



*Introduces...*

## Open Innovation Across Sectors For Pharma, Health and FMCG

**Jim Bullock & Malcolm McKechnie**

**11<sup>th</sup> December 2015**

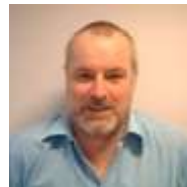
## Your Speakers

**Jim Bullock**



**iFormulate Case Studies:  
Open Innovation with Pharma**

**Malcolm McKechnie**



**Cross-Sector Technology  
Transfer in Open Innovation**

● This webinar is being recorded and will be made available  
The audience is muted and may ask questions using chat or  
question functions in GoToWebinar  
This webinar will last 45 minutes



## A Little About iFormulate

A company founded in 2012 by two experienced industry professionals...

*Combining diverse experiences, knowledge and wide range of contacts:*

...polymers, materials science, chemistry, imaging, dyes, pigments, emulsion polymerisation, biocides, anti-counterfeiting, environmental, formulation, consultancy, marketing, business development, strategy, regulatory, training, events, R&D, innovation

*Complementary network of Associates*

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## Our Services



# **Cross Sector Technology Transfer**

## **A Vital Component of Your Open Innovation Strategy**

Dr Malcolm McKechnie  
Associate Partner, iFormulate



### **Sectorial Transfer within Open Innovation and Technology Sourcing**

“Seekers” view but will also cover technology “offers” to a lesser extent

- Open Innovation
- Why companies use OI ?
- What, where and how to look with a focus on sectorial transfer
- Example Sectors
- Example common areas
- What can be the challenges?



**Open Innovation is a term promoted by Henry Chesbrough, Adjunct Professor and Faculty Director of the Center for Open Innovation at the Haas School of Business at the University of California**

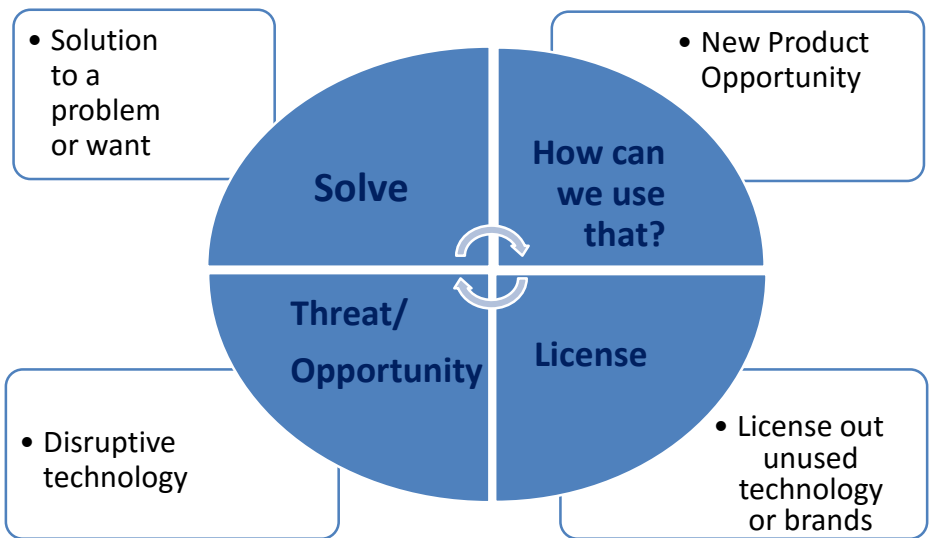
“Open innovation - companies do not rely entirely on their own research, but buy or license processes or inventions from outside their own organisation.....combines external input with internal ideas to advance a company's technology, processes or services.  
In addition, internal inventions not being used in a firm's business may be taken outside the company

Chesbrough, Henry William (1 March 2003). Open Innovation: The new imperative for creating and profiting from technology. Boston: Harvard Business School Press. ISBN 978-1578518371.



## What needs does OI typically meet?

Actively seek external partners to fuel internal innovation



## Open Innovation - What do “seekers” look for?



### Solution

Often will be well defined  
 We need one of these  
 How do we .....?  
 Is there an alternative way to...?

