Evaluating Innovations
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Defining Evaluation
*The action of appraising or valuing (goods, etc.); a calculation or statement of value; (OED)*

- Evaluation is central to assess the value of an innovation and identify risks and failure points based on:
  - Evidence of a market and customer interest
  - Technical feasibility
  - Novelty
  - Team experience and strategy
  - An overview of financial projections

Example Innovation Evaluation

- The University of Nottingham proposes to give all first year undergraduates an iPad with access to all their lecture materials when they arrive
- What could possibly go wrong?

How to Evaluate
- Studies agree upon need to evaluate
- Debate regarding how best to do this
- Quantitative modelling based upon past performance vs qualitative value judgements
- Agreement that cannot predict success but can pre-empt failures
- Need checklist of appropriate ‘failure’ criteria

win2 Evaluation Criteria
(www.winsquared.co.uk)
- What will be the impact upon society?
- Is the market attractive?
- Can it be made, will it work, will it pay for itself?
- Has the company the necessary experience?
- What is the appropriate strategy?
(Udell 98, University of Nottingham 2002)
Societal Impact

- What is the effect upon people's welfare?
- Does it meet current laws/regulations?
- What are the safety implications of using or abusing this innovation?
- What will be the impact upon the environment of this innovation in use or when obsolete?

VegUlike

- Discovered a new recipe and method to process natural, plant-based sweetness into a mist that produces a sweetened flavour
- Without changes to texture, appearance & shelf-life
- Properties remain stable at high and low temp.

Welfare

- Child
  - Enjoyment
  - No extra calories
  - Portion controlled

- Parent
  - Acceptance
  - Convenient
  - Natural source & organic
  - Food waste

- Sourcing & Retail
  - veg sales
  - Premium price

Degree of Novelty

- Also consider the degree of novelty involved:
- Incremental change
- Online appointments for GPs
- Radical Change
- Skype consultations
- Discontinuous Change
- AI diagnosis via smart sensors

(Mosey (2005), Understanding new to market product development, IJOPM.)

Market Attractiveness

- What are the size and dynamics of the potential market?
- How does it compare with the competition?
- Are there any barriers to acceptance?
- Can it be made and will it work?
- Will it make money!!!
Market Attractiveness

- What are the size and dynamics of the potential market?
- How does it compare with the competition?

Unique Selling Points

- long-distance
- highly active - 15 ft radius
- all biting insects
- long-lasting
- plant-based
- value for money
- low-maintenance
- does not smell
- not a hazard

Approved by WHO & CDC

Feasibility

- Barriers to Acceptance
  - Will it work?
  - Can it be made & will it work
    - Technology proven and tested in prototype
    - Scale up issues
  - Will it make money

<table>
<thead>
<tr>
<th></th>
<th>£</th>
<th>$</th>
<th>Gross Profit Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Production</td>
<td>1.13</td>
<td>1.89</td>
<td></td>
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<tr>
<td>Wholesale Price</td>
<td>8.50</td>
<td>14.20</td>
<td>87%</td>
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<tr>
<td>Recommended Retail Price</td>
<td>20.00</td>
<td>33.50</td>
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</tbody>
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Market Attractiveness

- Size and Dynamics of Market
  - 2002 market value: USA: £100 million
    - worldwide: £4 billion+
  - Comparison with Competition

Feasibility

- Barriers to Acceptance
  - Will it work?
  - Can it be made & will it work
    - Technology proven and tested in prototype
    - Scale up issues
  - Will it make money

Example - Pro cork

- Synthetic cork grown in the lab
- No fungus
- No cork taint in wine.
Feasibility

- Can it be made & will it work
  - Technology proven and tested in prototype

- Will it make money
  Traditional cork 5p, New Pro cork 20p (5p profit)
  5% of fine wines lost to cork taint
  £10 per bottle x 5% = 50 p
  Pro cork saves 50p – 20p = 30p per bottle

Market and Industry Research Resources

- Market research (Mintel, Keynote)
- FAME (Financial Analysis Made Easy) (Industry averages (Profitability; Revenue; ROIC)
- Industry bodies (e.g., Aerospace/IATA; OFCOM etc)
- Business and Tech Press (FT, WSJ, TechCrunch)
- Company websites (e.g., Annual reports, Press releases)
- Investors’ Websites and Technology Transfer Offices

Necessary Experience

- Marketing – mass vs niche
- Technology – develop and manufacture
- Finances – equity and cash flow
- Management – partners and employees
- Production – quality vs price vs volume
- Distribution – volume vs specialist

Example: Ooho

- Edible and biodegradable water container
- Made from algae and calcium carbonate
- Cost 1/5 the cost of a water bottle

Appropriate Strategy

- Should the innovation be exploited using partner organisations?
- Should the innovation be exploited as a new venture?
- How should the innovation be distributed?
Ready Yet Strategy

Could not raise £2.5m for new venture
Patent protected but who to license to?
- Label Manufacturers
- Avocado Growers
- Avocado Importers
- Distributors
- Supermarkets

The Perfect Search Engine

"understands exactly what you mean and gives you back exactly what you want."
Larry Page

Not the perfect search engine

The Universitas 2016 Global Ingenuity Challenge
This year's challenge looked for creative responses to problems associated with sustainable housing. This was a deliberately broad challenge to encourage the widest possible range of responses.
Conclusions

- Can predict failures using generic criteria
- However even if ‘passes’, no guarantee of success but does highlight areas for further investigation/development work.
- Cases shown here are ‘obvious’ as we know the outcome, now apply to your real innovations, where the outcome is uncertain.