Product Design and Development

Chapter Objectives
1) Define product and describe categories of product development
2) Explain where product ideas come from
3) Explain how an idea becomes an opportunity and describe four types of utility
4) Explain how to research an industry
5) Forecast demand for a product
6) Learn breakeven analysis to estimate number of sales units at which net income is zero
7) Describe process of developing a product that meets customer needs
8) Learn how to protect product with patent

Product

• “...something that can be marketed to customers...provides...a benefit and satisfies a need.”

Tangible v. Intangible
(Good) v. (Service)

Types of Product Developments
1. New-to-the-market
2. New to the company
3. Improvement in an existing product
4. Extend existing product line

Sources of New Product Ideas
- Entrepreneur = Creative
- Solicit people within the organization
  • Marketing
  • Sales
  • Research
  • Manufacturing
  • "Entrepreneurial" Units
- Outside
  • Customers
  • Competition

Sales from New Products

Companies in the top third of their industry spend 6% of sales on R&D; whereas companies in the bottom third get only about 5%.
Customers

• “...buy products to fill unmet needs and because they expect to derive some value or benefit from them.”

Utility

December 15th

• Time
• Place
• Ownership
• Form

When Is an Idea an Opportunity?

Ask yourself:

1. Who would my customers be?
2. Why will customers buy the product from me?
3. How will customers benefit from my product?

Industry

• “...a group of related businesses.”

Understand Industry

✓ Evaluate
  • Segment Market
  • Find Niche- Unmet need
✓ Assess Competition
✓ Understand Customer Needs
✓ Forecast Demand
  • Similar Businesses
  • Potential Customers
  • Published Industry Data

Assessing Competition

✓ Industry sales growing/contracting?
✓ Major competitors?
✓ Product differ?
✓ Opportunities/threats?
✓ Recent changes/direction?
✓ Technology?
✓ Mature/new company success?
✓ Reasonable profits?
When to Develop and Market a New Product

Ask yourself:
1. Who are my primary customers?
2. Will I sell to individuals, businesses, or both?
3. If I sell to other businesses, who will be the actual end users, or ultimate consumers, of my product?

Breakeven Analysis

• “...total sales revenue must exactly equal all your expenses (both variable and fixed).”

Breakeven Calculation

Selling Price
- Variable Cost per Unit

Contribution Margin

Fixed Cost

Contribution Margin = Breakeven (Units)

Risks to Product Development

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Trade-Offs

Time Pressure

Economics

Development Process

• “...series of activities by which a product idea is transformed into a final product.”

The Product Development Process
©"…‘right to exclude others from making, using, offering for sale, or selling’ the invention in the U.S. for 20 years."

- Must:
  - Be new
  - Not be obvious
  - Have utility

Website: http://www.uspto.gov