**Brief can be prepared**

vs



### Opportunity

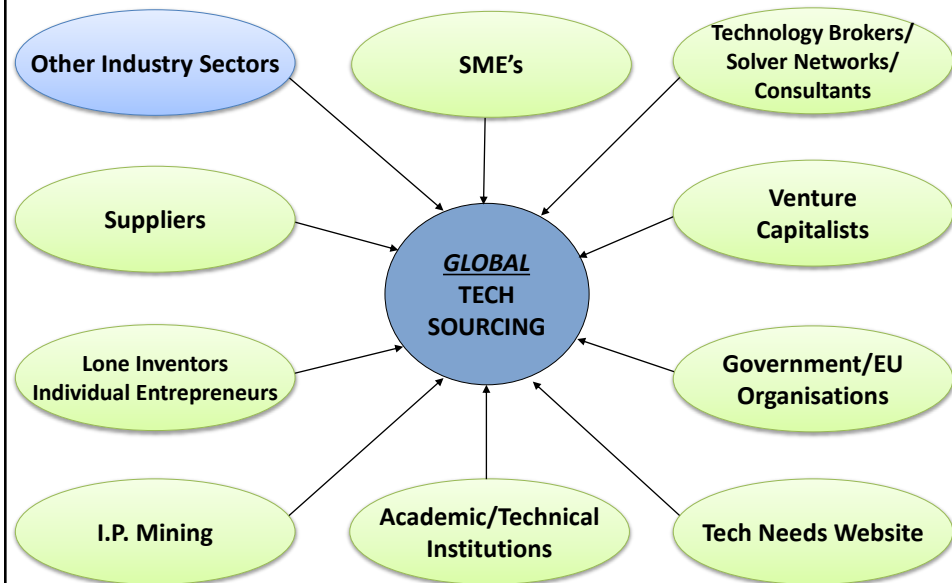
That’s interesting- what could we use that for? **Other sectors may have different approaches / technologies which may stimulate new product concepts**

