



ISEG | ULisboa | 2023/2024

Master in Innovation and research for Sustainability

Evaluation and Management of R&I Projects
Final Exam

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Instructions

- 1) You have 2 hours to complete this exam.
- 2) You can only provide your answers in English.
- 3) The exam has 2 sections.
- 4) You cannot consult external sources.
- 5) Be mindful of the time allotted for the exam and try to provide brief and systematic answers.

PART I
[12 points]

Please select four questions from the following eight to answer on the exam:

Question 1.1 [3 points] – Evaluate the role of R&D+ Innovation management in the overall business strategy of an Institution. How can effective R&D+ Innovation management contribute to competitive advantage?

Question 1.2 [3 points] – Discuss the importance of stakeholder engagement in the R&D process. Provide examples of how involving stakeholders can influence project outcomes.

Question 1.3 [3 points] – Explain the concept of 'open innovation' and how it differs from traditional R&D models. Give an example of a company that successfully implements open innovation.

Question 1.4 [3 points] – Understanding your market is key to implement innovation. Please describe the three types of market according to market definition and provide an example.

Question 1.5 [3 points] – When developing a business model, five key stages of analysis are essential. Briefly define each stage.

Question 1.6 [3 points] – Discuss the advantages and disadvantages of adopting an Innovation Roadmap, including the significance of externalities in this context.

Question 1.7 [3 points] – Describe three metrics commonly used to evaluate innovation in R&D projects and explain their importance.

Question 1.8 [3 points] - Examine the ethical aspects involved in managing R&D projects. Explain how ethical behavior impacts an organization's sustainability and reputation.

Part II

[8 points]

You are the manager of the innovation area of a large company focused on automation. Your position in the market is solid, however this is a very volatile segment, and you cannot lose the next big thing. One of the main challenges is the automation adoption in some of your client companies that, if it was more efficient, your business would significantly increase.

You receive a contact from a research center that has a suitable solution involving gamification, ready to go to the market. They do not have a proper structure defined and you need to help them reaching the market for you to use their solution. However, they have a Minimum Viable Product (MVP).

2.1 - Project Valuation [4 points]:

To help this research group you need to invest 210k€ for a Proof of Concept (PoC) developed in 1 year. Considering that your bank deposits have an annual interest rate of 6%, what is the opportunity cost of investment – Demonstrate your calculations.

Your average annual revenue on this segment is 300k€ and with the implementation of this product you expect an increase between 20% and 30%. Using a discount rate of 6% calculate your NPV and IRR for a 3-year scenario, including the PoC - Demonstrate your calculations and characterize your market assumptions.

2.2 – Risk assessment [2 points]:

Please discuss the type of risk analysis appropriate for this situation. Describe one specific method, including necessary calculations and assumptions. And list potential variables for a scenario analysis and suggest corresponding mitigation strategies.

2.3 – Indicators [2 points]:

Identify and explain the key performance indicators (KPIs) essential for evaluating R&D projects. Discuss how these KPIs influence the decision-making process. Describe the Innovation thesis of this proposal.