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Open Innovation Speaker Series– Session 4

Open Innovation Intermediaries

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Berkeley, CA
September 12, 2010

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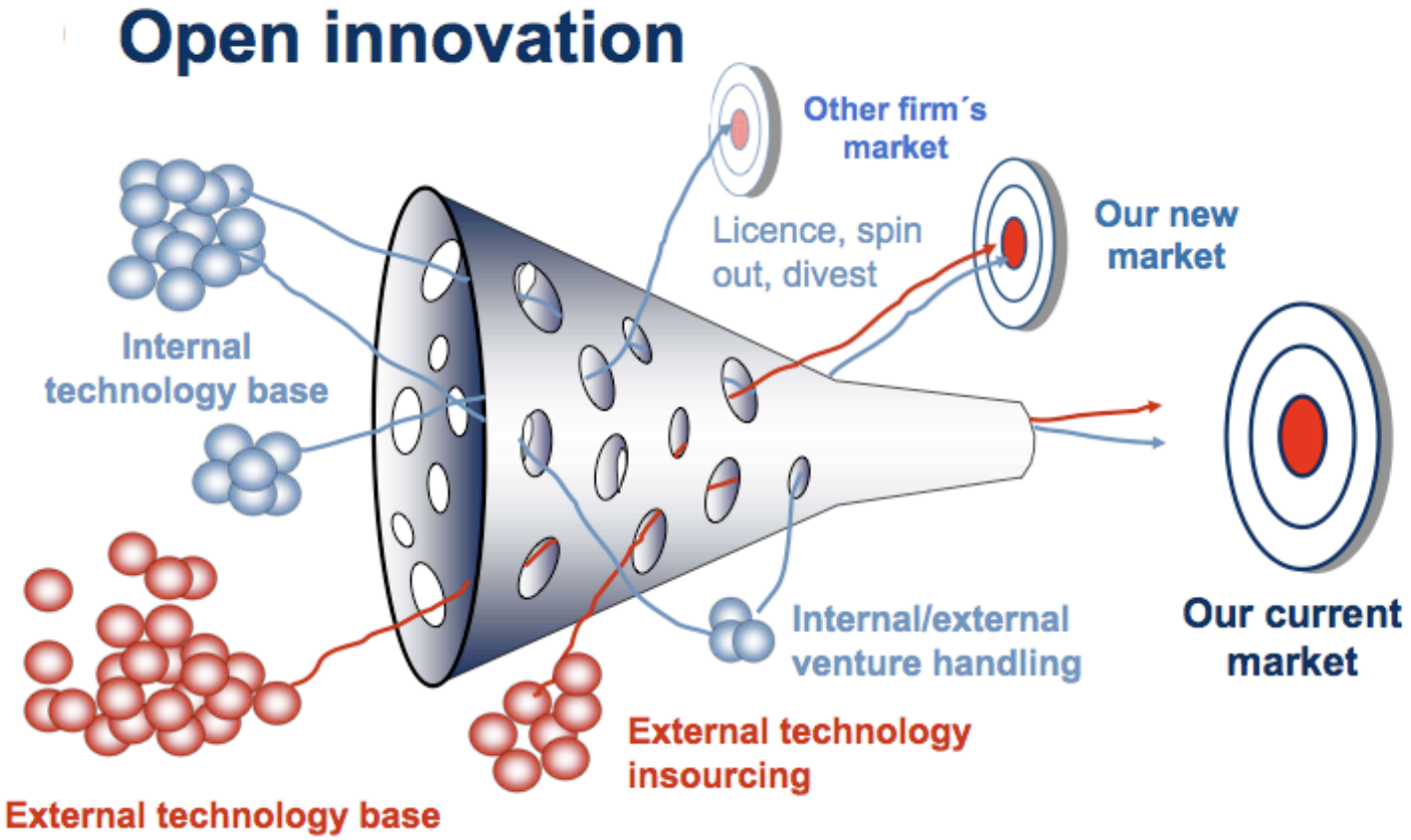
It all started with the porous funnel…



Source: H. Chesbrough

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… which intermediaries supposedly make *even better*

- **Theory: Getting help** in doing open innovation
  - "Innovation intermediaries are a powerful force for putting external innovation within the reach of every company"
    - Overcome your limited reach: link to more people, firms
    - OII handle the rocky parts of the road for you
  - **Gist:** OII → more and better links → better innovation performance
- **Practice:** More than 100 companies on most extensive list I know
  - Biggest ones have pools of tens of thousands of actors
  - "InnoCentive": 1.24m Google hits – "open innovation": 2.85m!
- Henry is on the board of InnoCentive

So – how do OII work? And do they?