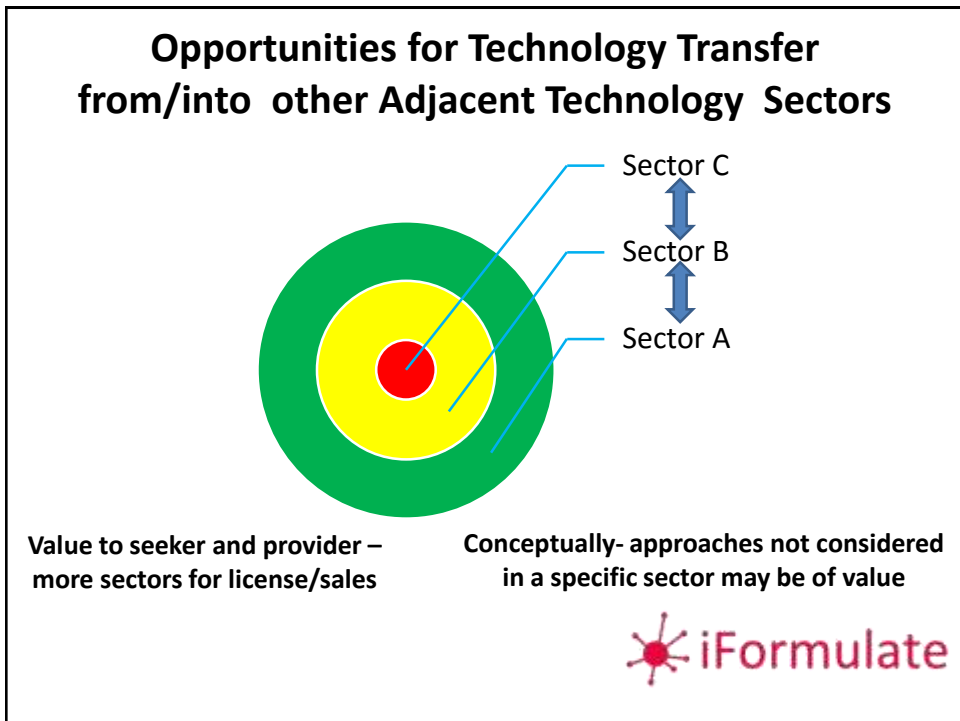
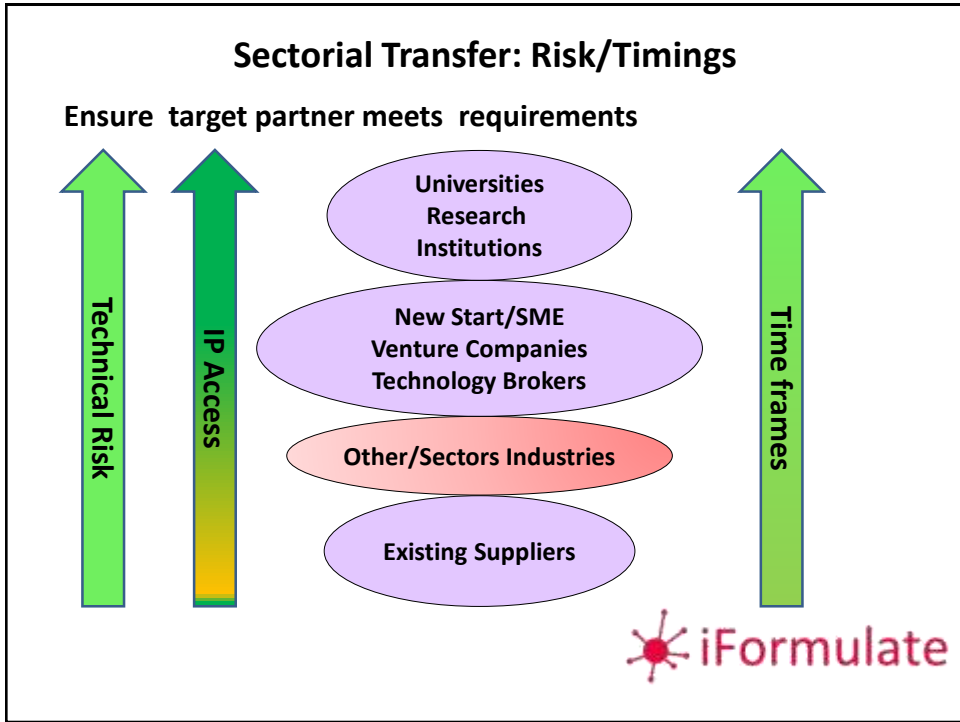
New offering  
 New benefit –unarticulated?  
 Disruptive

**MR/Consumer research/ideation and concept evaluation needed**



## Open Innovation – Where to look





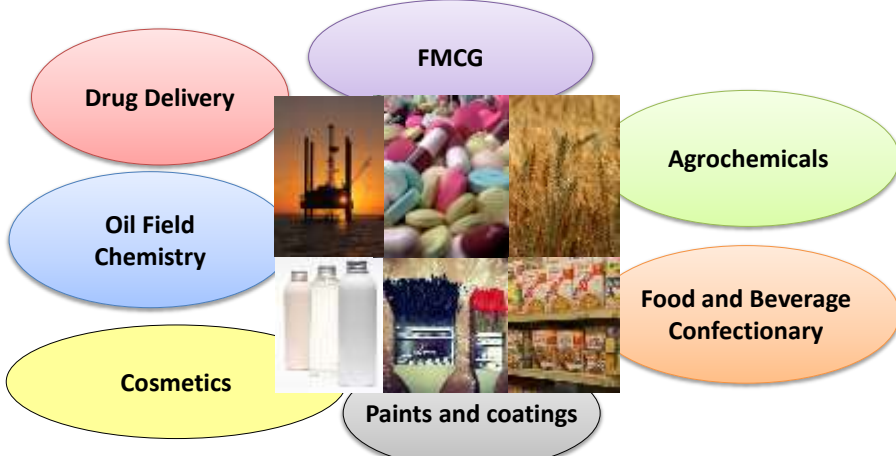
# Why of Value?

