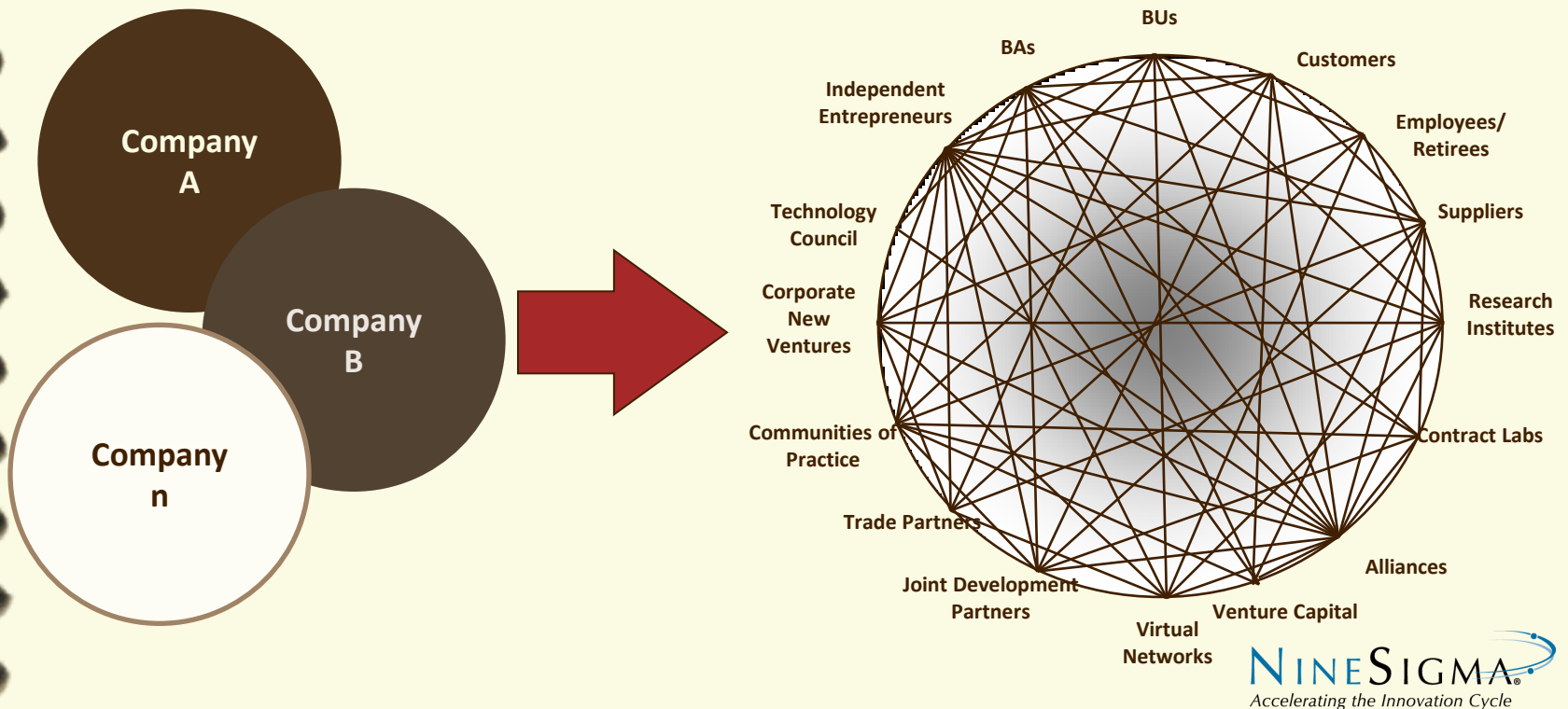
**Before you SUBMIT!**

1. Please read the Intellectual Property terms and conditions [here](#)
2. Please download and read the challenge's information sheet.

**Current Challenge**

# Linked Innovation Model

Linked Innovation is a model to execute collaborative R&D among groups to accelerate problem solving on shared challenges.



