

Open Innovation and Innovative Design



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PLANNING

- **Open Innovation (OI) : what is new?**
 - Overview of Open Innovation
 - OI for problem solving
- **Open innovation for innovative design**

OPEN INNOVATION (OI)

- (Chesbrough 2003): Strategies to source ideas from outside

*“**Open innovation** is a paradigm that assumes that firms can and should use **external ideas** as well as **internal ideas**, and **internal and external paths to market**, as the firms look to **advance their technology**”*

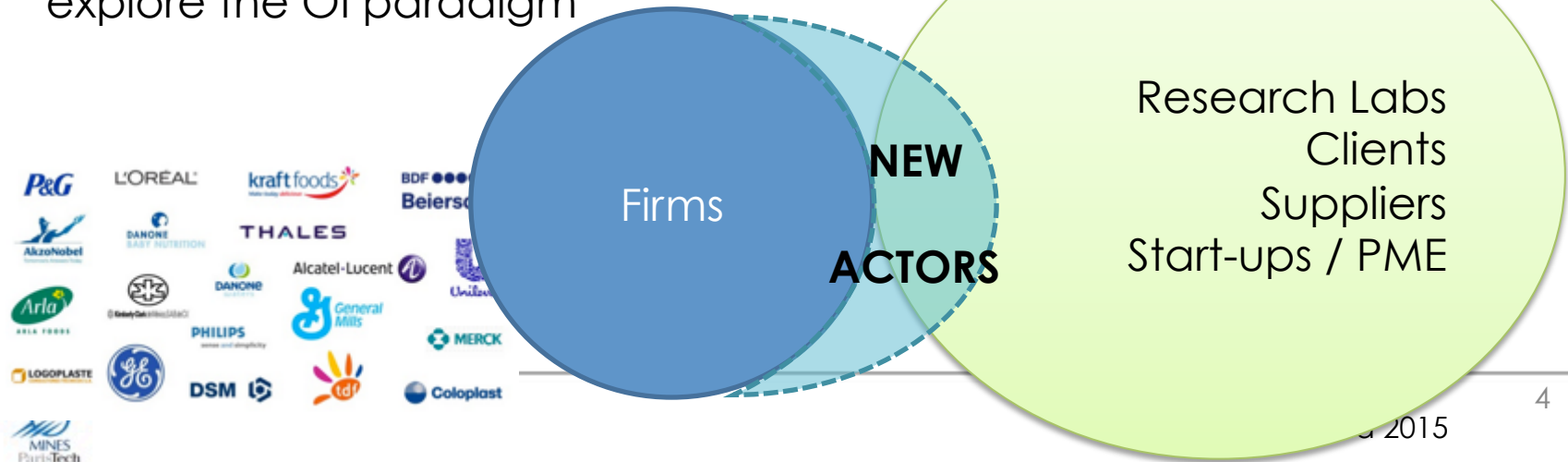
OPEN INNOVATION (OI)

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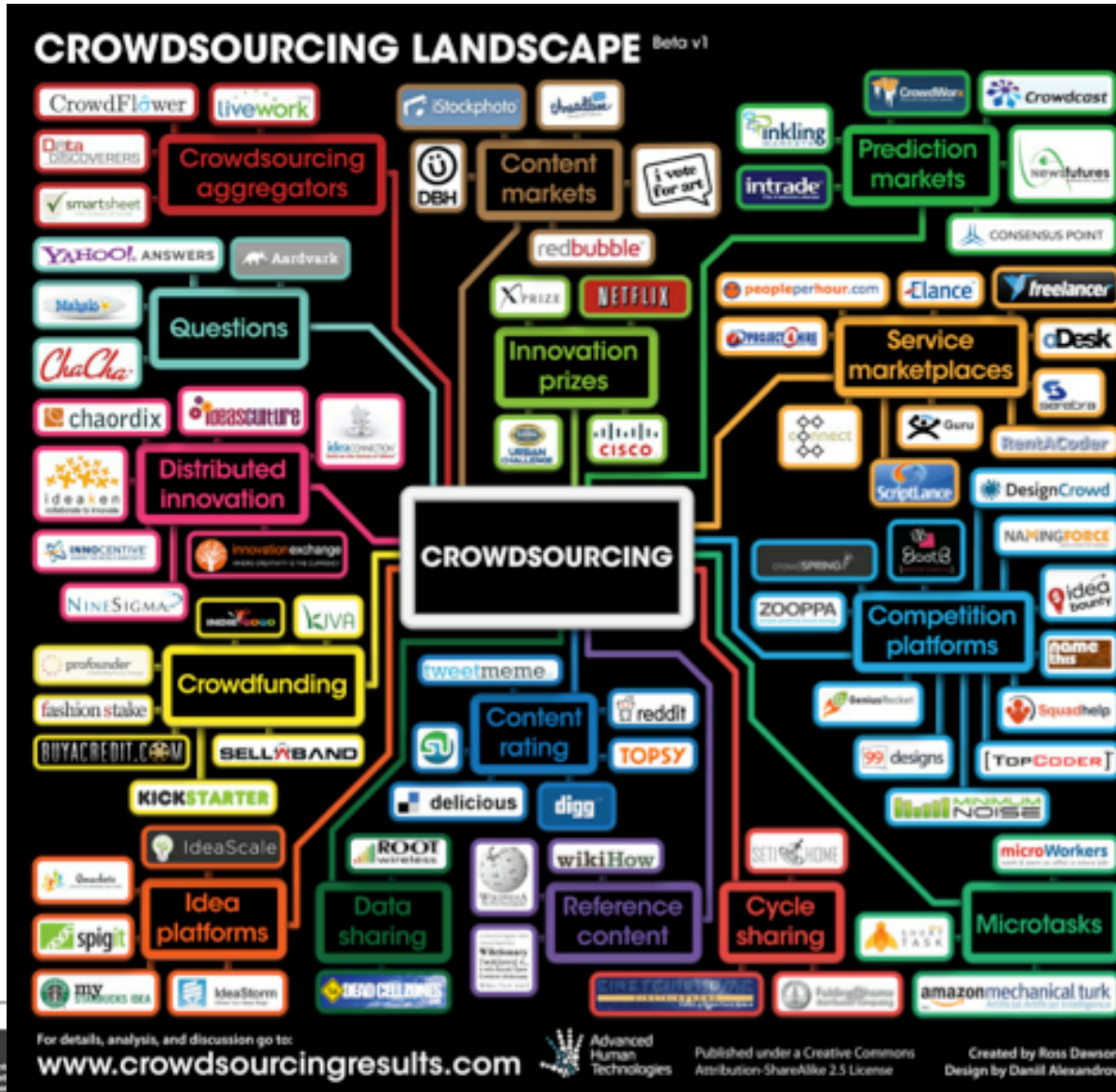
*“**Open innovation** is a paradigm that assumes that firms can and should use **external ideas** as well as **internal ideas**, and **internal and external paths to market**, as the firms look to **advance their technology**”*