- Rapid adaptation of technology/quicker to market. Already scaled up?
- New way of thinking of technology benefits and consumer claims
- Technology with some regulatory, safety, tox/environmental information.
- IP already developed scope for further applications IP?
- “Win Win” - recipient has a new product concept and provider has a new sector
- May tie back to your current supply chain – (often “siloed” into industry sectors)



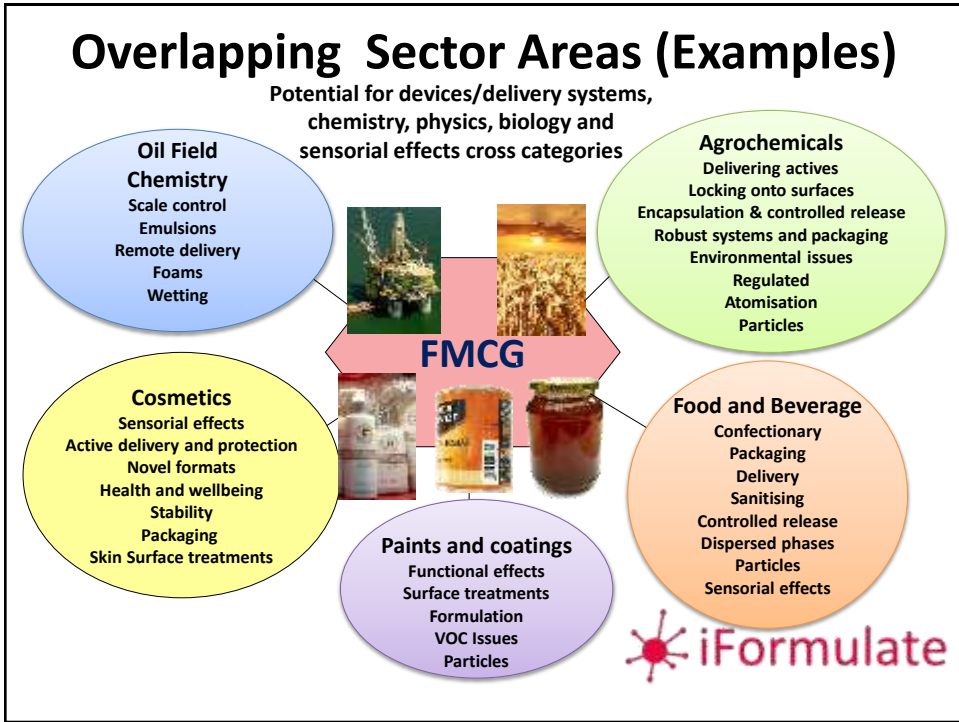
# Example Adjacent Sectors

Non adjacent not as productive/simple but may be more creative



Regulatory approval in certain sectors not always transferable but relevant background data may be available





## Enzymes in FMCG/Brewing

|  |  |
|--|--|
| <p><b>FMCG</b></p> <p>Stain removal and washing (ADW/Laundry)</p> <div style="text-align: center;"> <p style="font-size: small;">RCSB Protein Data Bank<br/>www.rcsb.org</p> </div> <p>Lipases<br/>Amylases<br/>Cellulases<br/>Proteases<br/>Mannanase</p> <p><u>Primarily stain/soil removal or fabric care</u></p> | <div style="text-align: center;"> </div> <p><b>Brewing</b></p> <p>Amylases, peptidases and carboxypeptidase are present in the barley, <math>\beta</math>-glucanase, endo-proteases, <math>\alpha</math>-amylase and pentosanases are formed during malting.</p> <p>Filtration improvers, reducing the presence of viscous polysaccharides -remove carbohydrates in the production of light beer and to induce chill proofing (papain)</p> <p>CIP detergents</p> |
| <p><b>Common theme of enzymes to break down larger molecules/proteins, carbohydrates</b></p> <p>Enzymes robustness to conditions, compatibilities, kinetics, degree of conversion, lower temp, new enzyme classes in a sector</p>  |  |

