# Risk Management in Software Engineering

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## ABSTRACT

The process of identification, analysis and either acceptance or mitigation of uncertainty in investment decisionmaking. Essentially, risk management occurs anytime an investor or fund manager analyzes and attempts to quantify the potential for losses in an investment and then takes the appropriate action (or inaction) given their investment objectives and risk tolerance. Inadequate risk management can result in severe consequences for companies as well as individuals.

**Key words:** Software Enginnering, Risk, Analysis.

## INTRODUCTION

Risk management is a two-step process determining what risks exist in an investment and then handling those risks in a way best-suited to your investment objectives. Risk management occurs everywhere in the financial world. It occurs when an investor buys low-risk government bonds over more risky corporate debt, when a fund manager hedges their currency exposure with currency derivatives and when a bank performs a credit check on an individual before issuing them a personal line of credit.

### Why need to manage Risk?

There are many reasons for managing risk. Here are some:

´    Saves resources: people, income, property, assets, time

´    Protects public image

´    Protects people from harm

´    Prevents/reduces legal liability

´    Protects the environment

### Type of Risk in software
### ScheduleRisk

Project schedule get slip when project tasks and schedule release risks are not addressed properly.

### Budget Risk

´    Wrong budget estimation.

´    Cost overruns

´    Project scope expansion

### Operational Risks

Risks of loss due to improper process implementation, failed system or some external events risks.
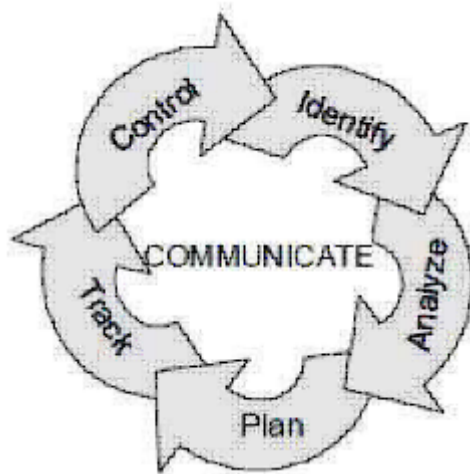
**Technical risks**

Technical risks generally lead to failure of functionality and performance.

**Programmatic Risks**

These are the external risks beyond the operational limits. These are all uncertain risks are outside the control of the program.

**Risk Management Process**

There are several models available for risk management.



The model recommended in this section was developed by

**Identify**

Before risks can be managed its must be identified before adversely affecting the project.

Establishing an environment that encourages people to raise concerns and issues and conducting quality reviews throughout all phases of a project are common techniques for identifying risks.

**Analyze**

Analysis is the conversion of risk data into risk decision-making information.

It includes reviewing, prioritizing, and selecting the most critical risks to address. The Software Risk Evaluation (SRE) Team

analyzes each identified risk in terms of its consequence on cost, schedule, performance, and product quality.

**Plan**

Planning turns risk information into decisions and actions for both the present and future. Planning involves developing actions to address individual risks, prioritizing risk actions and creating a Risk Management Plan. The key to risk action planning is to consider the future consequences of a decision made today.

**Track**

Tracking consists of monitoring the status of risks and the actions taken against risks to mitigate them.

**Control**

Risk control relies on project management processes to control risk action plans, correct for variations from plans, respond to triggering events, and improve risk

**Level of Risk in Difference stage of Software**

When you create any application or software there are some chances of risk but level of chances are different at the different level.

At is Level of Requirement analysis the is very less chances of risk because it is initial level of software. Level of Risk in software is increase when development or growth of the software.

A very high chances of risk in software at the development level because its actually part of the software. At this level programmer is work with development stage. If at this risk in not minimize then at the testing level risk is also increase.
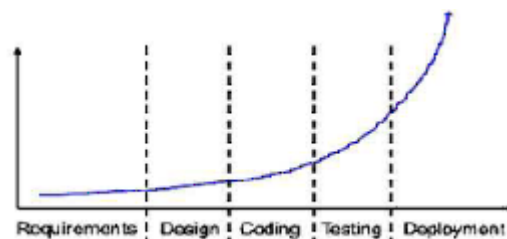
## Risk Component
### Performance Risk

The degree of uncertainty that the product will meet it requirement and benefit for its intend use.

### Cost Risk

The degree of uncertainty that the project budget will be maintained.

### Support Risk

The degree of uncertainty that the resultant software will be easy to correct, adopt and enhance.

### Schedule Risk

The degree of Uncertainty that the project schedule will be maintained and that the product will delivered on time.

## Risk Projection
### Risk

Projection also called risk estimation, attempt to rate each risk in two ways.

´ The likelihood or probability that the risk is real.

´ The consequences of the problems associated with risk, should it occur.

### There are four risk projection steps

´ Establish a scale that reflects the perceived likelihood of a risk.

´ Delineate the consequences of risk.

´ Estimate the impact of risk on project.

´ Note the Overall accuracy of the risk projection so that there will be no misunderstanding.

### Building Risk Table

| Risk | Probability | Impact | RMMM |
|------|-------------|--------|------|
|      |             |        | Risk,Mitigation, Monitoring &Management |

### Mitigation

How can we avoid the risk?

### Monitoring

What factor can we track that will enable us to determine if the risk is becoming more or less likely

### Management

what Contingency plan do we have if the risk becomes a reality?

### Building the Risk Table

´ Estimate the probability of occurrence.

´ Estimate the impact on the project on scale of 1 to 5 where-
1=low impact on project success.
5=catastrophic impact on project success.

´ Sort the table by the probability and Impact

### CONCLUSION

For this research I find out what is the possibility of the risk when we develop the Software**.**

### REFERENCES

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