From 2003:

- Overall excitement
- Plenty of companies explore the OI paradigm



INTERMEDIARIES: THE GROWING INTEREST FOR « CROWDS » - > EXPLOSION OF TOOLS

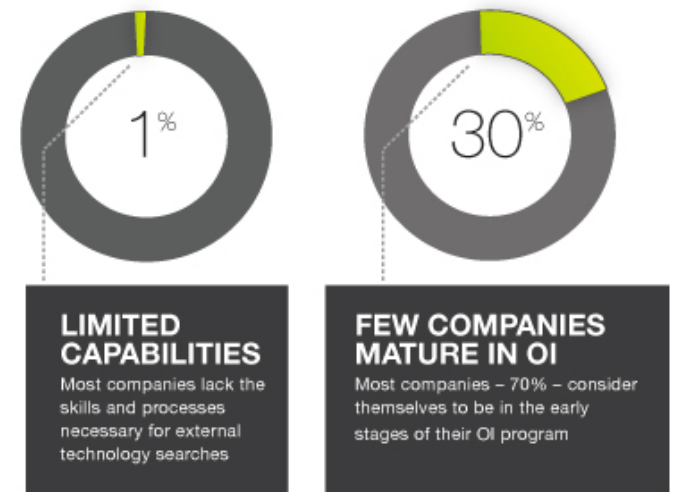


Crowdsourcing

- is a model leveraging on **novel technologies** (web 2.0, mobile apps, social networks)
- To build content and a structured set of information by gathering **contributions from large groups of individuals**

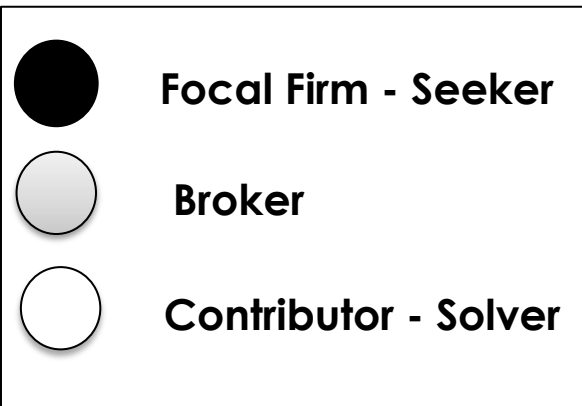
WHY OPEN INNOVATION (OI)?

- **Economy and Strategy management literature** - > **Logic of optimization**
 - Economic logic **of risk sharing**
 - **Knowledge sharing**: Knowledge organized across organizations - **good ideas from outside**
 - **Resources Externalization**



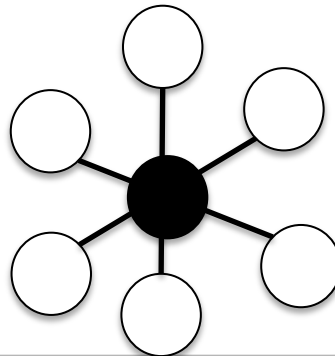
- **How to effectively organize OI? What are the organizational forms of OI in collaboration?**
- **When dealing with intensive innovation! - > logic of design?**

CROWDSOURCING: CROWDS MIGHT BE ORGANIZED THROUGH COMMUNITIES, CONTESTS, IDEA PLATFORMS,...