# What are benefits of leveraging the crowd?

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- Challenges solved
- Unobvious connections

# Challenges solved

REQUEST # 50178-1

## Nanoparticle Halide Salt: Formulation and Delivery

RESPONSE DUE DATE: **October 10, 2005**

[Download required response template](#)

[Submit proposal online](#)

### POINT OF CONTACT:

Kevin C. Stark, Ph.D., [stark@ninesigma.com](mailto:stark@ninesigma.com)  
Program Management Office: 216-295-4800

### Opportunity

Possible business engagements include contract research/joint development through proof of principle, licensing/royalty of existing technology, supply, etc.

### Timeline/Financials

Proposers should define a project timeline and budget to demonstrate proof of concept, or describe how samples of existing solutions can be obtained for testing and evaluation



### REQUEST FOR PROPOSAL DESCRIPTION

NineSigma, representing a **Global Consumer Products Company** (Top 100 Fortune 500 Company) is seeking proposals for the development of **formulation and delivery of nanoparticle sized halide salts**. In particular, the following steps are desired:

- o Formulation (or molecular milling) of nano to micron-sized particles
- o Suspension to maintain the integrity of the particle size and avoid agglomeration
- o Spray/dip/coat surfaces with the suspension
- o Drying to prevent agglomeration and keep nanoparticle size on the surface.

### BACKGROUND

Due to confidentiality constraints, more information on the specific application for this technology is not available at this time. However, technologies to manufacture and enable the use of nanoparticle sized halide salts have the potential to become a breakthrough, game-changing capability that can impact a \$1 billion dollar market.

The technology must meet the following criteria:

- o Particle size ranging from < 50 nm to 200 nm.
- o Extremely high surface area to volume ratio.

Seeking partners for formulation and delivery of nanoparticle sized halide salts

## FoodProcessing.com

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## PepsiCo Reduces Sodium by Restructuring Salt

FoodProcessing.com  
03/30/2010

It was a relatively small part of an investor presentation, but R&D officials of PepsiCo Inc. in March acknowledged proprietary and patent-pending technology to change the crystal structure of salt, allowing the company (in the future) to reduce sodium by 25 percent "with no impact on taste."

"Early on in our research, it became apparent that the majority of salt on a snack doesn't even have time to dissolve in your saliva because you swallow it so rapidly," explained Mehmood Khan, senior vice president and chief scientific officer and a former Mayo Clinic endocrinologist. A Wall Street Journal story later reported only about 20 percent of the salt on a chip dissolves on the tongue, and the remaining 80 percent is swallowed without contributing to taste.

"There was an opportunity for our scientists," said Khan. "If we could figure out a way of getting the salt crystals to dissolve faster, then we could decrease the amount of salt we put on a snack with no compromise on taste."

Well, they did. Khan said PepsiCo researchers collaborated with scientists from around the world and found ways of changing the crystal size and structure to make the salt crystal dissolve more quickly, effectively putting the

