

ENGG5102: ENTREPRENEURSHIP FOR ENGINEERS

28 February 2025



Introduction

- * This unit of study aims to introduce graduate engineering students from all disciplines to the concepts and practices of entrepreneurial thinking.
- * The focus of the unit of study is on how to launch, lead and manage a viable business starting with concept validation to commercialisation and successful business formation.

Topics to be covered

- * Entrepreneurship: Turning Ideas into Reality
- * Innovation and Technology Strategy
- * Recognising and Screening Technology Opportunities
- * Industry, Market and Customer Needs Analysis
- * Building an Effective Business Plan
- * Creating a Successful Financial Plan

Topics to be covered (cont.)

- * Moving from R&D to Operations
- * Lean Product Lifecycle Management
- * Collaboration Strategies
- * E-Commerce and Disruptive Business Models
- * The Legal Environment: Business Law and Government Regulation
- * How to protect your Intellectual Property
- * Engineering Ethics and Social Responsibility

Course Structure

- * A lecture session per week with regular tutorials
- * Attendance at lectures is expected and participation in quizzes and discussions will be assessed
- * Attendance at tutorials is compulsory and involvement will be assessed
- * Reading will require between one and two hours per week
- * Formal and informal work during tutorials

Assessment Components

- * Class Participation – 10%
- * Tutorial Case Studies – 20%
- * Written Assignments – 20%
- * Written Business Plan – 30%
- * Business Plan Presentation – 20%

Recommended Books

- * **New Venture Creation: Entrepreneurship for the 21st Century - A Pacific Rim Perspective**

Jeffrey Timmons, L. Gillin, Sam Burshtein, Stephen Spinelli

- * **Technology Ventures: From Idea to Enterprise**

Thomas Byers, Richard Dorf, Andrew Nelson

- * **Strategic Management of Technological Innovation**

Melissa Schilling

How to contact me?

- * During lectures and also via email

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Any questions?



What is Entrepreneurship?



Entrepreneurship

- * **Entrepreneurship** may be described as the identification and exploitation of previously unexploited opportunities to meet customer needs
- * One of the key aspects of entrepreneurship is the emphasis on innovation and new ways of doing things as well as on new products (goods and services) for potential customers

Schumpeter's Five Basic Ways for Sources of Opportunities

- Use a new technology to produce a new product.
- Use an existing technology to produce a new product.
- Use an existing technology to produce an old product in a new way.
- Find a new source of resources to produce more efficiently and economically.
- Develop a new market for an existing product.

An Idea is not necessarily an Opportunity

An opportunity is an idea that is based on **what customers need or want** and are **willing to buy sufficiently and regularly** at a **price high enough** to sustain the business.

Timmon's Business Opportunity= Idea + 4 Characteristics

1. Attractive to customers
2. Will work in the business environment
3. Can be executed in the window of opportunity that exists
4. Resources and skills to create the business are available to the entrepreneur

Entrepreneurs

- * **Entrepreneurs** are people who identify and pursue innovative solutions among problems, possibilities among needs, and opportunities among challenges
- * The term entrepreneur emphasises the proactive and transformational nature of entrepreneurial activities

Characteristics of Entrepreneurs

Eight Dominant Themes:

1. Commitment and Determination
2. Courage
3. Leadership
4. Opportunity Obsession
5. Tolerance of Risk, Ambiguity and Uncertainty
6. Creativity, Self-Reliance and Adaptability
7. Motivation to Excel
8. Intuitive

Benefits and Costs of Becoming an Entrepreneur



Benefits

- Independence
- Satisfaction
- Financial reward
- Self-esteem
- Contribution to society

Costs

- Business failure
- Loneliness
- Financial insecurity
- Long hours/hard work
- Strain on personal relationships

The Founder is at the Heart of the Entrepreneurial Process



- * They are the Energy, Soul, and the Driving Force behind the Start-Up
- * They have the passion to develop an innovative solution to a compelling market problem

Angel Investors



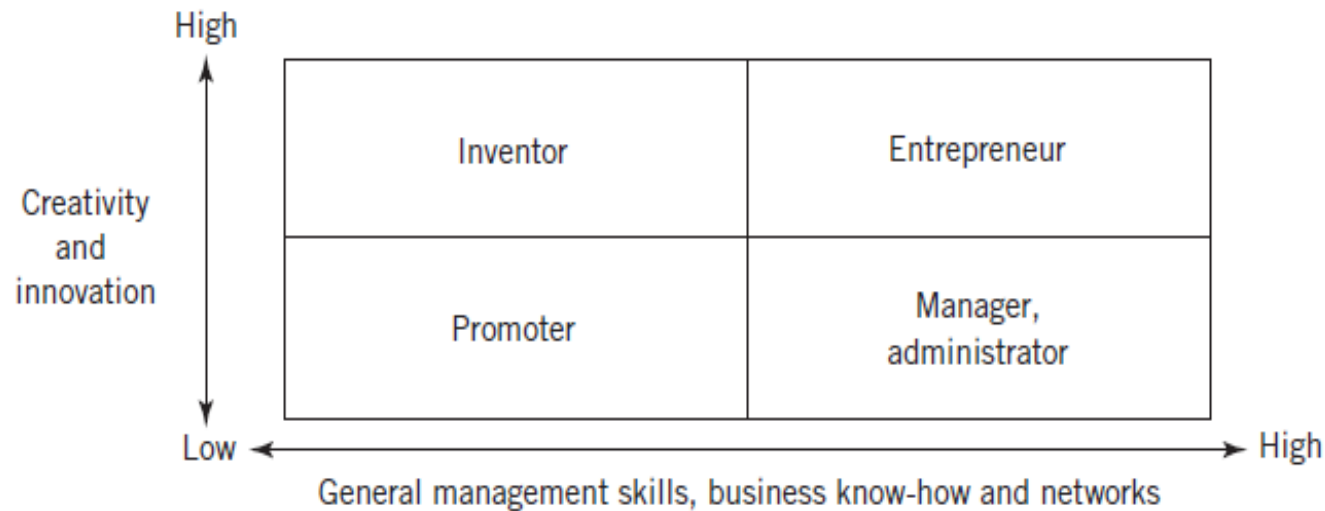
- * Successful entrepreneurs themselves
- * Moderately wealthy to very wealthy individuals
- * Bring far more than money to the entrepreneurial process
- * Bring experience, networks, wisdom and maturity to the company they fund
- * Serve as a coach, confidant, mentor and cheerleader

How good is your idea?



Difference between being an Inventor and an Entrepreneur

EXHIBIT 2.9 WHO IS THE ENTREPRENEUR?



Have come across any innovative
idea recently?



The Role of Entrepreneurship and Innovation

- * Technological change and entrepreneurship are critical components of growth models based on market incentives.
- * The new economy is characterised by:
 - * Knowledge workers
 - * Globalisation
 - * Innovation
- * Time-to-market to meet customer needs is a key competitive advantage

Four Entrepreneurial Transformations...

... that are changing the World

1. Entrepreneurship is the new management paradigm for thinking and reasoning
2. Entrepreneurship has spawned a new education paradigm for learning and teaching
3. Entrepreneurship is becoming a dominant management model for running nonprofit businesses and social ventures
4. Entrepreneurship is transcending business schools