Columbia Business School

# New Product Development

Fall 2016, A-Term, Monday-Wednesday, 9:00 am – 10:30 am, 141 Uris Hall

Instructor

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## Introduction

Identifying opportunities, developing strategies, and designing processes for the creation of new products are key responsibilities for both entrepreneurs and managers in established firms. But developing new products is also fraught with risk: an overwhelming majority fail when introduced to the market.

This course is about improving the odds of placing winning bets on new products.

We especially recommend the course to students who expect to (i) launch their own businesses, (ii) work as brand or product managers, or (iii) have responsibilities requiring knowledge of product strategies and management of new product initiatives. Consultants who advise clients on product strategies may also benefit from taking the course.

We consider both strategies and processes for new product development. Strategy provides the context for product development --- without it, each product development project is a separate and disjointed effort that has a much lower chance of success. This is one major reason why so many new products fail. Strategy for new products requires aligning new product development with market opportunities (for example in emerging markets, or by exploiting new inventions and technologies); selecting business models; and choosing effective marketing and manufacturing strategies. Process includes choosing a sequence of activities that is both rational and effective for converting ideas into compelling new products. These activities include concept development, design, prototyping, demand estimation, costing and pricing, branding, packaging, product testing, and market testing. However, not all products use the same development processes, and it is important to understand when to use which processes.

**Course objectives**

The objective of this class is to develop capabilities that will allow you to make smart decisions about which new products to make, and what strategies and development processes to use. The aim is to combine the development of a conceptual framework with real life examples and assignments that can help form a solid foundation for designing strategies and development processes for new products.

In parallel with the development of the conceptual framework, students will work on a project analyzing a specific opportunity, developing a strategy, and performing selected steps in the process of product development. This will allow them to:

* Apply the conceptual framework to analyze a specific opportunity and identify new products to exploit the opportunity.
* Develop a product concept and defend a strategy for a new product.
* Learn from the presentations and discussions of other groups.
* Be exposed to a variety of new product opportunities across industries/geographies.

## Class structure

The first half of the course will focus on frameworks for developing strategies for new products, and the second half on processes used for structuring new product development. Class time will be split among (i) lectures; (ii) case discussions; (iii) guest speakers; and (iv) project work. The last session will be dedicated to having the groups present their different projects, answering questions, synthesizing what was learned and receiving feedback from the rest of the class.

## Readings and cases

Course packet of reading and cases (required)

Isaacson, Walter (2011), *Steve Jobs*, Simon & Schuster: New York, NY

## Grading

Grades will be based on the following areas:

1. Class Attendance, Quizzes & Participation 25%
2. Homework Assignment 25%

4. Final Project 50%

* **Details of the homework and the final project are given later in the syllabus.**
* **Each group must submit a one-page proposal for the final project to the instructor on Monday, September 19.**

**Attendance:** Please make sure you are seated in class on time and are fully prepared for class discussion. Given that classwork is central to the learning, missing any of the sessions without a valid reason will lower your grade.

 **Preparation and class participation:** You are expected to actively contribute to the learning of your classmates, both through class discussion and in collaboration on homework and the finals project. Reading a case is not sufficient for adequate class participation. You should be prepared to present your case analysis (including quantitative analysis where appropriate), and to raise and address difficult questions in a case. Expect cold calling.

Good participation is defined as:

* Active participation in case discussions, based on case preparation.
* Adding insights to discussions from course readings and your own knowledge and experience.
* Being respectful and prepared with thoughtful questions when other students are presenting, or when a guest speaker comes to class.

 **Use of devices:** Do not use any devices (phones, laptops, smart watches) in class. It is distracting for other students (especially those sitting beside and behind you), and for the instructor. The instructor will tell you when it is reasonable to use a device for class work. Otherwise, wait for a break in the class. The only exceptions are emergencies, in which case you should inform the instructor and step outside the class. Any other device usage will take away from your class participation grade.

# Overview of class sessions

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| Session and Topic | Readings (R) / Cases (C)  |
| 1. Sept. 7 (W). Introduction | *Steve Jobs*, Chapters 30, 31, 36, 38 |
| 2. Sept 12 (M). Product development over the life cycle.  | Exploit the Product Life Cycle (R)Slow Ideas (R) |
| 3. Sept 14 (W). Staging entryCase Discussion: Tesla Motors | Tesla Motors (C)The Best Years of the Auto Industry Are Yet to Come (R) |
| 4.Sept. 19 (M) Business models. Market disruption.Case discussion: Launch of the Indian Premier League**Due: One page proposal of final (group) project** | Launch of the Indian Premier League (C)(http://www.iplt20.com)Business Models, Business Strategy and Innovation (R)Steve Jobs, Chapter 25 (start reading from p. 334) and Chapter 39 (read up to p. 517) |
| 5. Sept. 21 (W) Product development processStage gates, idea generation and concept development | Backpack Makers Rethink a Student Staple (R) |
| 6. Sept. 26 (M) DesignStudent presentations of HW 1 (see questions on next page)**Please submit homework on Canvas by 7 pm on Sunday, Sept. 25** | Three Levels of Design: Visceral, Behavioral and Reflective (R) |
| 7. Sept 29 (W) DesignDiscussion of final projects with selected groups. | Steve Jobs, Chapters 12, 25, 26, 27Google and Apple Fight for the Car Dashboard (R) |
| 8. Oct. 3 (M) Product architecture.Discussion of final projects with selected groups. |  |
| 9. Oct 5 (W) Product testing  | Dropbox (C) |
| 10. Oct 10 (M) Guest speaker |  |
| 11/12. Oct. 12 (W) and Oct. 17 (M) - Final project presentations and wrap up**All groups must (1) submit final project presentations on Canvas by 7 pm on Oct 11 (Tuesday) and (2) attend both presentation sessions.** |