PepsiCo reduces sodium by restructuring salt

# Unexpected connections



PACKAGE LEAK DETECTION



DISPENSER TECHNOLOGY



MICROWAVE EVEN HEATING



THERMOFORMABLE FILMS



SENSORS



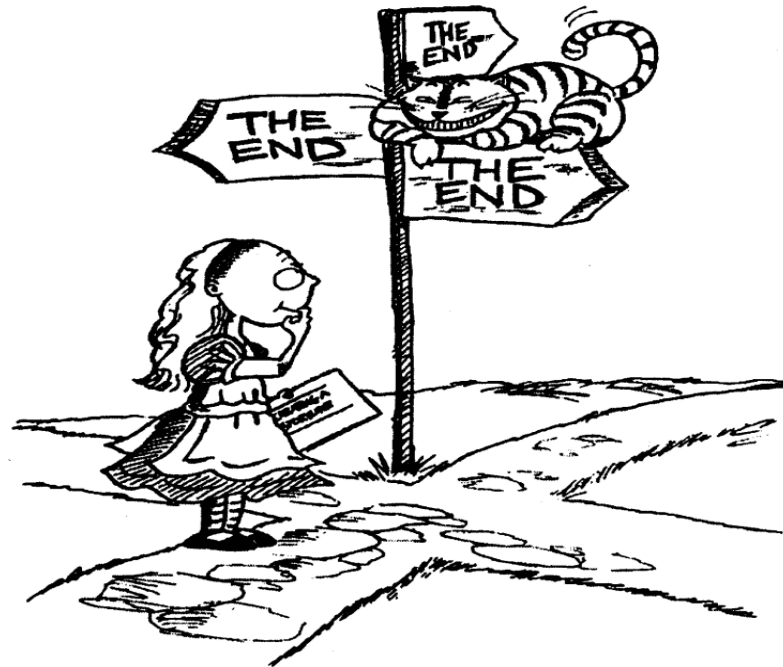
# More importantly

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- Increased speed to innovation
- Reduced risk
- Cost ?

# What are the challenges?

Organizations see the power of leveraging the crowd, but have trouble with the doing.



# Why is this ...

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Of all man's endeavors, none is so difficult as the introduction of a new system. For the initiator has the full energy of all those who would oppose it, and only lukewarm support from those who would benefit.

Machiavelli 1515

# Challenges

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- Openness
  - Confidentiality, Competitive Info, Social Risk
  - Culture – NIH, WKE
- Senior Management concerns
  - IP
- Lack of budget for “I” titles
- Momentum for the old ways

# So - where do you start?



# We suggest combining “thinking and doing”

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- Identify goals
- Align the stakeholders
- Develop a simple workflow
- Run projects
- Learn
- Expand

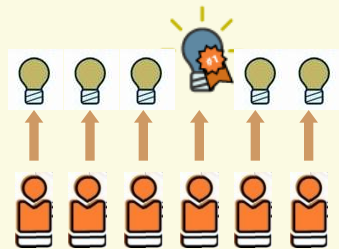
# First, think about

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- Anonymity
  - Do you want the crowd to know who is behind the request?
- Desired Outcome
  - Is the outcome biased toward ideas/concepts or complete solutions?
- Type of crowd
  - Is the crowd tightly defined in some way (i.e. retirees) or is more open to allow for unobvious solutions?
- Will I be able to move the input from the crowd forward?

# Next, pick a crowdsourcing model

## Intermediary



Crowd submit ideas,  
winner selected by  
company

## Collaborative



Crowd submit,  
crowd evolves  
ideas and picks  
winner

Run the program

Learn

Run another program

# Final thoughts

- Open innovation and crowdsourcing have come a long way in just a few short years
- We are still learning, but the value is there and growing
- The next few years will be transformative
- Early adopters will gain significant advantage

What is the end point ??



home develop shop us faq join the community & login

## our products

# spacebar



### The Space Bar **\$42.00**

More Space, More Ports, Less Clutter

The Space Bar is a simple, elegantly designed desk accessory that functions to minimize clutter while also providing additional USB ports for your computer.

When you are done typing for the day, simply slide your keyboard into the designated space below the shelf. Use the shelf to store any desk items you like - keys...

227 out of 590

COMMIT NOW

### product 0029

#### product research

05:23:22:51

Ok Product 29 is up Quirks! Tell us about your luggage. Take our survey and earn some influence.

Blaine says:

Luggage Tags are in common use but they could serve multiple purposes.

1. Combination Locking system for the tag allows expansion to lock the bag, and can attach other bags like your laptop bag to ...

### product 0027

#### industrial design

04:23:41:51

Time to design Product 27. Review our designs and submit your own as well.

Recap:

We all have tons of pens lying around, mostly occupying often used drawers, or being stacked in some sort of funny cup-like holder... Either way it's a messy gang, most of them being cheap (usually promotional) bios, many of them...

### product 0026

#### tagline

03:23:06:51

Snow Shredder needs tagline. Who's got one? Will give you 3 spots. Earn influence, earn cash!

Recap:

How about a link between the two?