Lisbon School of Economics & Management
Universidade de Lisboa

Master in Innovation and Research for Sustainability

Evaluation and Management of R&I Projects

Group Assignment

2025

Summary for today

Module I: Introduction to R&D+I Management

Lecture 1: Crafting an R&D+I Strategy

- Overview of R&D + Innovation: Its importance and impact
- Exploring Innovation Types: Understanding the diversity in innovation

Lecture 2: Applying R&D+I Management

- Developing R&D+I Capabilities: Techniques to enhance innovation
- Implementing R&D+I: Strategies for effective teamwork and innovation
- Practical Components: Hands-on exercise to define a Thesis, a Roadmap of Innovation and OKRs

Module II: Project Lifecycle in R&D and Innovation

Lecture 3: R&D+I Project Fundamentals: From Conception to Market

- Project Initiation: Scope definition and scientific and technical merit
- Project Planning: Strategy development, identifying challenges, and risk assessment
- Practical Components: Hands-on exercise to define project scope using a short case study

Lecture 4: R&D+I Project Fundamentals: From Conception to Market

- Project Execution: Leading RD&I teams, fostering creativity, managing change, and overseeing project progress.
- Project Closure: Capturing lessons learned and assessing project impact on value creation.
- Practical Components: Checklist or templates for project closure activities, such as lessons learned and impact assessments
- Project assignment presentation & discussion

Module III: Assessing R&D and Innovation Projects

Lecture 5: Evaluating R&D+I Projects

- Core Evaluation Elements: Key factors in assessing projects, including technology feasibility and investment criteria.
- Practical Components: Analyze an R&D project to assess its value proposition and evaluation criteria using a checklist or template covering financial, technical, and market aspects

Lecture 6: Evaluating R&D+I Projects

- Business Model Design: Analyze phases, investments, outcomes, and financial/social impact.
- Financial Metrics: Explore profitability, cost of capital, and their role in assessments.
- MVP Definition: Learn to outline an MVP with essential features.
- Practical Activity: Calculate financial indicators like profitability and cost of capital for a sample project

Lecture 7: Evaluating R&D+I Projects

- Risk Management: Techniques for analyzing and mitigating project risks
- Practical Components: Framework to identify and prioritize risks for a hypothetical R&D+I project | Mitigation strategies for high-priority risks and discuss their potential effectiveness

Module IV: Real-World Case studies

Lecture 8, 9: Real-World Applications

- Presentation of Real Case Studies: discussion & analysis of how to evaluate a R&D+I project
- 20min to discuss project assignment

Lecture 10: Case Study

- Project assignment presentation & analysis

Module V: R&D+I Portfolio Management

Lecture 11: Performance Metrics for R&D and Innovation

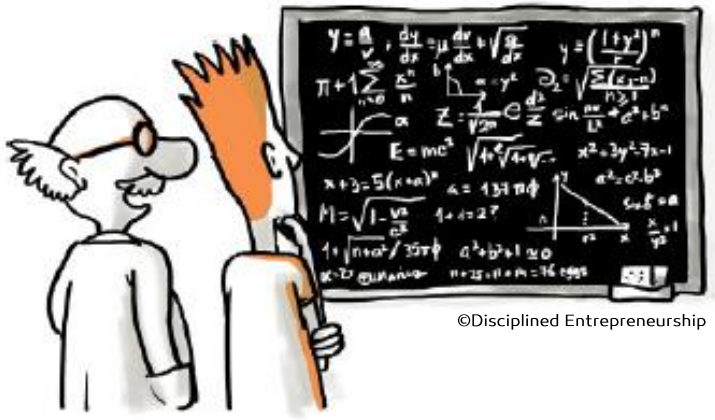
- Aligning R&D projects with strategic goals beyond financial metrics
- Evolution of Performance Measurement Systems: Historical perspective and current trends
- Comparative Analysis of R&D Measurement Approaches

Lecture 12: Real-World Case Studies

- Discussion & analysis of how to manage a R&D+I portfolio

Group assignment
Rules of the Assignment

- Group assignment – 5 People
- 25% of overall assessment
- Designed to enable the application of discussed topics
- Based on real scenarios
- Focused on skill development to make better informed decisions
- Beyond right or wrong answers – evaluate the approach and analytics
- Present all your assumptions, calculations and references
- Gen AI is allowed and moderately recommended
- Final report – max 20 pages
- Deadline – May 8th 2024 COB



©Disciplined Entrepreneurship

Group assignment

Pick one Scenario

Scenario 1:

The fuel of the future

Scenario 2:

Digital Decor

Group assignment

Scenario 1 – The Fuel of the Future

You are the RD&I team of a large energy organization and aware that biofuels can be the next big thing for your company regarding energy transition. These fuels can be produced based on a significant number of things with one of them being Used Cooking Oils (UCO).

It's crazy as the by product of our food is now a valuable input but you need to adapt to the market and collect this valuable product which is not an easy task – you almost need to knock everyone's door to get it drop by drop.