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Today's main takeaways

- OII are **connectors of different types of knowledge**
- OII are a way to **solve one of the core issues of crowdsourcing**
  - Crowdsourcing itself does not scale (well)
  - The **use of OII** (crowdsourcing-as-a-service) **does!**
- OII fulfill **three core tasks**
  - Enhancing **reach**
  - Easing the **selection** burden
  - Facilitating **transfer** and access
- The OII business model is **extremely human-capital intensive**
  - Limited applicability, significant growth barriers

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Structure of the talk

- Who is this guy?
- What are Open Innovation Intermediaries?
- Why do firms use them?
- What is the business model?

Please feel to interrupt and/or challenge me at ***any*** time during the talk

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Who I am

- Originally from Munich, Germany
- First degree in Management Information Systems (2005)
- PhD (2008) in Business Administration @ TU Munich, Germany
  - At Imperial College Business School (London, UK) ever since
  - Member of team studying open and distributed innovation
- General interests: intersection of value creation & capture, intellectual property, and “open” models of innovation
  - When and to what extent should you be open?
  - How can you move towards a more open model?
  - How can you manage an open model of innovation?
- Today’s topic falls right into this area!

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Linking insights from open and user innovation

Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively

Two types of knowledge exist: problem-related knowledge, and solution-related knowledge; innovation needs both

Important distinction: which type of knowledge do you want to cross the boundary of your firm and share with others and why?

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The problem/solution distinction and open innovation

- Problem-related knowledge
  - “Simple” (customer) needs
  - (Unforeseen) applications
- Solution-related knowledge
  - Technological solutions
  - In-bound or out-bound
- Potentially both at same time
  - Products on a market
  - In-bound and outbound

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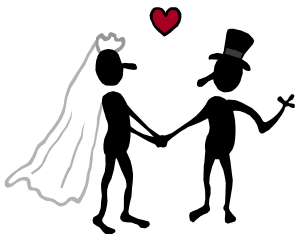
How Open Innovation Intermediaries come in

An extremely broad definition to Open Innovation Intermediaries
(→ hereafter: OII or Innomediaries)

"Organizations that link two parties, of which one holds **need-related** an another **solution-related** knowledge"

Note #1: need + solution = innovation
Note #2: process works both ways
Note #3: "organization" does not have to mean "firm"
Note #4: the "match.com of innovation" analogy works



INNOCENTIVE
NINESIGMA Accelerating the Innovation Cycle
yet2.com
HYVE

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Many intermediaries do problems and solutions

- RFP
- Targeted Search℠
- Technology landscaping
- Needs assessment

- NS² Accelerated In-market Solutions℠
- Business & market intelligence
- Technology trend monitoring

- Crowdsourcing platform
- Crowd recruitment
- Managing innovation portals

- Linked Innovation℠
- Collaborative assessment
- Team development

- Development workshops
- Training
- OI Office℠
- Tools & templates

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Case #1: Ed provides a solution to Colgate

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"Broadcast search" as effective mechanism

- Karim Lakhani's work on InnoCentive
  - 166 problems in diverse categories (more sciency)
  - 49 (~30%) solved – not many, but more than 0% internal!
  - 75 awards to solvers (multiple solutions possible)
- Speedy solutions to internal "failures"
  - Internally, firms had spent 6m-2y (think that in man-hours!)
  - Solutions came within ~6m, at an average cost of $30,000
    - Average: 240 individuals read any problem, 10 submit
    - Average time spent: 74 hours by winning solvers, 36 hours by non-winners (so they get an average of ~265$/hour)
  - **Huge potential benefits for firms!**

Source: Frank Piller, http://www.slideshare.net/masscustom/frank-piller-service-providers-supporting-open-innovation
Lakhani/Jeppesen (2007); Chesbrough (2006 – Ch. 6)

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Case #2: Imperial Innovations sells our brains