Homework 1 (to be done in a group of 4-5 students)

## Objective: Redesign the backpack for college students.

Readings: (1) “Backpack makers rethink a student staple” and (2) “Three levels of design: visceral, behavioral and reflective”
Instructions

1. Your target market is **college students**. Your aim is to develop a line of backpacks targeting different segments of users. The products in your line should range in price from $35 to $75. The cost of materials and manufacturing should be about 50% of the final selling price.
2. Maintain a log of your own backpack use over the term. Record the problems encountered when packing, carrying, using and storing the backpack. Classify these in terms of their importance to you (major, minor, trivial).
3. Identify competing products (online search/retail store visit).
4. Talk to a retailer about consumer trends, retail margin, how they decide on a product selection.
5. Use the preceding information to identify features that a backpack (i) must have and (ii) must not have.
6. Develop three concepts, one each focusing on the visceral, behavioral and reflective aspect of design.
7. Integrate the three concepts into a single overall concept. Describe the features you’d add to distinguish alternatives in your product line. What were the tradeoffs you made when combining the three concepts into the final concept?

Deliverable: A PowerPoint presentation with 6-7 slides addressing the questions below concerning the redesign of a backpack. A separate written report is NOT required.

## Due date: Please upload homework on Canvas by 7 pm on Sunday, Sept. 25.

Selected groups will present their strategy in class on Monday, Sept. 26.

# Final project: options and guidelines

## Type of assignment: Group (4-5 students per group)

Objectives: See specific objectives for each of four types of projects below.

Deliverable: A PowerPoint presentation and a class presentation in the last class. A separate written report is NOT required.

**You can choose one of the following two options for the class project. In either case, you must submit a one-page proposal to the instructor by the end of class 4 (week 2).**

Option 1: Develop your own idea. This is most useful if you already have an idea for a product and have done some work on it. Submit a proposal to the instructor (1 page) by the end of class 4, outlining where the project currently stands, and how you would like to develop it over this half term.

Option 2: Identify an opportunity. Choose an industry of interest. Identify the stage of its life cycle, predict how the market is likely to evolve over the next 3-5 years, and identify the top three market opportunities. Choose the most promising opportunity for a particular firm (or for an entrepreneur), then identify three potential ideas for new products. Develop one of the ideas into a concept for a product or product line (this requires identifying and sizing a target market and specifying a product positioning). Provide an assessment of the potential market size and evaluate alternative business models.

All groups will present the projects in class.

## General instructions

1. Projects must be in an industry that has broad appeal, such as consumer products, retailing, retail banking, mass media or telecommunications. Markets with few customers, and business-to-business projects, are not appropriate for this course.
2. Each project should consider an opportunity from one of the following perspectives:
	1. an entrepreneur looking to exploit a specific opportunity (the entrepreneur could be one or more of the students in the group); or (ii) an entrenched firm/organization that is already a player in the relevant industry and country. Project options

## Due date: All groups must (1) upload their final project presentations on Canvas by 7 pm on Oct 11 (Tuesday) and (2) attend both presentation sessions.

**Optional readings**

1. Isaacson, Walter (2014), The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution, Simon and Schuster, New York, NY.
2. Moore, Geoffrey (1991), Crossing the Chasm, Harper Collins Publishers: New York, New York.
3. Gladwell, Malcolm (2000), The Tipping Point: How Little Things Can Make a Big Difference, Little, Brown, and Co.: New York, NY.
4. Christensen, Clayton M. (1997), The Innovator's Dilemma, Harper Collins: New York, NY.
5. Norman, Donald A. (2004), Emotional Design: Why We Love (or Hate) Everyday Things, Basic Books: New York, NY. Also see Norman’s classic The Design of Everyday Things, The Design of Future Things, and Things That Make Us Smart.
6. Ries, Eric (2011), The Lean Startup, Crown Business: New York, NY.
7. Urban, Glen L. and John R. Hauser (1993), Design and Marketing of New Products, Revised Edition, Prentice-Hall, Inc.: Englewood Cliffs, NJ.

## About the instructor

Rajeev Kohli is the Ira Rennert Professor of Business in the Marketing Division at Columbia Business School. He has research and teaching interests in product development, emerging markets, pricing, and mathematical models of consumer choice. He has taught MBA and Executive MBA courses at Columbia Business School on New Product

Development, Catching the Growth Wave in Emerging Markets, Innovation and Opportunities in India, Information Technology in Marketing, and Marketing Planning. He also teaches a PhD course on mathematical models in marketing. Professor Kohli serves on the advisory boards of New York City’s Media Lab and the Deepak and Neera Raj Center on Indian Economic Policies in the School of International and Public Affairs at Columbia University.