CPET 575 Management Of Technology

Lecture on
New Product Development, Resource and Project Management

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Book References:
New Product Development

- Business Strategy
- New Products/Growth Opportunities
- Product Development and Management Issues
- New Products Fail! Reasons Why?
- Failure Analysis
- Conclusion

Cooperate Business Strategy

- Needs: Growth and Diversification
- Competitive Advantages
- Understanding Competitors
- Understanding Customers & Markets
- Product Strategy
**New Products/Growth Opportunities**

- What to Sell and New Product Decision
  - Product improvement
  - Next generation product development
  - Line development
  - Business development
  - Acquisition (internal/external capabilities)

**Product Development and Management Issues**

- Technology Development and New Product
- Resource Management
- New Product Development
- Product Architecture: Modularity, Platforms, and Derivatives
- Project Management
- Intellectual Property
- Failed New Products and Lesson Learned
Technology Development and New Products

- Product Improvement
- Expansion of a Brand or Product
- New Entry into an Established Category
- New Category
- New Business

Technology Development and New Products (cont.)

- Product Improvement
  - Appearance or Form Improvement
  - Performance Improvement
  - Ingredient Change
  - Packaging Improvement
  - Price/value Change
- Product Line Extension
  - To the brand
  - Different brand
Technology Development and New Products (cont.)

- New Entry into an Established Category
  - Newness of brand name
  - New position (vs. target, competition)
  - Appearance or Form Difference
  - Performance difference
  - Packaging difference
  - Resource difference (ingredient, source, and/or location of supply or technology for making product)
  - Price/Value difference
  - Distribution Pattern difference

- New Category
  - New solution to an old problem
  - New solution to a new problem
  - Creation of a new need
  - Rival of an outmoded or dead/dying category
  - Innovation
  - Invention and discovery

- New Business
Resource Management

- Improving R&D Productivity/Capacity Utilization and Management
- Levels of Resource Management
  - Short-Term Utilization
  - Mid-Term Utilization
  - Project Resource Requirements Planning and Management
  - Fully Integrated Resource Management

Project Management

- Enterprise Project Planning and Control Process
- Networked Project Teams
- Project Phases and Review Management
- Financial Planning and Budgeting for New Product
- Distributed Program Management
- Collaborative Development Management
- Context-Based Knowledge Management
Failed New Products


- 1. “There is no reason anyone would want a computer in their home.” — Ken Olson, president, chairman and founder of Digital Equipment Corp. (DEC), maker of big business mainframe computers, arguing against the PC in 1977.

- 2. “We will never make a 32 bit operating system.” — Bill Gates

- 4. “There is practically no chance communications space satellites will be used to provide better telephone, telegraph, television, or radio service inside the United States.” — T. Craven, FCC Commissioner, in 1961 (the first commercial communications satellite went into service in 1965).

Failed New Products: Reasons

- Poor Planning (project)
- Poor Management
- Poor Concept
- Poor Execution
- Poor Use of Research
- Poor Technology
- Poor Timing
- Poor Marketing
- Other Reasons
Failed New Products: Reasons (cont.)

- Poor Planning
  - Company strategy
  - Entering barriers & costs
  - Pricing strategy
  - Competitive strengths: technical capabilities, complementary assets, etc
  - Manufacturing, purchasing, and quality control standards
  - Distribution strength/knowledge
  - Regulatory complications
  - Market analysis
  - Development funds
  - Timing

Failed New Products: Reasons (cont.)

- Poor Management
  - Planning
  - Direction and goals
  - Sponsorship and leadership
  - Communication
  - Budget and time constraints
Failed New Products: Reasons (cont.)

- Poor Concept
  - Too innovative, ahead of the market
  - Out of synch with the market (demographic, culture, trends, fashion)
  - Unmatched benefits/needs
  - Profit margin

Failed New Products: Reasons (cont.)

- Poor Execution
  - Product defects
  - Technical problems
  - Over or under engineered
  - Development and introduction budget (under, over spent)
  - Misbranded, Mistargeted, Mispriced (over, under)
  - Weak distribution
  - Communication
  - Marketing media
Failed New Products: Reasons (cont.)

- Poor Technology
  - Technical problems in design
  - Technical problems in production
  - Scaling-up from R&D laboratory
  - Pilot plant to full-scale production
  - Labor training
  - Substitute materials
  - etc

Failed New Products: Reasons (cont.)

- Poor Planning (project)
- Poor Management
- Poor Concept
- Poor Execution
- Poor Use of Research
- Poor Technology
- Poor Timing
- Poor Marketing
- Other Reasons
New Product Development: Information Technology

- IT Products
  - Market segments: target specific segments for the product
  - Solving Problems: identify the business problem the product solves
  - Business Value: note the business value the product delivers
  - Name accounts: name real companies that use the solution

Technology Failure Analysis

- Field returns (fault due to design, assembly or use)
- Assessing new production techniques
- Checking whether components are counterfeit or below acceptable quality
- Analyzing a supply chain to locate the source of a fault
- Assessing the quality of a manufacturing process
- Determining whether a series of faults are due to a batch of components or a change in a process
- Product recall?
Conclusion