A startup company requested you a meeting saying that they have the right solution. They are a spin-off from an R&D group of a top university that worked on this solution for the last three years and now need someone to get to the market based on three assumptions:

- Idea – Enhance and attract UCO collection through gamification and by giving a reward to people,
- Technology – A UCO collector bin where users are rewarded with a soap in different shapes, formats and smells. This technology uses part of the deposited UCO to produce the soap and saves the rest in a deposit to be used as feedstock for biofuels at a later stage,
- Motivation – Get funded to continue their project,

This could solve one of your challenges, but the company does not give you more info than this since they are protecting their industrial secret.

You need to move fast to know if this is the real deal or you drop it.

Group assignment

Scenario 1 – The Fuel of the Future

Develop a business case that you can defend next to your top management considering the following:

1. What is the value proposition of this project? Do you agree that their idea, technology or motivation are aligned?

2. Conduct a comprehensive market research based on the limitation that you have and that allows you to compare their business case with your internal knowledge,

3. The project proponent refers that their market is divided as follows considering Portugal only:
   - TAM =30kton/year
   - SAM = 18kton/year
   - SOM = 9kton/year

   Do you agree with this and what do you expect to happen if you increase this collecting solution to Iberia?

4. What should be beachhead market for this project? How do you get enough capillarity to collect all the product available and get more value? What is your competitive advantage on integrating this project into your portfolio?

5. Based on the above, build your business model (use the canvas we used in class) and delineate the phase analysis that a project like this could have.

Group assignment

Scenario 1 – The Fuel of the Future

6. During the meeting the project proponent referred that they need an investment of 1M€ over the next 3 years. Despite investing in stages, if you have a green light on your decision, you need to reserve that budget:
   - Considering that your deposits have an annual interest rate of 5%, what is the opportunity cost of not investing?
   - Using a discount rate of 8%, calculate the NPV and IRR – demonstrate your calculations and provide a comprehensive discussion on the results,
   - What is you payback period? For this, consider a conservative approach by using values of your SOM (in tons of UCO) with a 1000€/ton value. Neglect the operational expenses of collecting the oil.
   - What can be your return on investment? What did you consider for the calculations?
   - Are there any externalities that you can consider to valorise this project? (please check if there is IP related to this subject)
7. Present a risk analysis for the project using a qualitative method. Provide a sensitivity and scenario analysis indicating your assumptions. Is there any mitigation measures you would propose?

Group assignment

Scenario 2 – Digital Decor

You are a team of intrapreneurs that has been developing a marketplace for home décor and furniture allowing small business owners to showcase their products in the market and compete with the big industries.

People seem to be tired of the same old "off the shelf" solutions to their house and according to your latest market research there is a market for this. However, you compete with other marketplaces in the market and so far, you have not found a competitive advantage. Another startup company, that works on digital solutions proposed you a solution of their own – a 3D planner where you can project the furniture you wish in your place.

- Idea – Bring a competitive advantage to a home décor marketplace by using a state-of-the-art technology,
- Technology – A 3D planner that creates geobodies from your desired furniture and allows you to project it in your home,
- Motivation – Help to create a unique marketplace with a competitive advantage

This could leverage your solution and make a difference allowing you to compete in the market being a "one solution" for the consumer problem.

The solution seems relevant, but you need to evaluate if this will have a positive impact on your results or in the end of the day it is just another add-on – you need to move fast and make a go/no-go decision.

Group assignment

Scenario 2 – Digital Decor

Develop a business case that you can make a difference to the survival of your company considering the following:

1. What is the value proposition of this proposal? Can this technology make a difference following the idea from the proponent?
2. Conduct a comprehensive market research to understand if this solution can actually bring an impact to your business,
3. Re-define your TAM, SAM, SOM considering a home décor marketplace, focused on the Portuguese market and mainly using products from Portuguese companies,
4. What should be beachhead market for this marketplace? What difference does it make by having this 3D tool or not? Is it the same market in both cases?
5. Based on the above, build your business model (use the canvas we used in class) and delineate the phase analysis that a project like this, including the 3D tool, could have.

Group assignment

Scenario 1 – The Fuel of the Future

6. During the meeting, the project proponent referred that they need an investment of 300k€ over the next 2 years. If you decide to incorporate this solution you should do the following characterization:
   - Considering that your deposits have an annual interest rate of 4%, what is the opportunity cost of not investing? Is it relevant?
   - Using a discount rate of 5%, calculate the NPV and IRR – demonstrate your calculations and provide a comprehensive discussion on the results,
   - What is you payback period? For this, consider a conservative approach by using the values of your SOM and considering an average purchase order of 150€. Neglect the operational expenses of implementation.
   - What can be your return on investment? What did you consider for the calculations?
   - Are there any externalities that you can consider to valorise this project?
7. Present a risk analysis for the project using a qualitative method. Provide a sensitivity and scenario analysis indicating your assumptions. Is there any mitigation measures you would propose?

Master in Innovation and Research for Sustainability

Evaluation and Management of R&I Projects