

3.57 - Materials Selection, Design & Economics

■ Instructors

- Joel Clark jpclark@mit.edu
- Lallit Anand anand@mit.edu
- Frank Field furd@mit.edu
- Randy Kirchain kirchain@mit.edu

■ Subject Requirements

- Homework
- Quiz
- Project

■ Grading

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Course Syllabus

1. Modeling of Efficient Systems Design

- Constrained Optimization
- Linear Programming
- Technical Cost Modeling

2. Materials Selection & Performance

- Properties & Design
- Graphical Tools
- Performance Indices

3. Decision Analysis/Utility

- Single & Multiple Attribute Utility
- Decision Analysis
- Value of Information

4. Integration

- Financial Evaluation
- Case Study Project & Presentation

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Final Project

Problem: Business Plan/Project Viability

Complications: Developing Technology
Uncertain Market
Existing Competitive Product (?)

Opportunities: Product Cost & Performance Tailoring
Potential Performance Advantages

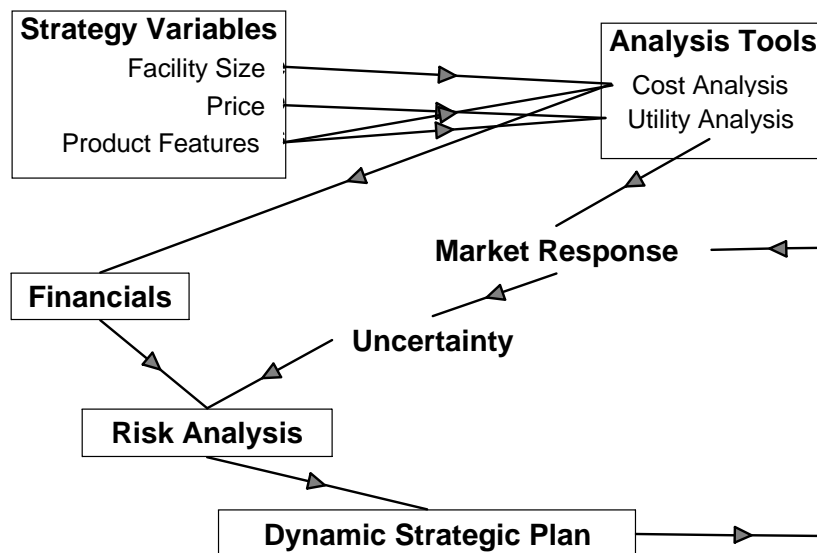
Goals: Gain Market Share
Make Money

Available Tools: Technical Cost Model
Utility Analysis
Risk Analysis
Financial Analysis

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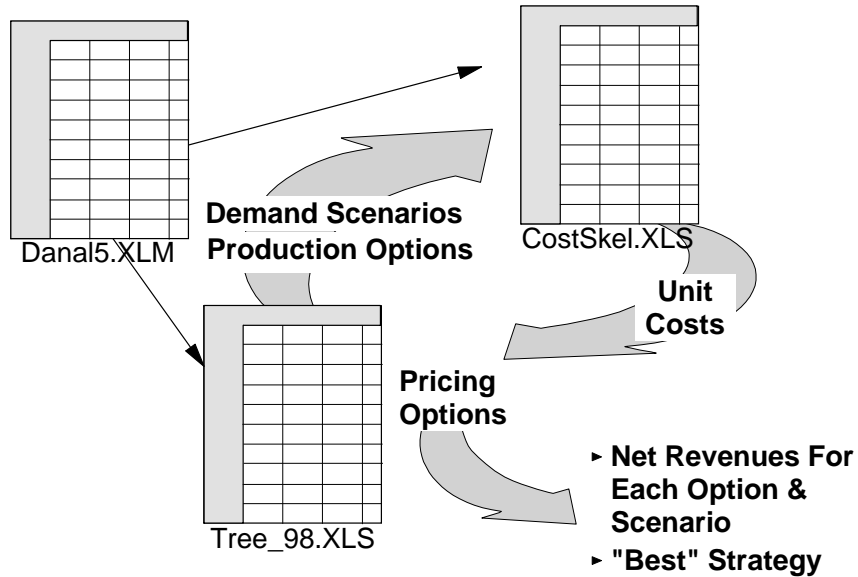
Overview



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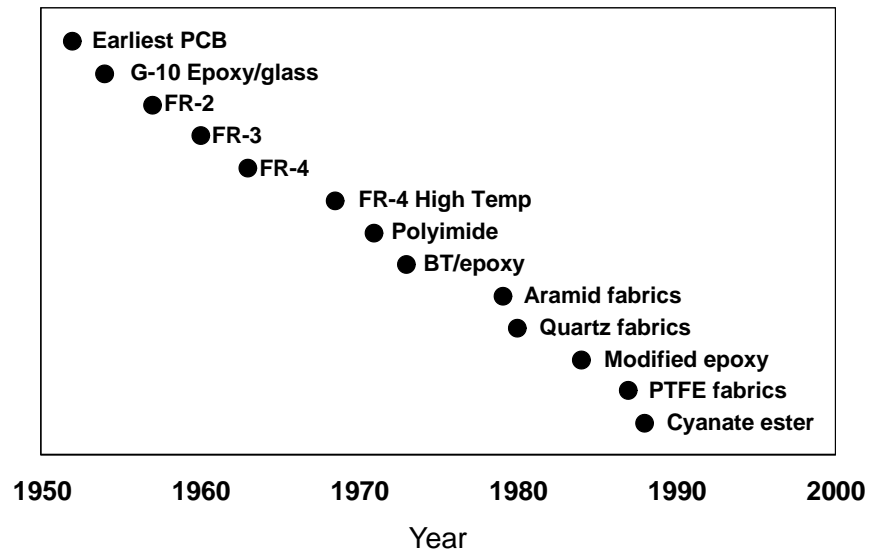
Tools On Hand