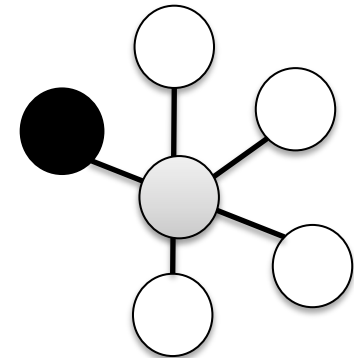


Intermediaries

Open crowdsourcing/
Idea platforms



Crowdsourcing via a broker/
intermediary



Source: Simula et al., 2014

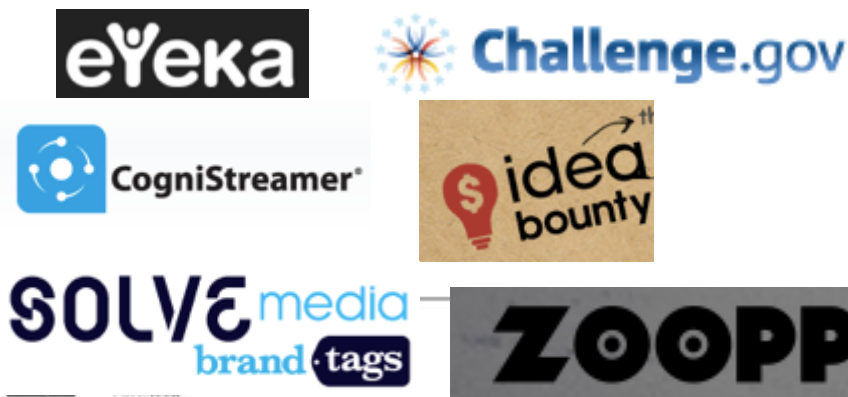
INTERMEDIARIES: THE GROWING INTEREST FOR « CROWDS » - > EXPLOSION OF TOOLS

Intermediary platforms

- R&D based platforms



- Marketing, Design & Idea platforms



Collective Intelligence & Prediction platforms



HR & Freelancers platforms

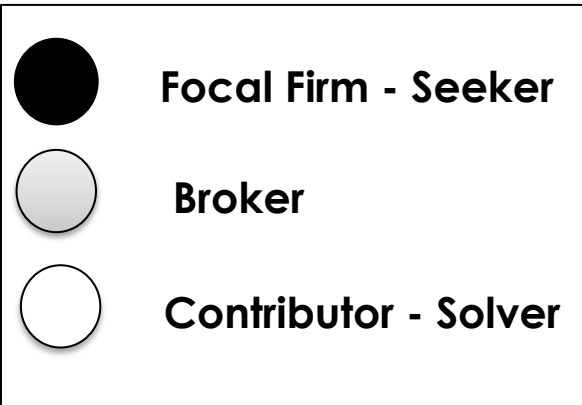


Open Innovation SW

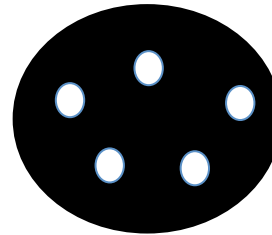
Venture Spirit



CROWDSOURCING: CROWDS MIGHT BE ORGANIZED THROUGH COMMUNITIES, CONTESTS, IDEA PLATFORMS,...

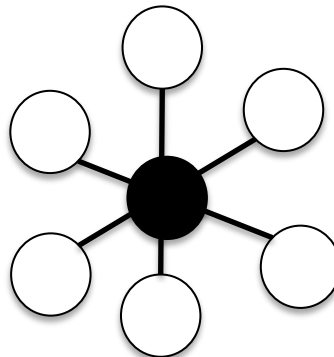


Internal crowdsourcing/ Corporate initiatives

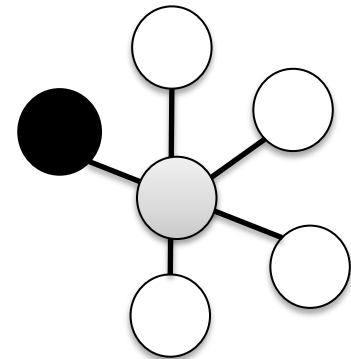


Intermediaries

Open crowdsourcing/
Idea platforms



Crowdsourcing via a broker



Source: Simula et al., 2014

CORPORATE INITIATIVES: INTERNAL CROWDSOURCING/IDEA PLATFORMS

Product idea crowdsourcing



Branding & Design crowdsourcing

Sew Your Own Personal 8-Piece Lingerie Collection

This course will show you how to transform the Lingerie blocks into unlimited styles combining basic designs with your creativity!

[Sign up and learn how to draft the basic lingerie blocks step by step](#)



YOUR IDEAS COULD BECOME ACTUAL SHOES

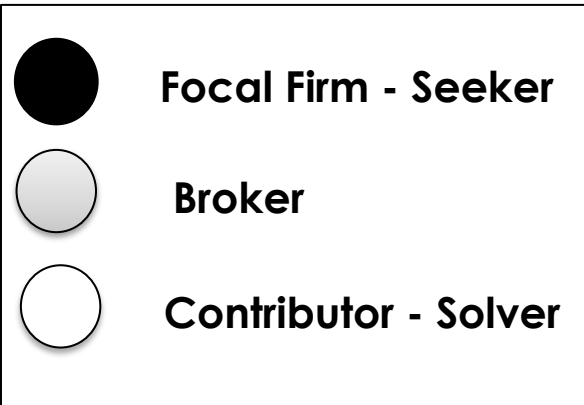
Taking a page from Open Source Software, Open Source Footwear gives everyone a chance to have a say in the shoes they want to see. All you need is an idea. Click the Submit Your Design button below to sign in and send away! If Jake's inspired by your design, he'll turn it into a real shoe, add it to the collection, name it after you, and send you a pair! Pretty neat, right?