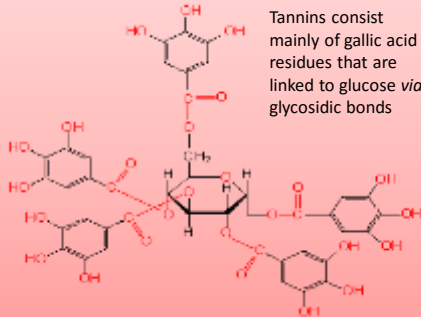
**iFormulate**



## Stain Treatments, Dye Transfer in FMCG/Brewing Example

### FMCG

The most common chromophore or coloured stains are tea, wine, coffee, fruit juices and are polyphenolic in nature and are exemplified by the tannins



### Beer Stabilisation

Removal of polyphenols/oxidised and polymerised flavanoids such as anthocyanogens, catechin and tanninogens using PVPP

Enhances colloidal stability of beers with no bitterness compromise.

Tannic acid used to precipitate complex nitrogenous material for enhanced stability

Common theme of polyphenol chemistry  
Free dye capture in laundry



## What Are The Common Challenges?

- Misaligned expectations –
  - Royalty rates
  - IP ownership
  - Timescale of commercialisation/revenue generation
- Quality of test/validation data that may require specific industry tests
- Registration/legislation in sector
- Cultural mismatch
- Change in business priorities



## So We've Seen The Potential Benefits, What Can We Do About The Pitfalls?

- Concerns on IP and secrecy – how open can it be?
- Disparity in stakes, size, objectives, approach of partners
  - Typical model is large multinational seeking new technologies from (small) technology providers
  - What is “life or death” for the small provider might be “just another interesting project” for the multinational
- How to build trust?



Images: David Castillo Domínguez at freedigitalphotos.net

## Case Study 1:

### Four Company Open Innovation Roadshows



## How Could We Avoid the Pitfalls of Open Innovation?

### Sharing Challenges

- Each party must contribute and potentially benefit in equal measure
- Each party is risking the same

### Parties from non-competing industries

- Participants with common challenges
- No interest in IP for other industries
- Make ground rules clear

### Trust

- Take time to get to know your opposite numbers and understand their businesses



## Case Study 1: How We Made It Happen

### iFormulate: Open Innovation Roadshows in Formulation

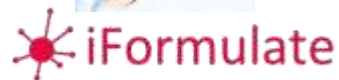
#### Invitation only workshops

#### Four participant companies

- Multinationals with depth in science and engineering
- Could work with smaller companies - need to be comparable and compatible – parity is important

#### Four different industries – not competing

- Food
- Pharmaceuticals
- Crop Protection
- Home and Personal Care



## Case Study 1: How We Made It Happen

### iFormulate: Open Innovation Roadshows in Formulation

#### iFormulate developed format with companies

- No NDAs. Use “Chatham House Rule”.
- Each company acts as host in turn – attendees from other companies
- Host sets (technical) challenges relevant to their businesses
- Small group sessions for idea and experience exchange
- Develop areas of common interest for collaboration

#### But it’s not just about the purely technical

- Host provides dinner for attendees – building trust, networking.
- Scene-setting keynote presentation from host side – business – the big picture
- Opportunities for lab / plant visits during day

“When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.” <http://www.chathamhouse.org>



## Case Study 1: iFormulate Open Innovation Roadshows

### Outcomes

- 108 “attendances” at four workshops over 11 months
- Mainly R&D scientists and engineers, also commercial, supply chain, manufacturing and OI practitioners.
- 15 company challenges worked on
  - Varied topics including stabilisation, formulation microstructure, delivery, formulation processing and manufacturing, end-user experience
  - Experience sharing, contact sharing, idea generation
  - Follow up options suggested
- Six concrete project areas defined for potential collaborative projects to be worked up
- Countless 1:1 discussions and several “offline” meetings” between participant companies.