- Tech transfer agency of Imperial College
  - now also Oxford, Cambridge, and UCL
  - contracts with externals, e.g., BAE
- Floated on the stock market in 2006
  - Just raised another £140m (>$220m)
  - Imperial still owns ~50%, does sell shares from time to time
- All Imperial College invention disclosures go there
  - ~350 a year, also leading to around 4 spin-outs
  - Currently 33 technologies for license
  - Currently 46 investments with >20% share, ~70 in total
- £5.5m profit last year ($8.3m)

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Case #2.5: IPIRA brings in some well-needed cash

UNIVERSITY OF CALIFORNIA, BERKELEY

IPIRA OFFICE OF INTELLECTUAL PROPERTY & INDUSTRY RESEARCH ALLIANCES

- 480-plus start-ups have licensed UC Berkeley technologies
- Currently 449 “licensing opportunities”
- Many success stories
  - E.g., Melanoma drug “Yervoy” (FDA-approved in March)

- Licensing revenue goes back
  - Revenues of $7.4m in 2009 ($7.7m in 2008) without LBNL
  - Re-flow in 2009 (based on 2008 income): $3.2m
    - $1.6m to inventors, $0.8m to academic units

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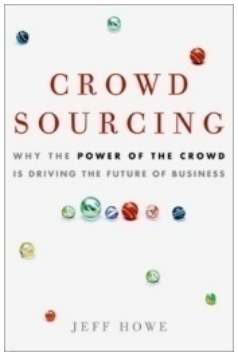
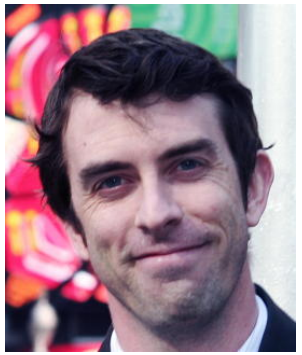
Oliver, is this not just some form of crowdsourcing?

- *Jeff Howe in Wired, 2006:* "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an **open call**"





➔ General principle is strongly related, by shows **some differences:**

- *Difference #1*: This is not a truly open call (usually a defined pool)
- *Difference #2*: The actual call is not sent out by the focal firm (in fact, the call can be completely anonymous!)

➔ I will show that **crowdsourcing itself does not scale,** but the use of "crowdsourcing-as-a-service" (i.e., OII) does

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Why use an OII, when you could crowdsource yourself?

- Just like on InnoCentive etc., you could list your problems on your own website (and save subscription and problem fee!)
- In addition, DIY gives the opportunity to integrate crowdsourcing optimally with other (related) open innovation activities
  - E.g., asking people to submit “unsolicited ideas”

- **Potential seems limitless**:
  - Tap into an unlimited number of externals
  - Acquire their knowledge cheaply/for free to your advantage!

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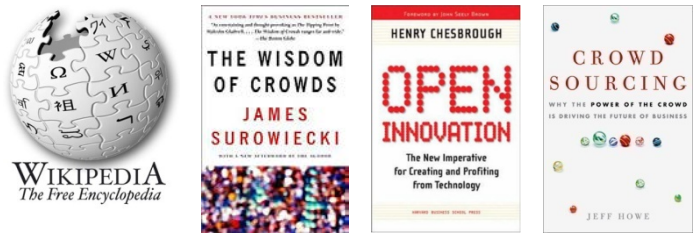
No soliciting: *companies receive 1,000s of ideas from outside, (almost) none make it through!*

Crowdsourcing: claim vs. reality

The claim: Academic literature, consultants, practitioners

Costless/limitless supply of problem solutions & new ideas



The reality: The BP Oil Spill Example

120,000 ideas received, 4 interesting

BP: "*there hasn't been one that's come from that system that's come all the way*"

Coast Guard: "*There's [sic] so many ideas you become numb to them*"

Most of the ideas you will receive are complete and utter garbage

- Not a problem by itself: larger haystack, higher chance there is a needle, right?
- **Core Issue: the "marginal cost of filtering" is not constant**
  - How do we filter through all the idea submissions we receive?
  - How do we find the golden nugget in the pile of dirt?

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Three core issues of UIPs (and crowdsourcing)

***Quality**: most ideas are worthless to the firm*

"There has been at least one [unsolicited idea submitted to this technology group], somebody outside had an idea, […] would we be interested in this design they had come up with? And it turned out that it was something that, it wasn't even new, so, well, we weren't."