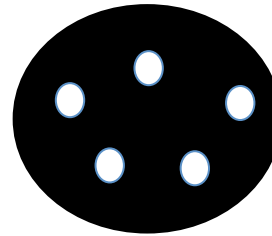
Public crowdsourcing



CROWDSOURCING: CROWDS MIGHT BE ORGANIZED THROUGH COMMUNITIES, CONTESTS, IDEA PLATFORMS,...

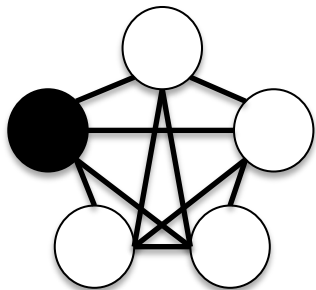


Internal crowdsourcing/ Corporate initiatives

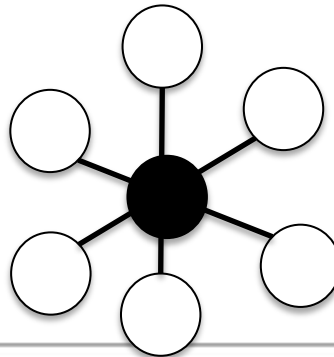


Intermediaries

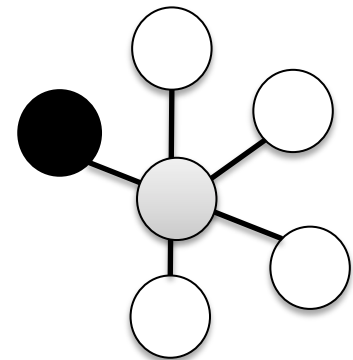
Community crowdsourcing



Open crowdsourcing/
Idea platforms



Crowdsourcing via a broker



Source: Simula et al., 2014

COMMUNITY CROWDSOURCING



Funding Circle



WIKIPEDIA
The Free Encyclopedia

YAHOO!
ANSWERS

About

Legal

The WebKit Open Source Project (including portions from the khtml, kcanvas, kdom, and ksvg2 projects) and JavaScriptCore Project (including portions from the kjs project)

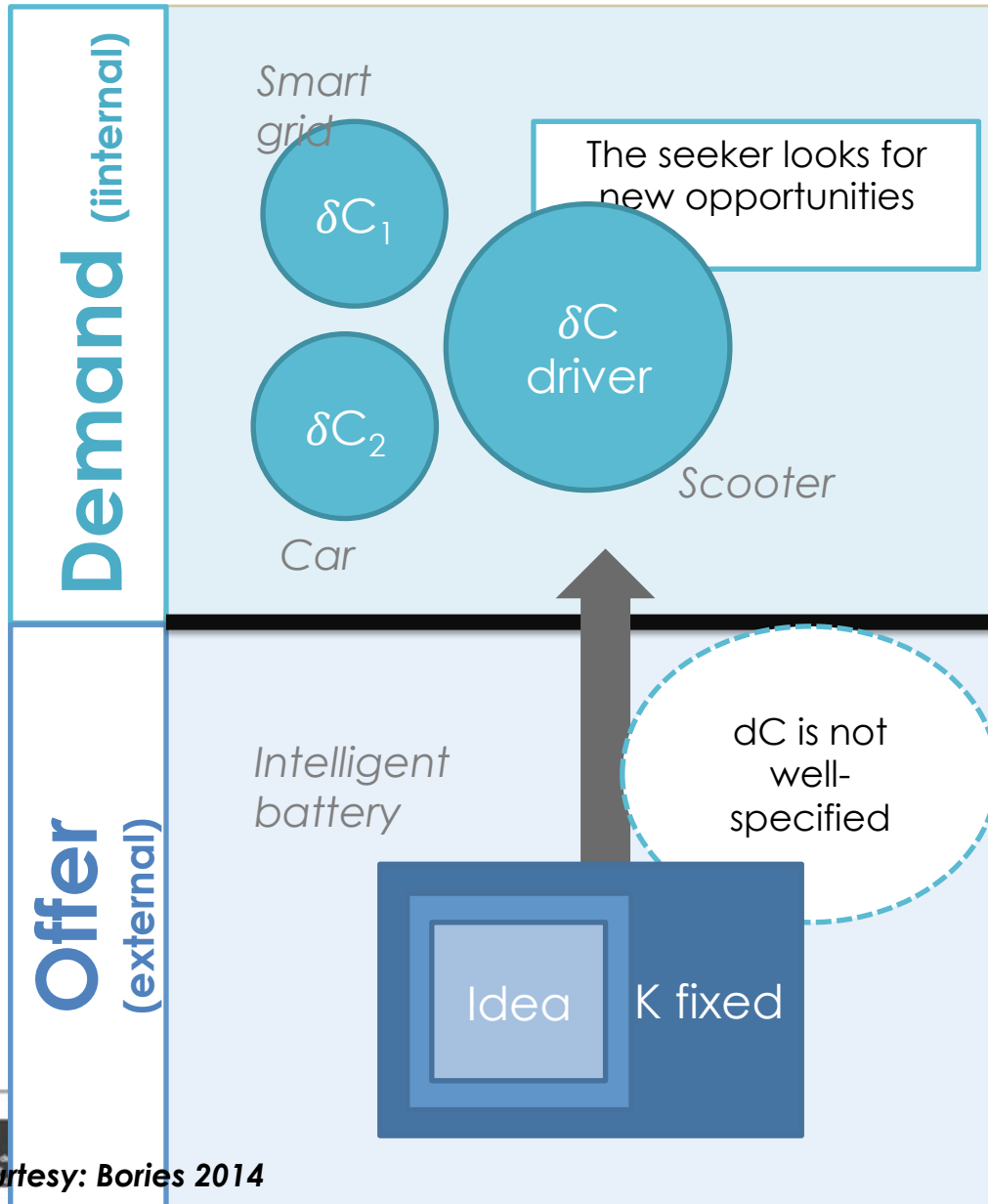
Copyright © 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 Various contributors as noted below.