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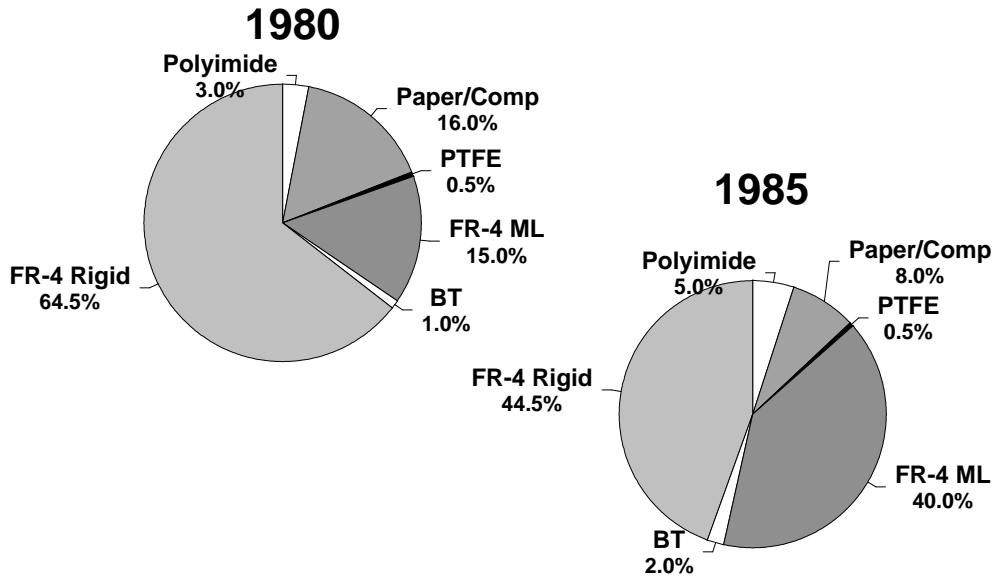
Laminate Materials Usage with Time



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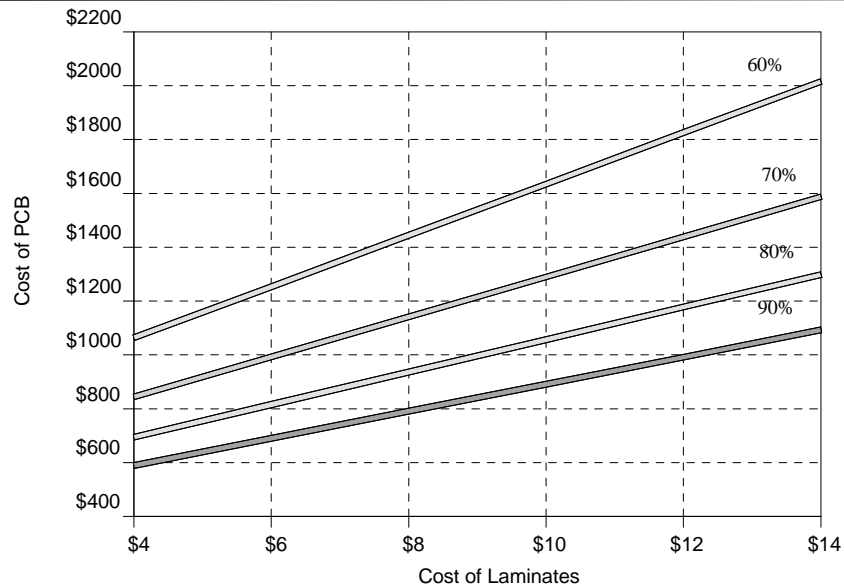
Approximate Market Share For PCB Materials



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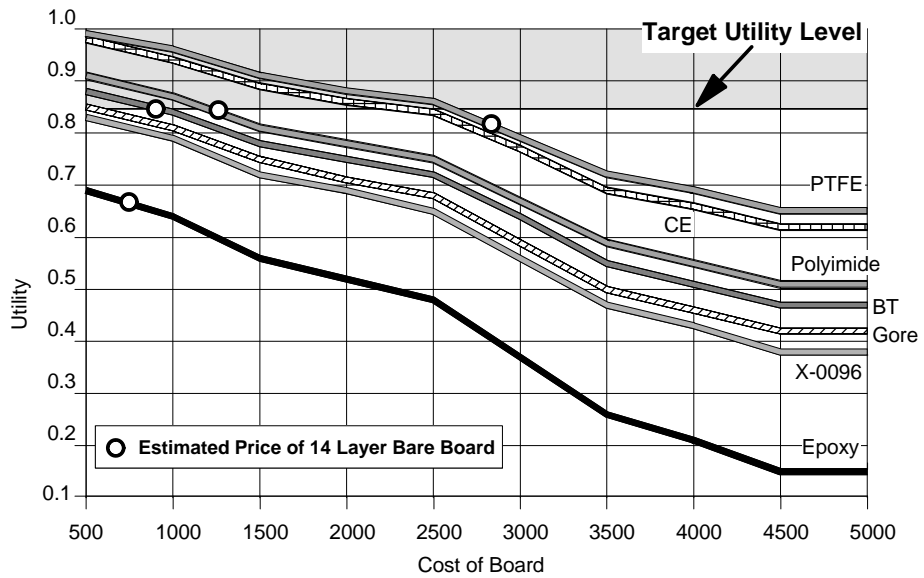
Estimated Cost of CE PCBs (as a function of yield & laminate costs)



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Targeting Cost/Price Performance



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