***Quantity**: there are simply to many ideas, exacerbating quality issues*

"This [UIP] is, basically, a thing that nobody wants to take and in the organization the responsibility of this process has been… Well, thrown here and there and nobody wants to take the ball. So, this is just an additional work and we haven't used that for any other purpose."

***IP**: documentation and fear of contamination create additional cost*

"The whole idea behind this program has been basically, defensive. I don't know for sure but I believe that there might have been a case at some point where [Firm] has been asserted or sued by some individual who claims that [Firm] has stolen their idea and this […] program tries to cope with such a threat should that ever happen to us again. "

Perception
Cost of harnessing UIPs much bigger than potential

Consequence
UIP becomes filing exercise; efforts are focused on lowering cost of a burden for which no immediate value can be seen

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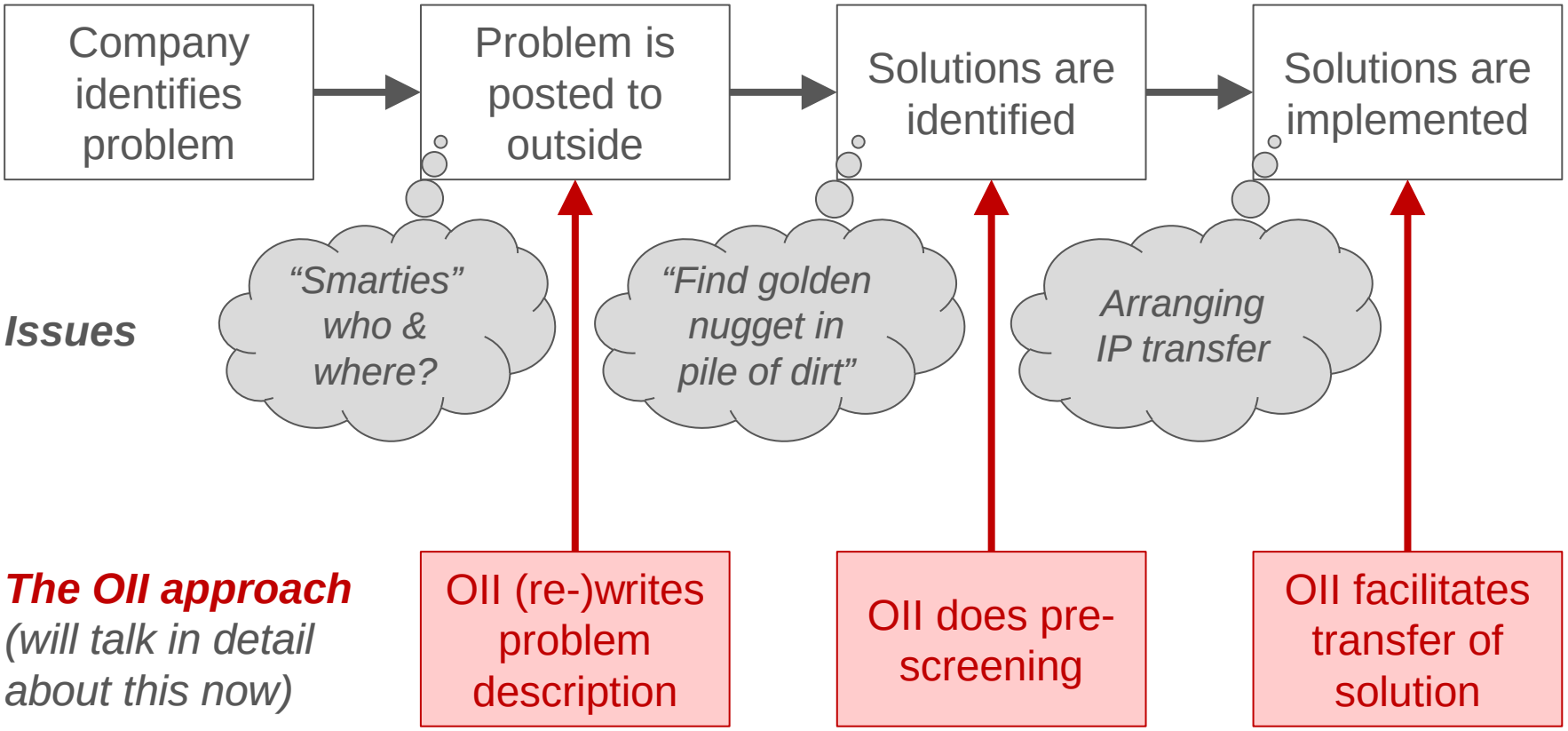
OII addressed core problems of crowdsourcing