Contributors to the WebKit, WebCore and JavaScriptCore projects include: Alexander Kellett, Alexey Proskuryakov, Allan Sandfeld Jensen, Andrew Wellington, Antti Koivisto, Apple Inc., Bjoern Graf, Daniel Molkentin, David Smith, Dawit Alemayehu, Erik Moller, Dan Gilbert, Eric Seibert



App Store

1/ IDEA PLATFORMS



- No specific **needs to innovate**
- **Platform to submit projects/ ideas**
- Ideas submitted are coached and monitored till the creation of new product opportunities



2/ ORGANIZE « CROWDS » TO SOLVE VARIOUS PROBLEMS

- Contests go way back to history:



The Duomo - Florence
1418 - Up to 2,000 Florins



1869 Napoleon III Margarine Prize to deal
with butter shortage in cities

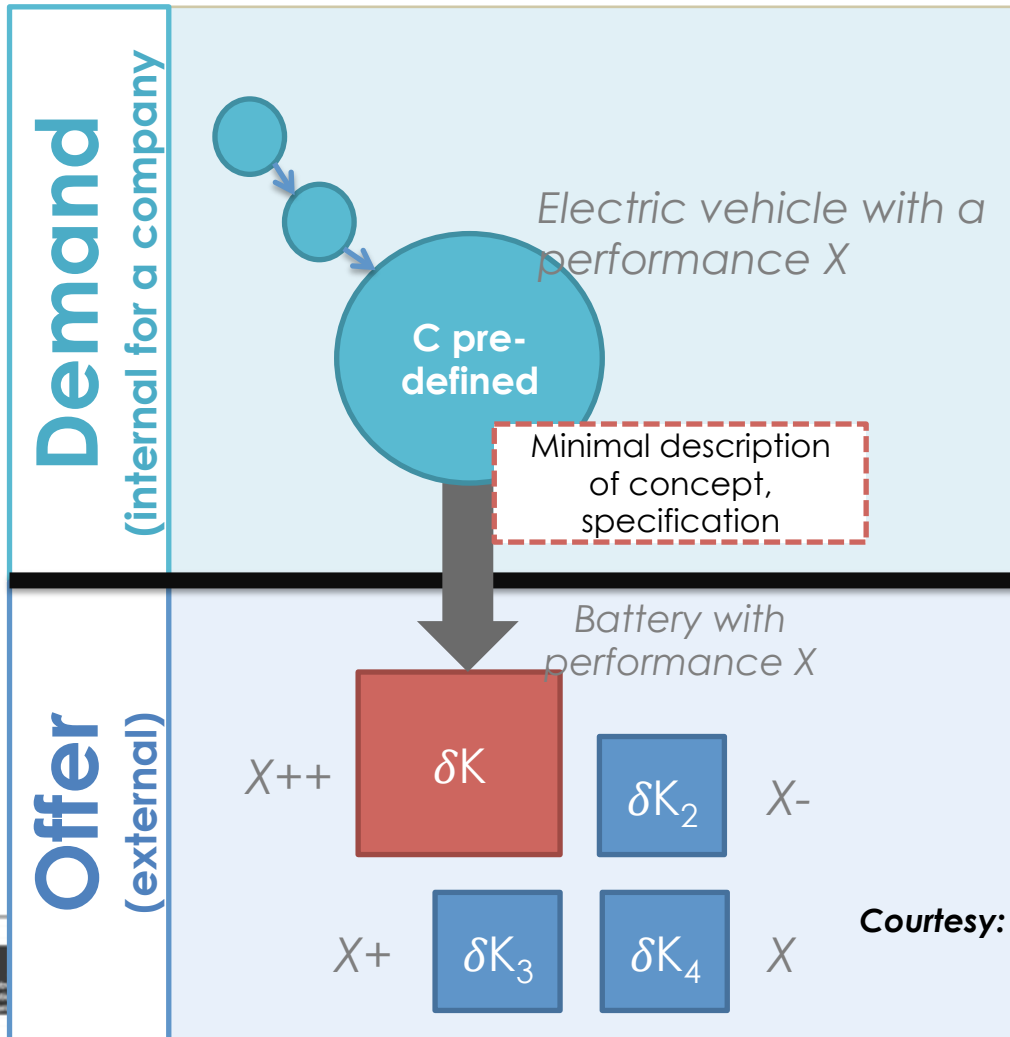


1773: Spain's King Philip II:
developing a method of
findings longitude at sea: 6000
gold ducats

- Prize-based tournaments historically drive innovation thanks to “crowds” creativity
 - Why do they reappear now? Are they different?
-

2/ ORGANIZE « CROWDS » TO SOLVE VARIOUS TECHNOLOGICAL PROBLEMS

Contests: Seekers and solvers competing for an incentive (Terwiesch and Xu 2008)



1. **Commercial logic**
2. **Seekers:** define a problem
3. **Solvers:** decide if they propose a solution, compete for an incentive



Courtesy: Bories 2014



NASA Innovation Pavilion



[NASA Pavilion Home](#)

[NASA Challenges](#)

Global Appeal-

2900 solvers

80 Countries



Go Green in the City

» Paris, June 2014 «

[TOP](#) [ELIGIBILITY](#) [HOW IT WORKS](#) [IMPORTANT DATES](#)

The Challenge

Schneider Electric invites you to its fourth annual Go Green in the City global business case challenge. Enter for a chance to revolutionize energy management and gain unique insight into one of the leading global energy management companies.

