

Module Outline

Module Code : TR3001
Module Title : New Product Development
Semester : Semester II, AY20/21
Faculty : Mr Neo Kok Beng
Department : Marketing
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Overview

This is an entrepreneurial & experiential course that on the conceptualization, design and development of innovations and new products that meet market demands. It integrates product planning, development and marketing for technology ventures.

Beyond lectures, intensive workshops, guest speakers and field visits (if possible) are included to enrich the field experience.

Students will go through the experiential process using crowdfunding platform.

Module Objectives

- 1) User Desirability: competency to understand customer needs and develop product specifications
- 2) Technical Feasibility: competency to design product architecture/platform and intellectual properties
- 3) Business Viability: competency to determine product economics of the innovation

General Guide & Reading

Reference:

New Product Development, Ulrich & Eppinger, 7th Edition 2020, Irwin/McGraw-Hill

Other readings and case studies will be listed in the lecture slides.

Assessment

Assessment Components	Weightage
A) Class Contributions (Individual)	20% (Individual)
B) Projects	
Project 1(New Product Ideas – Pitch & Factsheet)	20% (Individual)
Project 2 (Crowdfunding Page/Video/Specs)	20% (Group)
Project 3 (Final Presentation – NUS Enterprise)	15% (Group)
Project 4 (Product Development Plan)	15% (Group)
C) Insights Paper (Individual)	10% (Individual)

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is “the practice of taking someone else’s work or ideas and passing them off as one’ own” (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubt, you should consult your instructor.

Additional guidance is available at:

- <http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct>
- <http://nus.edu.sg/osa/resources/code-of-student-conduct>

About me

NEO KOK BENG is currently Associate Adjunct Associate Professor of the Department of Marketing, and Department of Electrical & Computer Engineering. He is instructor of the Graduate Research Innovation Programme (GRIP) the flagship DeepTech technology ventures of NUS.

He has also hold/held various visiting professors/fellowship at overseas universities including Harvard, Tsiinghua, Fudan, Indian School of Business, Kazan Federal (Russia) and UNDP/AusAid/PhiDev.

He worked in Singapore Technologies for 12 years, raising from system engineer to vice-president; including stints in aerospace, electronics, information technology and venture investments; and with postings to Silicon Valley, US and Shanghai, China.

Kok Beng is involved as Chairman/Founder/Investor in more than 10 Deep-Tech ventures in various stages of development & growth, covering medical technology (AWAK, Breathonix, CreathHealth & E3A Healthcare), Engineering (Advanced Terahertz System, BeeX, E2S2 Systems, NEO Aeronautics & PiezoRobotics) and Lifestyle (Gush, TinyMOS, Lumos Helmet).

He designed the world’s first wearable peritoneal dialysis machine and Singapore’s 1st flying car. He received the President’s Design Award and the USA Department of Veterans’ Affairs Innovation Initiative Award; and awarded Fellows of the ASEAN Federation of Engineering Organizations and Institution of Engineers, Singapore.

He is a member of the Engineering Accreditation Board, Disciplinary Committee member of Institute of Singapore Chartered Accountant (ISCA).

Schedule and Outline

Lesson	Topic	Activity (preparation / cases & assignments / follow-up readings & resources)
1	Introduction	Design Thinking Methodology & Class Exercise
User Desirability		
2	Opportunities Generation & Evaluation	Sources of opportunities exercise Market Size exercise
3	Customer needs & value proposition design	Interviews exercises Value proposition canvas
4	Crowdfunding	Video storyboard & crowdfunding page
5	Project 1	Pitching for Co-Founders
Technical Feasibility (Workshop 1)		
6	Product Specifications & Product Planning	Brochures design Platform & Network Effect Simulation
7	Intellectual Properties	Trademark design & patent/claims design
8	Quality System & Certification	QMS strategy and test scenarios
9	Project 2	Crowdfunding page presentation
Business Viability (Workshop 2)		
10	Business Model Design & Validation	BMC exercise
11	Product Development Economics	Financial Analysis using Excel
12	Project Management	Critical Path A& Risk Analysis using MS Project
13	Project 3	Final Presentation: NUS Enterprise