

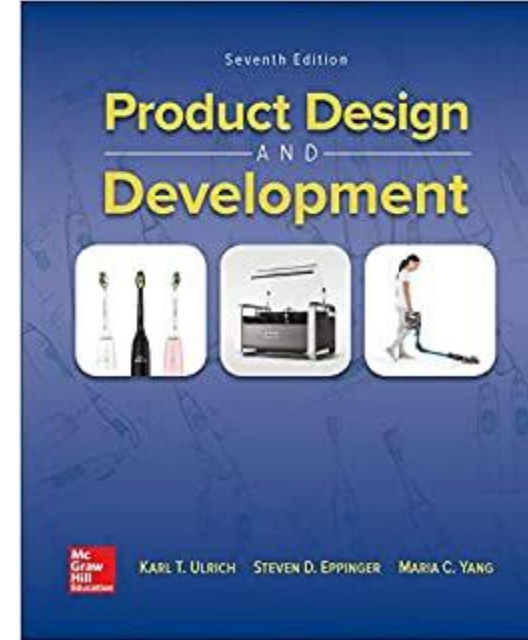
IPE 303

Product Design I

Introduction to Product Design and Development

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Reference

**Mc
Graw
Hill**

Chapter I - Product Design and Development by Karl T. Ulrich, Steven D. Eppinger, Maria C. Yang, 7th Edition

Introduction

- The economic success of most firms depends on their ability to identify the needs of customers and to quickly create products that meet these needs and can be produced at low cost.
- Achieving these goals is not solely a marketing problem, nor is it solely a design problem or a manufacturing problem; it is a product development problem involving all of these functions.



Introduction

- A *product* is something sold by an enterprise to its customers.
- *Product development* is the set of activities beginning with the perception of a market opportunity and ending in the production, sale, and delivery of a product.
- We will explicitly focus on products that are engineered, discrete, and physical. For example: consumer electronics, sports equipment, scientific instruments, machine tools, and medical devices, etc.



Characteristics of Successful Product Development

- i. Product quality
- ii. Product cost
- iii. Development time
- iv. Development cost
- v. Development capability



Figure: Printer + Scanner + Copier

Who Designs and Develops Products?

- Product development is an interdisciplinary activity requiring contributions from nearly all the functions of a firm.
- However, three functions or departments are almost always central to a product development project:
 - i. Marketing
 - ii. Design
 - iii. Manufacturing

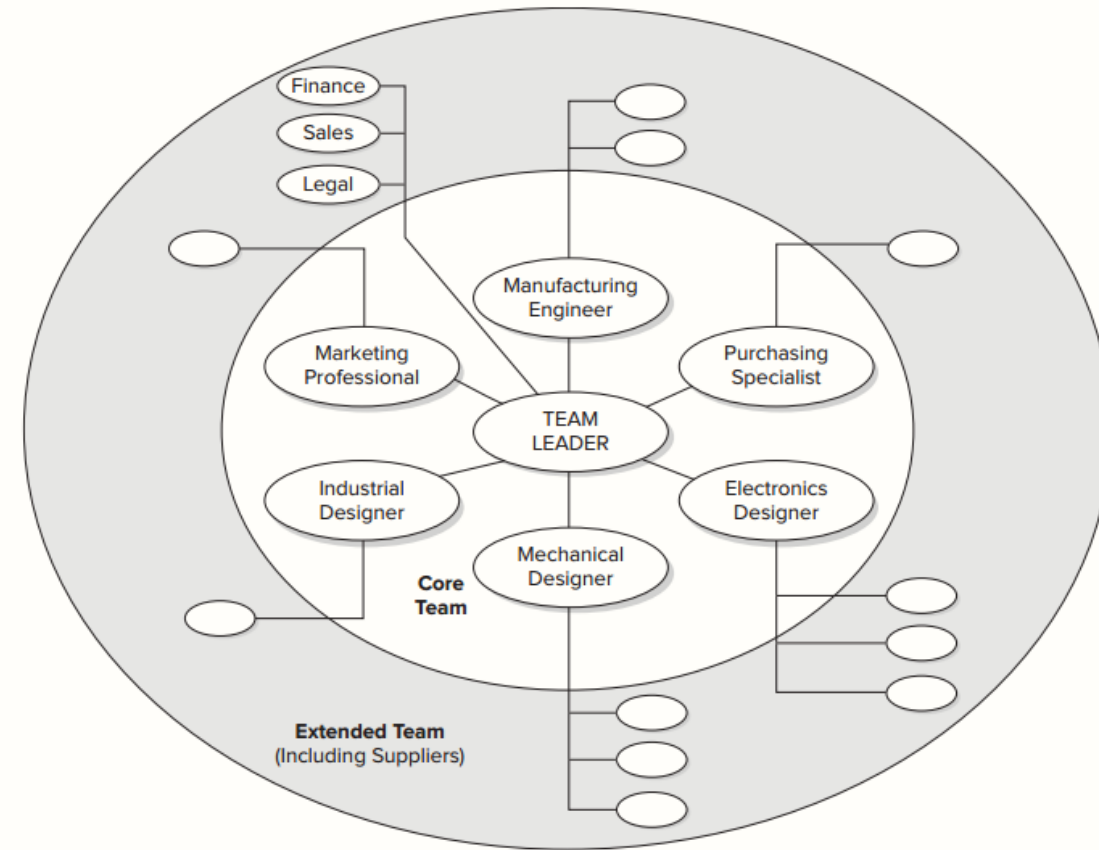


EXHIBIT 1-2 The composition of a product development team for an electromechanical product of modest complexity.

The Challenges of Product Development

- i. Trade-offs
- ii. Dynamics
- iii. Design details
- iv. Time pressure
- v. Economics