The top twelve teams will travel to Paris where they will compete to win a trip around the world and a career opportunity at Schneider Electric*.



INNOVATION CONTESTS: FROM COMPETITION...

Innovation/ Idea contests: to embrace a great variety of markets applications or technological alternatives (Magnusson 2009, Terwiesch and Xu 2008)

- **Seekers/ Solvers** – Type of Incentives (fixed prize; performance contingent award) for a defined problem
- **Trade off between number of seekers/reward mechanism:**
 - Cost evaluation, risk sharing
 - Innovative design is missing



1869 Napoleon III
Butter shortage
contest

WHICH FACTORS/ INCENTIVES FOR A CONTEST SUCCESS?

The participants' **specific knowledge base**

OR JUST Like in a lottery: getting **as many participants as possible**

The participants' **analogous knowledge base**

The participants' **creativity**

The participants' **lead user status**

The participants' **intrinsic motivation**

The **price** announced

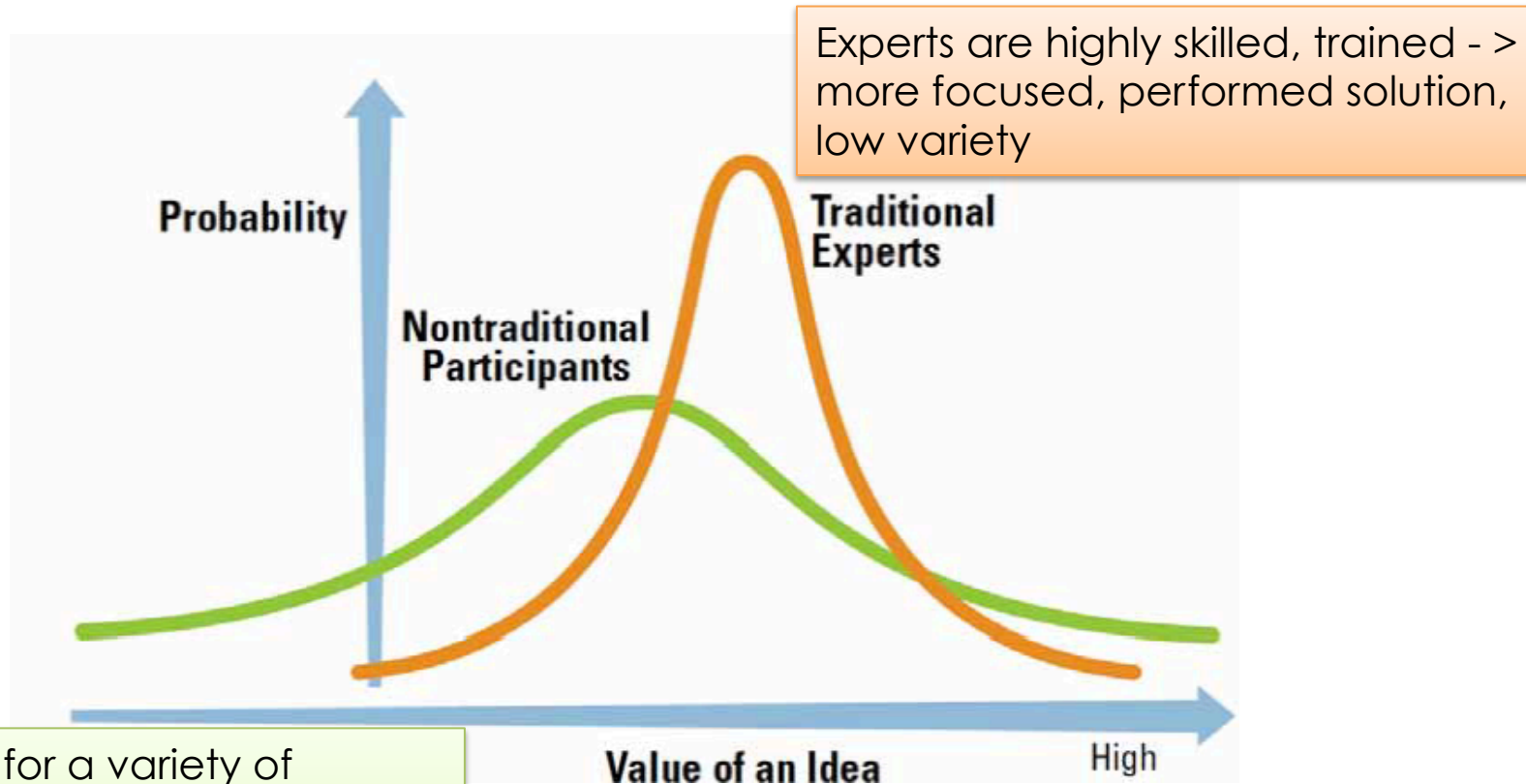
The degree of **interaction** between participants

...

