SECTION 4 (13.10 - 13.45):
Managing Innovation
Controlled Freedom

The Important Business Factors of Innovation

Outline for this afternoon...

Section 4: 13.10 – 13.45
Innovation Management

Section 5: 14.00 – 14.45
The Product Development Process

Section 6: 15.00 – 15.45
Integrated Product Development

Round-up: 15.45 – 16.00
Final round-up

16.00: Put the Fluoxetine away, we’re done!

4th Section - Learning objectives

To be able to:

1. Evaluate the scope of activities related to innovation management.

2. Identify important business criteria, trade-offs and innovation measures.

3. Follow the four stage innovation management model.

4. Identify the leadership roles associated with your project work
**Typical product development figures**

- Lifetime sales $100,000,000
- Cost of delay $470,000 per month
- Profit 16% of sales
- Product costs 63% of sales

Smith & Rienertsen, “Developing Products in half the time.”

**Rules of thumb financial analysis**

<table>
<thead>
<tr>
<th>Reduction in Life Cycle Profits</th>
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<tbody>
<tr>
<td>A</td>
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<td>B</td>
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<td>C</td>
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<td>D</td>
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- 1% Over Development Expenses
- One Month Delay
- 1% Product Cost Overrun
- 1% Decrease in Unit Sales

**Important Tradeoffs in Design**

- Development speed
- Product cost
- Product performance
- Development program expense

**Price Erosion**
Changing Business Environment

The Importance of Delay Varies

PERCENT REDUCTION IN LIFE CYCLE PROFITS

<table>
<thead>
<tr>
<th>Delay Type</th>
<th>6 Month Delay</th>
<th>50% Expense Overrun</th>
<th>Product cost 9% High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce Market</td>
<td>33</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>5 Year Life</td>
<td>15</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>10 Year Life</td>
<td>22</td>
<td>5</td>
<td>45</td>
</tr>
</tbody>
</table>

Economic Analysis

- Even simple models are better than none
- Pay attention to price erosion assumptions
- Treat cost and performance problems as temporary
- Convert results to decision rules
- Use a cross-functional team
- Do modelling early in the process
- Focus on comprehensible rather than elegant models
- Treat speed as a business decision not a philosophy

What to make of Product Development Philosophies

IDEO: "FAIL OFTEN AND EARLY"

James Dyson: "Each failure, the 5126 failures taught me so much. Success teaches you nothing."

How applicable is this philosophy to all products and industries?

The reality of time to market

Half of all new product launches are late to market!!!
Best from the Worst

- An astounding 77 percent of development projects hit their profit targets in top performing firms. In poor performers, only one project in four achieves its profit targets.
- Top performers have an admirable 79.5 percent commercial success rate for development projects – poorer performers have half the success rate.
- Top performers achieve 38 percent of total sales from new products launched in the previous three years – poor performers have 0 percent.
- The great majority (79 percent) of top performers’ projects reach the market on schedule (versus only 25 percent for poor performers).
- And the slip rate for top performers is remarkably low at 17 percent (versus a high of 44 percent for poor performers).

Managing Innovation

A number of tools can be used to speed-up the front end:

- Create long term product plans
- Provide excess capacity in development budgets
- Break development funding into pieces
- Develop screening approaches for new ideas
- Establish measurement systems for cycle time
- Develop bimodal planning and approval processes
- Create functions to manage development

Measurements of the process

<table>
<thead>
<tr>
<th>PERFORMANCE MEASURES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break Even Time</td>
<td>Time from first dollar spent to break even</td>
</tr>
<tr>
<td>Idea to Shipment Time</td>
<td>Time from idea identification to first customer shipment</td>
</tr>
<tr>
<td>Development Cycle Time</td>
<td>Time from first dollar spent to first customer shipment</td>
</tr>
<tr>
<td>Victory Margin</td>
<td>Number of months ahead of next 3 closest competitors</td>
</tr>
</tbody>
</table>

Bimodal Process

In some cases it is worth developing a bimodal process to respond to the dramatic differences in the value of time.

Functions of Management

- Planning
- Controlling
- Organizing
- Leading
- Decision Making, setting goals and activities
- Monitoring and evaluating progress
- Conveying a sense of purpose and vision

Innovation Management

Effective Management is essential because Innovation deals with these contextual factors:

- Uncertainty
  - technology, consumer, market
- Complexity
  - expertise
- Messy/untidy
  - false starts, external events, chance
- Disruptive
  - changes in organization
- Creative
  - improve conditions for creativity
Functions of Management

Let us go through the model

5 steps in Project Management
1. Determine the goal(s)
2. Identify the tasks or activities to be undertaken
3. Estimate the duration of the activities/tasks
4. Determine the sequence in which the activities/tasks have to be completed and link them into the overall model of the project
5. Develop a project plan that provides an overall schedule for the project

Gantt (bar) chart: Activity vs. duration

Project Management network
Interconnections between tasks

Development Funnel
A structured (systematic) approach to getting from an idea (ideas) to the successful launch of a new product or service

Two dominant techniques used at this stage:
- Project management
- Development funnel
Controlled Convergence

Aspects of Work affected by Structure

Why is the internal shape or structure of an organisation so important and how does it facilitate innovation?

Internal structure affects:
- Communication channels
- Flows of information
- Working relationships
- Work practices
- Work environment
- Corporate culture

Knowledge transfer (absorptive capacity)

Must cope with uncertainty and unpredictability

Organisation types

Typology of Corporate Venturing

In a management context: Through internal structural devices

Tidd and Taurins, 1999

Direct Integration

- No separate entity created to conduct innovation
- Easy to create
- Fits existing corporate culture
- Relies on an innovative culture from parent company
- Can suffer from ‘lock-in’

Dedicated business unit

- A separate entity
- Separately accountable
- Typically for products with very short development phases
- Incremental innovation
**Independent venture unit**

- Radical innovation department
- Greater informality, teamwork, creativity and dynamism.
- A company within a company

*Google is perhaps the extreme*

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**New venture**

- Separate company and entity
  *Though parent may be stakeholder*
- Greater autonomy
- Greater focus on goal

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**Leading**

**Leadership** is stated as the “process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task.”

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**Motivational Schemes**

Practices and schemes developed to enable employees to contribute actively to innovation

- Bootlegging *(Augsdorfer 2005)*
- Ideas programmes
- Research clubs

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**Corporate Culture supporting Innovation**

Innovative companies generally promote:

- Outward-looking orientation
- Facilitating communication
- Openness to new ideas
- Challenging established ideas
- Acceptability of failure
- Promotion of evaluation and reflection
The Stage-gate Process

Summary

- Tools enable managers to provide a degree of structure in NPD
- Management of innovation should increase the prospect of success in NPD
- Management helps manage innovation but managers and employees still have to "Innovate!"

Meeting the learning objectives?

To be able to:

1. Evaluate the scope of activities related to innovation management.
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Exercises (in pairs)

1) Who will/has performed the various leadership roles in a development projects involving you?

2) If you haven't already done so:
   A. Draw out a Gantt chart for your project work (slide 28)
   OR:
   B. Draw out a task connectivity diagram (slide 29)

3) Write 3 questions that you will ask of your project company in order to determine the important trade-offs involved in your project work (slide 11).

Any Questions?

Back by 14.00