



How do you show the financial feasibility for a project?

Objective: this article is designed to assist engineers, scientists, researchers, project developers, managers and students with how to prove the financial advantages and viability of technical projects.

Concept: feasibility study is an assessment of the practicality of a proposed project or system. A feasibility study aims to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed venture, opportunities and threats present in the natural environment, the resources required to carry through, and ultimately the prospects for success. In its simplest terms, the two criteria to judge feasibility are cost required and value to be attained.

Preliminary: A project developer not only works on the technical side of the engineering work but also has to be able to demonstrate the financial feasibility, i.e. presenting key indicators like ROI, specific costs, IRR etc. as well as a financial risk evaluation. It is very important to learn how to perform these calculations.

The lecturer will use a step-by-step approach, not only covering the right methods and calculations but also overcoming one of the biggest problems an engineer has - how, and from

where, do I get the data required for carrying out the economic analysis? There are numerous hands-on exercises of real projects with a focus on energy, environment protection, safety and security.

A well-designed feasibility study should provide a historical background of the business or project, a description of the product or service, accounting statements, details of the operations and management, marketing research and policies, financial data, legal requirements and tax obligations

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- **Basics of economic calculations:** Financing of projects, different types of loans, impact of bank interest rate, role of inflation in project financing. Approximation to simplify the calculation.
- **Cost side of a project.** How a financial calculation is carried out, cost items of a project, considering the cost side of a project, year by year cost items, each year over full service life. The three cost components of a project. How to facilitate the calculation.
- **Cost comparison calculation:** Total annual costs, how to compare projects under cost aspects. Cost annuity. Determination of specific costs, comparing different projects using this indicator.
- **Investment costs:** What is part of investment cost, what is not? Wear and tear, depreciation, approximation. Service life of a project, technical and economic life time, liquidation yield.

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- **Incomes and returns:** Types of income items, side incomes, avoided costs, subsidies. Definition of returns, static payback period, Return on Investment (ROI), evaluating the result of the calculated payback period and ROI.
- **Database for financial calculation of a project:** How to collect data, formation of a database, what if data is missing or hard to obtain. Net profit of a project. Comprehensive case study.
- **Dynamic methods:** Difference between static and dynamic methods, discounting, significance of discounting factor. Static and dynamic payback period. Practicality of dynamic calculations.
- **Net Present Value (NPV):** Net value and Net Present Value. Definition of NPV, approximation of calculation, Present Value factor, recovery factor, Annuity. Evaluating the NPV of a project.

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- **Comparison of projects under financial aspects:** Steps to develop projects, how to compare and evaluate the financial side of different projects solving the same problem. Examples.

- **Internal Rate of Return (IRR):** Definition, significance of IRR, approximation to calculate IRR. Why IRR is an excellent indicator. Evaluating the calculated IRR of a project.
- **Financial risk assessment of a project:** Types of risk, sensitivity analysis, how to proceed, definition of critical values, what if risk is assessed as very high, measures to reduce a risk. Banking papers, practicality of financial risk assessment.
- **Summary and discussion:** Technical and economic side of a project, how to develop the very best project. Real case problems, joint discussion. Suggestions for day to day work.

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