Bullinger et al. 2010, Bunderson & Sutcliffe 2002, Frey et al. 2011, Füller 2006, Gulley & Lakhani 2010, Hargadon & Sutton 1997, Huston & Sakkab 2006, Jeppesen & Lakhani 2010, Lakhani et al. 2007, Leimeister et al. 2009, Pötz & Schreier 2012, Terwiesch & Xu 2008

MOTIVATION OF ORGANIZING CONTESTS: EXTREME VALUE

Courtesy : Lakhani 2014



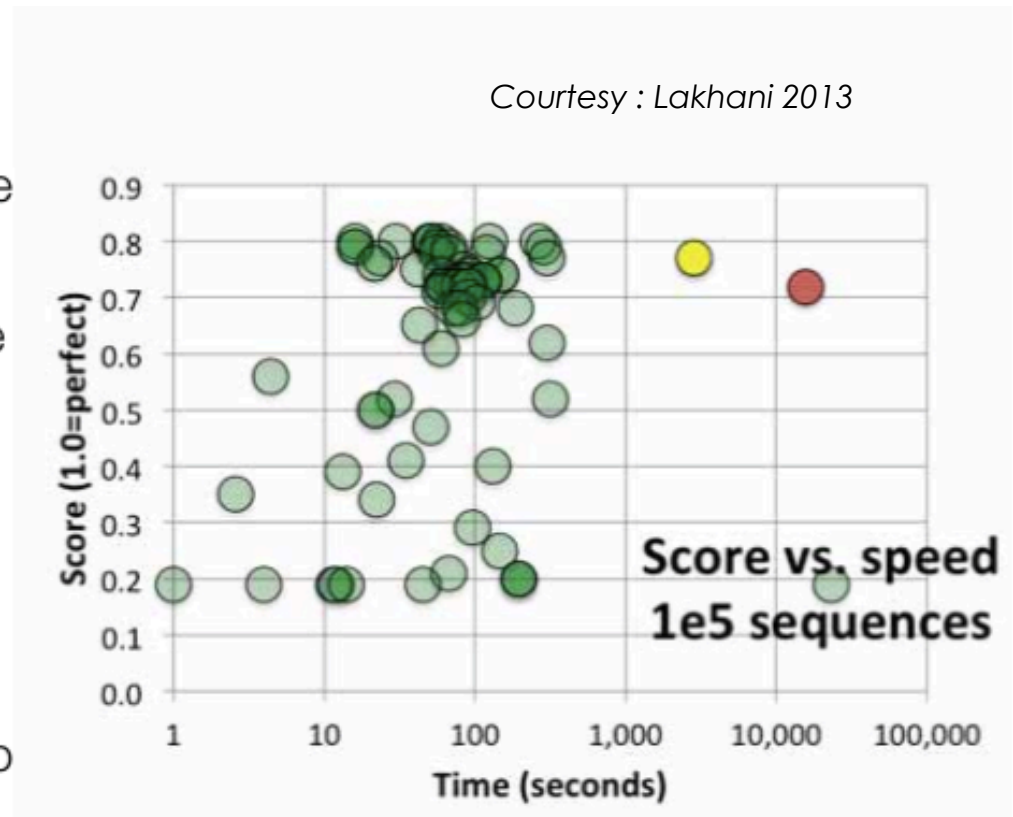
OI is suitable for a variety of nonconventional surprising ideas that are « far » from traditional expertise - > high volatility

