Opportunity Recognition for Highly Profitable Projects in Large Corporations

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Definition

▲ **Opportunity Recognition**

- Match between an unfulfilled market need and a solution that satisfies that need (Bhave, 1994).

▲ **Studying Entrepreneurial Behaviors**

“Who owns that land?” (Hill, 1995)
Research Question

How does opportunity recognition occur in highly profitable products in large corporations?
Agenda

- Literature Review
  - Entrepreneurial
  - Corporate

- Case Study Methodology

- Case Studies

- Observations and Conclusions
Large vs. Small Company

Big companies use most of their resources trying to keep people from getting mad at them. Small companies have more flexibility.

Big Company

Hmm… a magazine reader survey

I better form a task force to respond before someone gets mad at me.
Large vs.Small Company

Big companies use most of their resources trying to keep people from getting mad at them. Small companies have more flexibility.

Big Company
HMM...A magazine reader survey
I better form a task force to respond before someone gets mad at me.

Small Company
Big Ralph fell in the vegetable soup vat!!!
Large vs. Small Company

**BIG COMPANIES** USE MOST OF THEIR RESOURCES TRYING TO KEEP PEOPLE FROM GETTING MAD AT THEM. SMALL COMPANIES HAVE MORE FLEXIBILITY

**BIG COMPANY**
- HMM...A MAGAZINE READER SURVEY
- I BETTER FORM A TASK FORCE TO RESPOND BEFORE SOMEONE GETS MAD AT ME

**SMALL COMPANY**
- BIG RALPH FELL IN THE VEGETABLE SOUP VAT !!!
- QUICK CHANGE ALL THE LABELS TO "CHUNKY CLASSIC" AND DOUBLE THE PRICE !!!
Entrepreneurial Literature

- **Long and McMullian (1984)**
  - Proposed a model of opportunity identification with four stages: pre-vision, point of vision, opportunity elaboration and decision to proceed.

- **Teach, Schwatz and Tarpley (1989)**
  - Examined how software firms identified their first market opportunity and found 4 distinct clusters: Searchers, Pin Stripes, Innocents and Blue Jeans.

- **Christensen and Peterson (1990)**
  - Based on case studies of 15 ventures and a survey of 76 companies concluded that:
    - Specific problems and social encounters are often the sources of ideas.
    - Profound market and technology knowledge is a prerequisite for venture ideas.
Entrepreneurial Literature

Kaish and Gillad (1991)
- Founders of companies (51) vs executives of large companies (36)
- Found that founders:
  - Spent more time searching for opportunities in their off-hours.
  - Employed different information sources.
  - Paid special attention to risk cues.

Gaglio and Taub (1992)
- Found that business owners and corporate managers approached the search for new business opportunities differently.

Bhave (1994)
- Found OR could be either:
  - Externally stimulated - decision to start a venture preceded OR.
  - Internally stimulated - entrepreneurs discovered a problem and created a venture to fulfill the need.
Entrepreneurial Literature

- **Zietsma (1999)**
  - Compared 52 high technology entrepreneurs vs 22 senior managers in technology business.
  - Concluded that OR was not the key issue, but confidence, consideration of risk and commitment to the venture.
Entrepreneurial Literature

However, none of these studies examined how entrepreneurs recognized the “great” opportunities.
Entrepreneurial Literature

**Hills and Shrader (1998)**
- Studied exceptionally successful entrepreneurs (53) vs. randomly selected entrepreneurs (187).
- Concluded that there were more similarities than differences.
Corporate Literature

**O’Connor and Rice (2001)**

- Studied 12 radical projects longitudinally over time
- Found that opportunity recognition:
  - Was often capricious.
  - Was dependent on chance events.
  - Required supra-normal motivated individuals.
  - Required rich informal communication networks.
  - Initial assessment was highly dependent on the champions capacity to clarify the technology.

**Radical Project (Definition)**

- Offers 5-10X (or greater) improvement in performance
- Or 30-50% improvement (or greater) reduction in cost
Corporate Literature

- O’Connor and Rice (2001)
  - Studied 12 radical projects longitudinally over time.
Research Question

How does opportunity recognition occur in highly profitable products in large corporations?

Question still remains unanswered?
Agenda

✓ Literature Review
  ✓ Entrepreneurial
  ✓ Corporate

✿ Case Study Methodology

✿ Case Studies

✿ Observations and Conclusions
Case Study Methodology

Project Selection

Wheelwright and Clark (1992)
Case Study Methodology

Project Selection

Radical Projects
- Offers 5-10X (or greater) improvement in performance
- Or 30-50% improvement (or greater) reduction in cost
- Typically involve high risk technologies (i.e. inventions yet to occur)
Case Study Methodology

Project Selection

Platform Projects
- Establishes a basic architecture for the next generation product and are substantially larger in scope than incremental
- Typically DO NOT involve high risk technologies

Introduction of Kodak disposable 35mm (circa 1988)
Panoramic version (1989)
Waterproof version (1990)

Incremental Extensions

Platform
Case Study Methodology

- Met with “all” team members involved in the discovery effort
- In-depth interviews and re-interviews were all transcribed
- Reviewed all available corporate memorandums
- Attempted to resolve any conflicting stories
- Data presented back to company for review

**CAUTION**
Retrospective studies are subject to post hoc rationalization and historical revision
A total of 8 case studies have been done, though only 5 have been completely analyzed.