## Case Study 1: iFormulate Open Innovation Roadshows

### Benefits, Observations and Some Surprises

- Participant companies need to be committed and have a named “leader” for the Roadshows.
- Selection of topics and participants managed carefully before Roadshow event.
- Seen as highly effective (and cost effective) by participant companies.
  - High degree of openness and trust demonstrated
- Beneficial technical exchange between specialists was expected
  - but companies also used Roadshows as a development opportunity for less experienced employees
  - Roadshows also enhanced communication within companies
- Discussions much more wide ranging than expected
  - Customer experience, regulations, manufacturing, supply chain...as well as R&D.



## Case Study 2:

## Targeted Innovation Workshop



## Case Study 2: Targeted Innovation Workshop

- iFormulate commissioned by a large Pharma company to assist **with ideas, technologies, contacts and project building** to support the development of a specific theme related to sensorial properties
- Recognised opportunity to leverage **cross-industry** expertise for mutual benefit
- The chosen theme had links to required technical expertise in the food/beverage sector
- Objective: identify consortia and interest groups for future collaborative projects



## Case Study 2: Targeted Innovation Workshop Food Expertise for Pharma

### Steps:

- iFormulate researched theme and identified centres of expertise, individuals and technologies
  - Focused on food and pharma industries
  - Academic, large and small companies
  - Focused on expertise new to the client
- Produced report with recommendations
- Agreed format of workshop
- Hosted an invitation-only workshop
  - Additional attendees invited by client
- Produced final report and follow-up



## Case Study 2: Targeted Innovation Workshop Food Expertise for Pharma

### Workshop:

- Around 25 attendees, one day.
  - Scientists from client company
  - Academics, research institutes – focus on food
  - Innovative SMEs in food and pharma
  - Other pharma collaborators (CRO, big pharma)
- Structured networking session
- Introduction to the theme and industry relevance
- Two themes tackled in small group sessions
  - Explain theme context and importance in detail
  - Explain different approaches to tackle the topic
  - Idea generation, classification
- Large group wrap-up session
  - Develop ideas, identify interest groups



## Case Study 2: Targeted Innovation Workshop Food Expertise for Pharma

### Follow-Up/ Benefits:

- Beneficial workshop for all attendees
  - Identified significant areas of expertise and new understanding of value to the client which may be followed up individually “off-line”
  - Also provided new contacts and potential collaboration/development partners for academic and SME attendees
- Workshop identified three themes and members of potential consortia for R&D collaboration
- Project consortia could then be developed



## Summary

- There is potential **value for pharma and related areas** in **new innovation models**, e.g.
  - Multi-industry **Open Innovation Roadshows**
  - Cross-industry **Targeted Innovation Workshop**
- **Topics** can be obvious common technical areas (e.g. formulation) – can also encompass manufacturing, quality, consumer insight, logistics etc.
- **Benefits and opportunities**
  - Expertise from other industries
  - Leverage collective resources
  - Expand personal networks. Personal development opportunity
  - Enables follow on consortia and collaborations
  - Companies large and small, academia and institutes can all benefit
- **The models can be adapted to suit participants needs**
  - Ask us!



## Other Ways We Can Help You

### Open Innovation

- Help evaluate, design or improve your OI system

### Technology Profiling Assignments

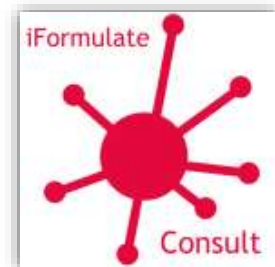
- “we need some new ideas for our development programme” (scouting)
- “we want to know about the pros and cons of technology x, and who we should talk to”
- “what markets could/should we enter with our technology?”

### Problem Solving assignments

- “we want some help solving a problem with our formulation”
- “we want some help developing a new formulation”

### Training in Formulation

- Custom “in-house” training designed with client
- Open short training courses





# Thank You...and Questions

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**“Crystallisation Science and Agrochemical Formulations”**  
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