THE DISCOVERY OF EXTREME VALUE OUTCOMES RELATIVELY QUICKLY : UNCONVENTIONAL WINNERS

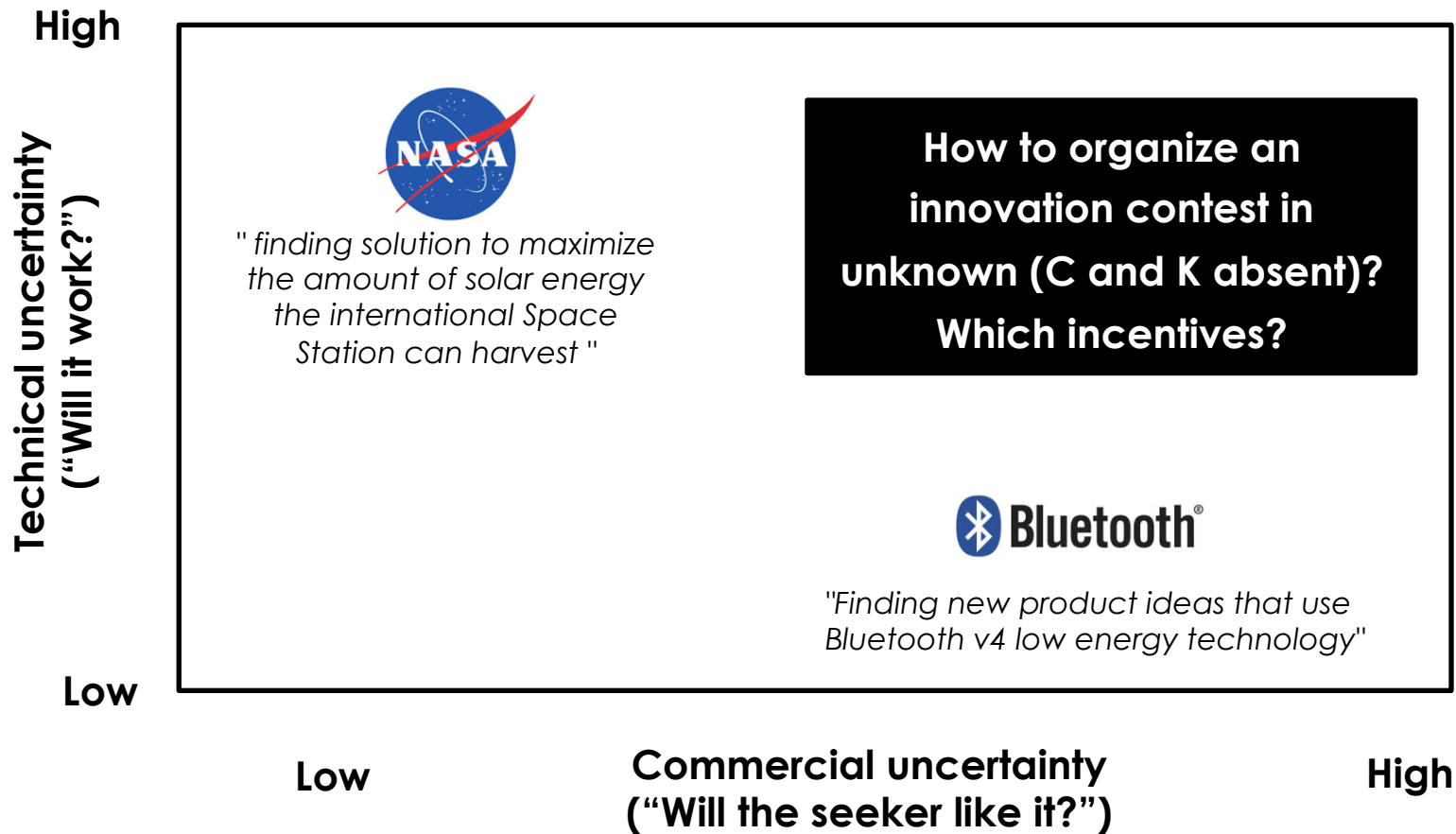
Harvard Medical School Contest for Biology Big Data Problem in Genomics

Two week long competition - \$2000 prize pot x 3 on TopCoder.com

- 122 coders submitted 654 submissions
- 34 coders exceeded state of the art by $10^2 - 10^5$
- 89 different approaches to solve problem identified
- Winners from Russia, France, Egypt, Belgium & US
- Annotate 10 million sequences in < 3 mins; Quarter billion sequences in ~ 1 hour on laptop



INNOVATION CONTESTS: WHICH INCENTIVES IN INNOVATIVE DESIGN?



ONLINE COMMUNITIES – A WAY OF ORGANIZING CROWDS



**« Crowds » : do they replace the traditional logic of development/
engineering institution/ R&D?**

Is it possible to ensure « engineering » of a car with crowds?

ONLINE COMMUNITIES – A WAY OF ORGANIZING CROWDS



Local Motors Open House
Sat. July 31, 6:30pm
car show and live music, 8:30pm

www.local-motors.com

A car through a contest? Co-creation

Local Motors Creative Communities

Community building for problem solving:

*Conditions for community existence:
motivation, votes*

Is it innovative design?



What they do differently: Microfactories



OPEN INNOVATION: 11 YEARS AFTER THE INTRODUCTION BY (CHESBROUGH 2003)



1650 + External contests,
~1000 internal



Total 1500 awards given

From 2001 – 300000+ solvers, 200 countries

Total 40000+ solutions submitted

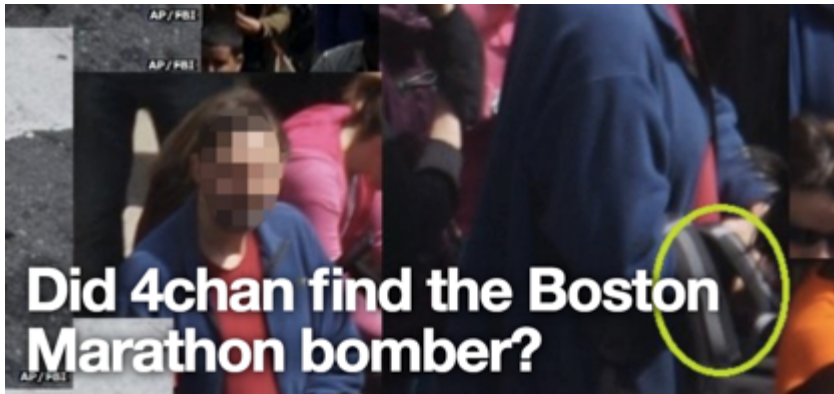
As a result: 40M\$ distribués en 12 ans

OPEN INNOVATION: 11 YEARS AFTER THE INTRODUCTION BY (CHESBROUGH 2003)

The failures of IC

Reddit and 4chan

Working to ID Boston Bomber
Fast parallel solving machine



Seeked to name a new section of the International Space Station



Stephen Colbert (6 times more votes than even Nasa options!)

NEW PERSPECTIVES - OI

- OI – focus on crowdsourcing
- BUT a variety of forms: markets, fablabs, geek communities, hackathons...

