INNOVATION OF PRODUCTS & SERVICES - MIT’S APPROACH TO DESIGN THINKING
Winning companies, such as Apple, Virgin, Toyota and others, innovate continuously because of their culture of design thinking – integrating the needs of people, the possibilities of technology and the requirements for business success. In this course, you will learn how to take a similar approach in your own business – blending the perspectives of marketing, design and engineering into a systematic approach to delivering innovation. As a core part of the course, students participate in a team-based concept development project assignment. This project, focused on opportunity evaluation and concept development, is integrated into all course modules.

At the end of this course, participants will learn to:

- Understand the design thinking process
- Identify and assess customer opportunities
- Generate and evaluate new product and service concepts
- Design services and customer experiences
- Design for environmental sustainability
- Evaluate product development economics
COURSE HIGHLIGHTS

- **Interactive Lectures**: 62
- **Real World Applications**: 4
- **Capstone project**: 1
- **Discussions**: 9
- **Case Studies**: 4
MODULE 1 - Design Thinking Skills

Pre-work

- Read: Design Thinking by Tim Brown (Harvard Business Review)

Framework

- Three Innovation Challenges:
  - People Desirability
  - Business Viability
  - Technical Feasibility

- Example of Three Innovations Challenges:
  - NEST
  - AIRBNB
  - APPLE

- Design Thinking Skills
- IDEO’s Systematic Innovation Process
- How to Rate Ideas
Applications

- Online Tournament – Submit TWO Product, Service or Software Opportunities Implement Four Elements of Leadership

- Applying Three Innovation Challenges Model to Evaluate Your Own Business’ Products/Services

- Online Tournament: Rate 40 of the Opportunities Submitted

MODULE 2 - Identify Customer Needs

Framework

- Product Development Process

- Concept Development Process

- User Innovation Application

- Customer Needs and Markets

- Lead User Example – Utility Light Study

- Customer Needs Analysis Process Steps – NEST

- Five Guidelines for Writing Need Statements

Application


- Find an example in your home or office of an innovative product. Upload a photo and explain why you chose it.
Real-World Group Project: Select the top-ranked ideas of your team and work on the following:

- Opportunity Evaluation and Concept Development
- Identify Needs for Your Project Idea
- Receive Reviews by Other Team Members

**MODULE 3 - Applied Creativity - Product Concept Generation**

**Framework**

- Invention, Innovation and Creativity
- Example: YCC Concept Car
- Great Ideas
- Brainstorming Common Rules
- Research on Brainstorming and Creativity
- Concept Sketches and Sketch Modeling
- Concept Generation Process
- External and Internal Search – Brainstorming
- Concept Generation – Example of Combining Ideas
- Concept of Down Selection
Application

- Decompose Project Idea into Key Elements
- Real-World Group Project: Develop a Solution Concept

MODULE 4 - Design of Services and Customer Experience

Framework

- The Difference between Goods and Services
- Services Innovation at Bank of America
- Services Experience Cycles
- Examples of Services Experience Cycle:
  - Movie Theatre Example
  - Zipcar

Application

- Decompose the Movie Theatre Example
- Real-World Group Project:
  - Analysis and Concept Development
  - Map Out the Customer Experience Cycle for Your Project Idea
  - Think of Innovation Opportunities that Stem from that Cycle
Framework

- Introduction to Design for Environment – NCIS Story
- Three Examples:
  - Wellington Boots
  - Frietag Bags
  - Stokke Tripp Trapp
- Environmental Impacts
- Life Cycle Assessment
- Two Life cycles
- The Herman Miller Story:
  - The Company Journey
  - The Chair
  - DFE Assessment Method

Application

- Decompose the Movie Theatre Example
- Real-World Group Project:
  - Analysis and Concept Development
- Map Out the Customer Experience Cycle for Your Project Idea

- Think of Innovation Opportunities that Stem from that Cycle

**MODULE 6 - Financial Analysis**

**Framework**

- Introduction to Product Development Economics
- Thought Experiment and Product Development Cash-flow
- PD Project Financial Marketing
- NPV and Nespresso Example
- Nespresso Example:
  - The Numbers for Machines and Capsules
  - Model Uncertainty
- Spreadsheet Modeling – How much more do we need to sell to recover recycling program?
  - Put several worst cases and see what happen to NPV
  - Put in best cases and see what happens to NPV
- Debrief on the Above Discussions

**Application**

- Analyze the Nespresso case from a Financial Perspective
• Exercise: List 5 reasons firms may choose to pursue a product even if the analysis reveals a negative NPV

• Real-World Group Project: Complete report factoring in any additional financial analysis you have learnt

MODULE 7 - Project Peer Reviews and Course Wrap-Up

• Introduction to Product Development Economics

• Thought Experiment and Product Development Cash-flow
BENEFITS TO THE LEARNER

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- Build new networks through peer interaction
- Benefit from diverse class profiles

Career Capital
- Professional Acceleration through our enriched leadership toolkit
- Learn while you earn
- Get noticed. Get ahead.
Upon successful completion of the program, participants will be awarded a certificate by EMERITUS Institute of Management, in collaboration with MIT Sloan School Of Management.
DURATION AND COURSE FEE

Fees $US 750
2 Months

*Course fee is exclusive of GST applicable to Singapore residents

ABOUT MIT SLOAN SCHOOL OF MANAGEMENT

The MIT Sloan School of Management, based in Cambridge, Massachusetts, is one of the world’s leading business schools and has a network of over 20,000 alumni across 90 countries. Ranking #3 Most Satisfied B-School Graduates (Forbes, 2015), MIT Sloan has an extensive global reach across countries, universities and organizations. It is a part of the Massachusetts Institute of Technology which has to its credit 84 Nobel Laureates, 45 Rhodes Scholars, 38 MacArthur Fellows and 34 astronauts. MIT’s motto is ‘Mens et Manus’, which literally means ‘Mind and Hand’, reflecting the educational belief of MIT’s founders – education for practical application.
Steve D. Eppinger is the General Motors Leaders for Global Operations Professor, a Professor of Management Science and Engineering Systems, and the Co-Director of the System Design and Management Program at the MIT Sloan School of Management.

Steve served as deputy dean of MIT Sloan from 2004 to 2009; as faculty co-director of the Leaders for Global Operations (formerly MIT Leaders for Manufacturing) and the System Design and Management programs from 2001 to 2003; and as co-director of the Center for Innovation in Product Development from 1999 to 2001.

His research efforts are applied to improving product design and development practices. Conducted within MIT’s Center for Innovation in Product Development, his work focuses on organizing complex design processes in order to accelerate industrial practices, and has been applied primarily in the automotive, electronics, aerospace, and equipment industries. At MIT Sloan, Steve has created an interdisciplinary product development course in which graduate students from engineering, management, and industrial design programs collaborate to develop new products. He also teaches MIT’s executive programs in the area of product development.

In 1993, he received both MIT’s Graduate Student Council Teaching Award and the MIT Sloan Award for Innovation and Excellence in Management Education. Steve lectures regularly for international corporations and in executive education programs, and has consulted for or conducted research with more than 50 firms. He serves on the Research Advisory Council of the Design Management Institute and on the Advisory Board of Directors of the Society of Concurrent Product Development.
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