Product Design &
Development

Product Planning
Product Planning positioning

- The product planning phase **precedes** the product development process.
Product Planning

- The Product Planning Process
- Identify Opportunities
- Evaluate and Prioritize Projects
- Allocate Resources and Plan Timing
- Complete Pre-Project Planning
- Summary
Xerox Lakes Project Example

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The Product Planning Process Questions

• What PD projects will be undertaken?
• What mix of new products, platforms, and derivative products to pursue?
• How do the various projects relate to each other as a portfolio?
• What will be the timing and sequence of the project?
Mission Statement

• What market segments to consider?
• What new technologies to incorporate?
• What are the manufacturing and service goals and constraints?
• What are the financial targets of the project?
• What are the budget and time frame for the project?
The Product Planning Process
The Product Planning Process

• The product plan identifies the portfolio of products to be developed by the organization and the timing of their introduction to the market
The Product Plan

• The product plan identifies the portfolio of projects to be pursued by the development organization

• The plan may divide projects into four categories: new platforms, derivatives of existing platforms, product improvements, and fundamentally new products (See Exhibit 3-2)
Four Types of Product Development Projects

• New product platforms
• Derivatives of existing product platforms
• Incremental improvements to existing products
• Fundamentally new products
The Process

• Identify opportunities
• Evaluate and prioritize projects
• Allocate resources and plan timing
• Complete pre-project planning
• Reflect on the results and the process
Identify Opportunities
Idea Sources for New Products

• Marketing and sales personnel
• Research and technology development organizations
• Current product development teams
• Manufacturing and operation organizations
• Current or potential customers
• Third parties such as suppliers, inventors, and business partners.
Evaluate and Prioritize Projects

• Opportunity funnel can collect 100s or even 1000s of opportunities during a year.
• Select the most promising projects to pursue.
• Basic perspectives to prioritize: Competitive Strategy, market segmentation, technological trajectories, and product platforms
Competitive Strategy

- Technology leadership
- Cost leadership
- Customer focus
- İmitative
Market Segmentation

- Dividing a market into segments allows the firm to consider the actions of competitors and the strength of the existing products of the firm wrt each well defined group of customers.
Technological Trajectories

• In technology intensive businesses, a key product decision is when to adopt a new technology in a product line.
• Technology S-curves are conceptual tool to help to think about such decisions.
Technology S-curves

- Copier Performance
- Time

- Digital Technology
- Light-Lens Technology
Product Platform Planning

• A platform development project creates the architecture of a family of products.

• Derivative Products may be included in the initial platform development effort or derivative products may follow thereafter.

• One technique for coordinating technology development with product planning is the technology roadmap.
Platforms vs Derivatives
Allocate Resources and Plan Timing

• Resource allocation (Wheelwright and Clark (1992))
Project Timing

• Timing of product introductions
• Technology readiness
• Market readiness
• Competition
Complete Pre-Project Planning

• Core team
• Product vision statement
• Mission statements
Mission statements

• Brief (one sentence) description of the product
• Key business goals
• Target market(s) for the product
• Assumption and constraints that guide the development effort (Manufacturing, Service, Environment)
• Stakeholders
Reflect on the results and the process

• Is the opportunity funnel collecting an exciting and diverse set of product opportunities?
• Does the product plan support the competitive strategy of the firm?
• Does the core team accept the challenges of the resulting mission statement?
• How can the product planning process be improved?
Summary

- Product planning involves a five-step process: 1. Identify opportunities, 2. Evaluate and prioritize projects, 3. Allocate resources and plan timing, 4. Complete pre-project planning, 5. Reflect on the results and the process.
- The opportunity funnel collects possibilities for new product platforms.
- A mission statement for each PD project documents, the product vision, business goals, target markets, critical assumptions, and the product’s stakeholders.