The "standard" broadcast-search approach (vice versa for solutions)



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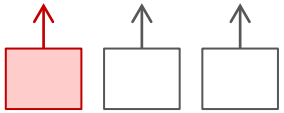

Problem description: how to reach *the* partner

- The logic of broadcast search (e.g., InnoCentive):
  - For many of the problems you face, there will be someone out there who has a solution readily available → **WHY?**
  - Thus, sharing it is relatively low-cost for them (award << R&D cost)
- In turn, the challenge becomes: **how do I phrase my problem correctly**, so that these people see that they have the solution to my problem (and vice versa)
  - OII writes the problem description to appeal to wide audience
  - Disassociates problem from original context ("chemistry problem")
- You need a superstar to do this → **not scalable!**
  - Problems of knowledge transfer: codification, stickiness, leaking, …

Source: Piller (2011), Jeppesen/Lakhani (2010), Chesbrough (2006)

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The Unknown by Donald Rumsfeld

"As we know
There are known knowns.
There are things we know we know.
We also know
There are known unknowns.
That is to say
We know there are some things
We do not know.
But there are also unknown unknowns.
The ones we don't know
We don't know."

Feb 12, 2002, Department of Defense Briefing

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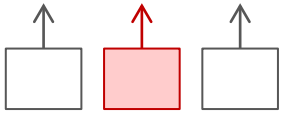

Pre-screening: only let shiny things through

- In most cases, the viability of judging a problem solution or solution application is non-trivial and requires specialists
  - Problem: a lot of research is on software → piece of cake!
- Remember the analogy?
- Matchmakers can do baseline compatibility checks
  - "Better first dates"

    → **Not scalable!**
- Move work to contributors
  - "Answer our survey"
  - "Hot or Not" model

    → **Potentially scalable?**

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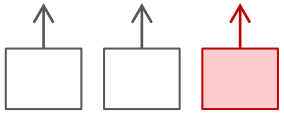

Facilitate transfer of solutions: sort out IP issues

Problems of knowledge exchange in OI…	**… and how they can be addressed by using OII**
Paradox of disclosure	Clear demarcation of boundaries and ownership
Involuntary spillovers	Problem reframing & anonymity
Contamination	Clear terms on conditions of when/how IP is transferred

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Summarizing the limits of using the OII model

- Markets which OII supposedly facilitate are super-thin
  - Very small deal flow; almost no repetition
  - What is the *right* price? No transparency, efficiency, learning
    - consumer/producer surplus, supply/demand, clearing…
- Limits to knowledge transfer to the OII
  - You need to understand what your problem is before you know that it is a problem (unknown unknown → known unknown)
    - That needs internal R&D first
  - Codifying knowledge costs a lot and eases leaking
- When and what to disclose
  - How to pre-identify “outsourceable” problems?

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So, what does that mean for the OII business model?

- **Specialization**
  - *"translation capability"* – technology experts working for OII are better on certain topics than on others
  - *technology* – certain problems and technologies may naturally lend themselves to the OII approach
  - *pool* – depending on who you attract, your pool's expertise and main motivations impact which issues you can tackle

- **Servitization**
  - This is a service-oriented business model, **like consulting**
  - This is not a scalable business model (i.e., ***not* IT**)
    - It only scales for the customer!
    - If you want to scale up, you need more people!

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Conclusions and some open questions

- OII as specific form of engagement of Open Innovation
  - May help in sourcing and selling of both solution-related knowledge and problem-related knowledge
  - OII allow to overcome some of the downsides of crowdsourcing
- Significant limits to the OII model → penny stocks?
  - What are the conditions under which the model is appealing?
  - Being an OII is a valuable, but trickier-than-you-think business
- Many issues I have not spoken about
  - How to integrate knowledge received from outside?
  - How to integrate the use of OII into a larger OI strategy?
  - Which OII to use in which situation?

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Thank you!

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