Good practices for innovation: Case studies with Irish food industries

Shivani Pathania, Ph.D.
Food Formulation Scientist
Teagasc Food Research Centre, Ashtown, Dublin 15, Ireland

Shivani.pathania@teagasc.ie
Content

- Introduction
- Innovation drivers
- Why Innovate together?
- Case studies
- Lessons learnt
Innovation
noun in•no•va•tion

1: the introduction of something new
2: a new idea, method, or device

Meriam–Webster Dictionary
2015 Merriam–Webster, Incorporated

- Process of creating and putting into use combinations of knowledge from many different sources
- Knowledge may be brand new, but usually it is new combinations of existing knowledge
Changing business environment

- Global trade
- Economic cycles
- Government policies

INNOVATION DRIVERS

- Intensified competition

- Technological advances
  - Automation
  - Cheaper technology
  - New ingredient

- Changing customers and needs
  - Population profiles
  - Increased choice

- Global trade
- Outsourcing
- Market diversification
Innovation requires...

- Government policy to support collaborations
- Money from Industry and “brain” from academics
- Funding from both sides
  - To solve real life and technological issues
- Identification of
  - Relationships
  - Common goals
  - Resources

"Building collaborative relationships with universities…is by far the best way to ensure they are responding to industry needs”

– Lord Mandelson
Why innovate together?

- **Advantage for research organisations**
  - Money/funding for the group
  - Access to industry resources, knowledge and contacts

- **Advantage for industry**
  - Access to world class researchers
  - Access to state of the art knowledge of the field
  - Access to innovative findings

- **Consortium**
  - To solve common issues
  - Generalized results
  - Less costs
Technology Centres

[Image of Technology Centres logos and names]

ENTERPRISE IRELAND
where innovation means business

TECHNOLOGY CENTRE
SUPPORTED BY ENTERPRISE IRELAND

DPTC
DAIRY PROCESSING TECHNOLOGY CENTRE

[Logos of various companies and institutions]

Ceagasc
Agriculture and Food Development Authority
DPTC research programme
Go ahead meetings:

Project outline

Stakeholder meetings

Set target

Find/spark interest

Project Scoping document

Get to work

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Technology</th>
<th>INTEREST</th>
<th>RANK</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technology 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Technology 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Technology 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Technology 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Technology 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Technology 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Technology 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Technology 8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please rank from a scale of 1 to 5.

1 = Least preferred to 5 = strongly preferred
Experimental plan

Conduct trials

Analyse results

Dissemination

The way we did it!!
Case study I: Application of Hydrodynamic cavitation (HC) on instant rehydration of dairy powders

Food for thought

- **Industry comments**
  - Ireland manufacture ingredients, this is secondary processing
  - Powder functionality does not concern Irish manufacturers

- **Rebuttal**
  - Saves processor’s 16h in one process
  - Could significantly improve sales of difficult to rehydrate powders
Results:

Industry outcome

- Innovation in dairy sector
- Cause and effect study
- TRL >8
- Companies adapting the technology

Project output

- Research article
- Technology demonstration
- Further research on chemical effects of HC on product matrix
Case study II: Novel Application of forward osmosis (FO) in concentrating protein concentrates.

- Industry comments
  - Already using commercial membrane filtration systems, interested in novel applications of FO
  - Interested in knowing the concentration potential

- Response
  - Positive
Results:

Potential industry outcome

- Ability to concentrate dairy streams by non-thermal process
- Scalable unit available

Project output

- To be published
- Technology demonstration
- Novel non-thermal technology scouted, application analysis performed

EvapEO forward osmosis unit
Seven best practices

1) Define the project’s strategic context as part of the selection process
2) Select *boundary spanning* project managers
3) Share, with your team, the vision for how the collaboration can help the company
4) Invest in long-term relationship

5) Establish a strong communication linkage with the research team

6) Build broad awareness of project within the company

7) Support the work internally both *during* the actual contract and *afterwards*, until the research can be exploited

Lessons learnt

✓ Move towards open innovation paradigm
✓ Go beyond the recognition of problem: provide actionable solutions
✓ Project outcomes must be aligned with company’s interests
✓ No result is also a result, record it
много вам хвала