# Risk Evaluation

Risk is associated with almost every project. Risk can become an important factor when the project is not able to meet its objectives.

Every possible risk must be identified, analyzed and minimized during the development of the software system.

## Risk Identification

- Every project evaluation involves risk handling issues.
- All possible risks are identified and must be quantified with their potential measures of evaluation.
- A project risk matrix can be implemented in creating a checklist of all possible risks and classify them based on their relative importance.
- The risk matrix contains values of high, medium and low based on their likelihood.
- Some factors classified in the risk project matrix contains, delivery of software, development budget exceeded limit, estimation of maintenance costs, response time targets and so on.

## Risk Ranking

- Based on the risk identified, ranking can be established for projects.
- Evaluating projects based on the risk project matrix gives a clear picture of how to rank the different risks that occurs in projects.
- Risk ranking involves giving scores to projects based on priorities defined for each risk in the project.

NPV and Risk

- Risky projects always have a higher discount rate for the net present value calculation.
- The risk level may be very high for a specific project due to rise in NPV value. So based on risk scores, projects are classified as high, medium and low level.
- It is better to have an additional risk premium factor to have an consistent method in developing the project
- Discounted cash flow techniques can be used to evaluate the net present value of future cash flow taken into account the interest rates and uncertainty. Risk in Cost benefit analysis
- Cost-benefit analysis focuses on the estimated cost defined for the project compared with the actual costs incurred in the development process.
- Evaluation of risk involves the possible outcomes of the project by estimating theprobability of occurring.
- A group of cash flow forecasts associated with each probability of occurring can bedefined and the value summarizes  the cost or benefit of each possible outcomeweighted with its relative probability.

- Basically, cost-benefit analysis is done for evaluation of larger projects which are subject to uncertainty.
- It is most appropriate to evaluate a portfolio of projects to determine the overall profitability.

**Risk Profile Analysis**

Risk profiles are constructed using sensitivity analysis which involves the sensitivity factors that affect the project costs or benefits.

**Risk handling using Decision trees**

- It is better to reject projects than working with risky ones.
- Decision trees is a tool which provides evaluation of project's expected outcomes and choosing between the alternative strategies