**Platform Projects**
- Hellman’s Low Fat Salad Dressing
- Skippy Low Fat Peanut Butter
- Reduced Cost Chemical for DuPont’s Cyrel Flexographic Printing Plates

**Radical Projects**
- ExxonMobil Process Analytics and Software
- ExxonMobil Novel Chemical Solvent (Flexsorb) for removing toxic hydrogen sulfide
- DuPont’s Digital Color Proofing
- DuPont Cyrel environmental friendly Flexographic Printing Plate
- Corning Fuel Cell
Skippy Low Fat Peanut Butter

- Customer Trend: Low Fat
- Large Share of "Fat" Market
- Competitor Movement

Search for Methods to Manufacture
- Anecdotally found in different industries
- Each competitor uses different method

Solution 1

Solution 2

Solution 3
- All competitors come up with same solution

Product N Positioned as a high nutrition

Reduced Fat

1970

1988

1990

Nov 1993

Launch
- Project is VERY successful
- Almost 1st to market
- Captures approximately 40% of the market

Lots of iteration here

Technology Solution

Base Test
- Look, taste, feel
Agenda

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¶ Case Study Methodology

¶ Case Studies

‡ Observations and Conclusions
Platform Observations

**Trigger Event**

Something “triggered” senior management to recognize the opportunity and direct resources to the project.

- **Hellman’s low fat dressing**
  - Trigger – Need to increase revenue due to decreasing market size of company’s flagship product

- **Skippy Low Fat Peanut Butter**
  - Trigger – Realization that a competitor started working in this area.

- **Flexigraphic Printing Press**
  - Fire which destroyed the manufacturing capability of the supplier forced the R&D department to find new precursors for the solvent
Platform Observations

Senior Management Sponsorship

Senior management was a key sponsor of all of the projects

- **Hellman’s low fat dressing**
  - Sponsorship – Senior Management ended up doing an acquisition in order to obtain the needed manufacturing capacity

- **Skippy Low Fat Peanut Butter**
  - Sponsorship – Senior Management assigned a full time team and was actively involved in their activities.

- **Flexigraphic Printing Press**
  - Sponsorship – Senior Management made it the ONLY activity of the R&D department
Platform Observations

Absence of High Risk Technologies

The key issue preventing product launch was NOT a technology invention that needed to occur.

- **Hellman’s low fat dressing**
  - Key Issue – Adequate Manufacturing capacity was needed.
- **Skippy Low Fat Peanut Butter**
  - Key Issue – Mixing Technology, which was found in an analog food industry, which could provide the right taste and texture.
- **Flexigraphic Printing Press**
  - Key Issue – Found a replacement chemical after an extensive world wide search. Did not have time to invent a new one.
Radical Observations

Superb Highly Inventive Scientists

The inventions occurred because of these individuals

- **Breakthrough Process Analytics**
  - Inventor – First set of inventors used the wrong technology. 2\textsuperscript{nd} group of inventors where expert in the right technology.

- **Flexsorb**
  - Inventor – Has over 90 patents and is recognized as one of the most prolific inventors at ExxonMobil.
Radical Observations

Fortuitous Discovery

The inventors happened to be the ones with the core competence to solve the problem. The solutions were “ideal” even in hind sight

- **Breakthrough Process Analytics**
  - Discovery - The analytic process, FTIR, was the EXACT technology needed to solve the problem

- **Flexsorb**
  - Discovery - Inventor was expert in this novel chemical reactive solvent which fortuitously had the right molecular structure to be soluble in hazardous environmental gases. This continues to be the best solvent - now 10 years post discovery.
Radical Observations

Product Champions

The inventors themselves championing their technology

- **Breakthrough Process Analytics**
  - **Champion** - When the first approach failed the inventor persuaded the company to direct resources to his new approach.

- **Flexsorb**
  - **Champion** - The inventor for this novel chemical was in a continual “search” mode looking for applications which it could be applied to.
Caution

* Results based on completed analysis of only 5 case studies and partial analysis of additional 3.

* Retrospective study which is subject to post hoc rationalization and historical revision.
Conclusions

**Opportunity Recognition**
- Opportunity (i.e. unfulfilled market need was known for a long time).
- Senior Management, needed to recognize the opportunity, and trigger directed effort.

**Insight**
- Creating triggers (ex. future scenario planning) may allow senior management to begin platform projects earlier.
Conclusions

Radical Projects

- **Opportunity Recognition**
  - Holy Grail (Unfilled market need but invention was needed)
  - Technology Push (Technology competence looking for an opportunity)

- **Insight**
  - Clear visions of the holy grail should exist in companies
  - Superb Highly Inventive Scientists needed with a supportive culture which will allow them to champion unsupported technologies.
Future Research – a plea

- **Opportunity Recognition research should be directed at where significant success occurs**
  - i.e. high profit and/or very successful entrepreneurs

- **Product development space consists of incremental, platform and radical projects NOT just incremental and radical**