Risk Analysis And Management:

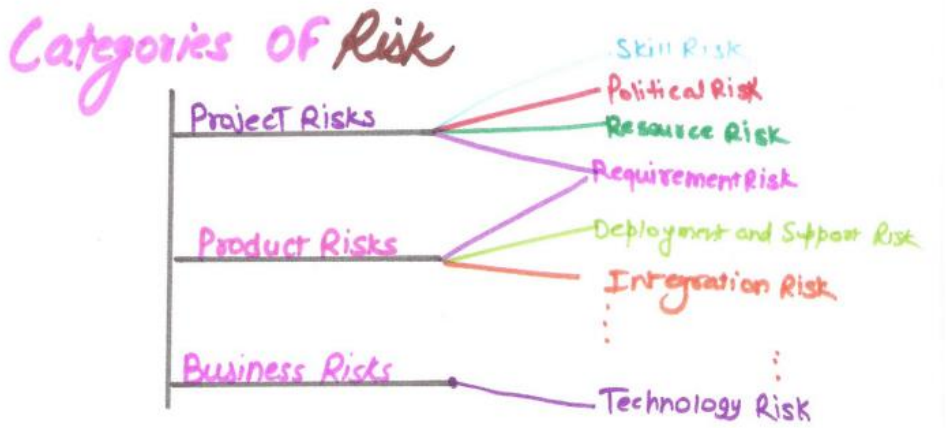
What is a Risk in Risk Management?

Risk is made up of two parts

●- the probability of something going wrong and

●- the negative consequences if it does.

"Project Risk" is a problem that could cause some lose or threaten the success of a software project, but which has not happened yet. These problem can drastically impact on the schedule, cost or technical success of the software project, the quality of software product or project team Morale.



Categories of Risk:

● **1) Project Risk:** These are those risk that affect the project schedule or resources .

Example: Loss of an experience coder.

So finding a replacement coder with the appropriate skills and experience automatically take long time in completion.

● **2) Product Risks:** This affect the Quality or Performance of the software being developed.

Example: Low Performance

Developed product do not performing as expect with effect overall performance of the system.

● **3) Business Risks:** Risks that affect the organization developing or loss of software.

Example: Introduction of a new product by competitor.

Sale of a product affected with the launch of some kind of product bike competitor which majorly affect the business and its earning of software.

Risk Analysis And Management:

Types of Risks :

- **1) Requirement Risk : Rapidly change or unclear requirement Create the large risks.** This risk mostly failed or delayed the projects. Competitive forces, business agreements with new partners for the organisation and it software system to change.

- **2) Technology Risk :** It is found that Technology sometime unable to fulfill the system requirement. Example: Suppose an organisation work on PHP and Ms SQL. But a project needs or require features beyond the limitations of PHP and MSSQL which create project to be failed.

- **3) Business Risk :** This kind of risks are basically introduce by business decisions.

For example:

- **Conflict with suppliers**
- **not signing deals on time**
- **not fulfilling promises**

- **4) Political Risk :** This happens because big or high authority people misuse the power which influence the product.

- **5) Resource Risk :** This risk causes delay in project.

- **6) Skills Risk: unfamiliar with Technology:-** Team have no computer idea of technology which going to be used on project which automatically affect the product.

- **7) Deployment And Support Risks: The project may not be deployed after product is ready since the required product is not in place.**

  - **- support team not ready for training or are over stretched. <**

●- Working closely with other developing team also a threat to project.

- **8) Integration Risks:** Most application need to integrate with other application. Miscommunication and misunderstanding cause systems not to share accepted interface and they do not work together as expected.

- **9) Schedule Risk:** Schedule may contain conflict component which are not available when necessary, the delivery date is happening at an extremely busy time. Communication between all the interested parties can help reduce this risks.

- **10) Maintenance And Enhancement Risk:** The project cannot be maintained and enhance properly because of adequate documentation. The support team was not properly trained or technical platform is obsolete.

- **11) Design Risk:** Bad design decision had an impact on the system performance or it ability to satisfy the requirements.

- **12) Other Risks:** This is a catch all for risks that are hard to foresee and predict. Example: Could be a Hurricane or natural disaster forces to shutting down the organization for a week.

●Fire in building, development server crashing, virus attack.

Risk Analysis And Management: Qualitative Approach

What is Risk Analysis

It is a systematic process to estimate the level of risk for identified and approved risks. This involves estimating the probability of occurrence and consequence of occurrence and converting the result to a corresponding risk.

Risk analysis can be complex, as you will need to draw on detailed information such as

• project plans,

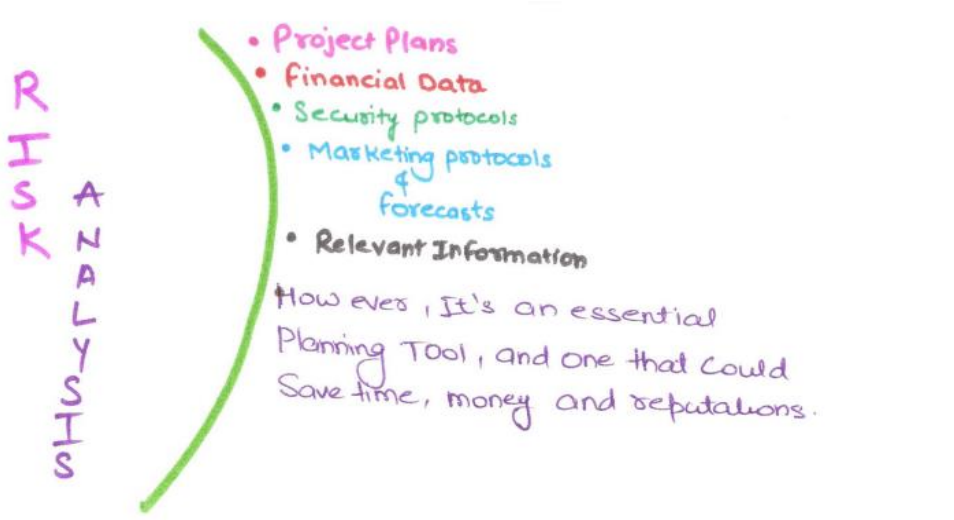
• financial data,

• Security Protocols,

• marketing protocol and forcasts,

• relevant information.

However, it is an essential planning tool, and one that could save time, money and reputations.



Qualitative Analysis

Qualitative analysis allows the main risk sources or factors to be identified.

This can be done for example-

- **Brainstorming Sessions**
- **Interviews**
- **Checklists**

When a qualitative risk analysis is performed, risk rating can be used an indication of the potential importance of risks on the program and mainly expressed as **low, medium, and high(or Possibly low, medium low, medium, medium high, and high). Lets take examples which tells the probability of risks.**

RISK	Probability	Effects
Organizational financial problems force reductions in the project budget.	LOW	Catastrophic
Used Database not able to process as many transactions per second.	MODERATE	Serious
Software Tools cannot be integrated	HIGH	Tolerable
Key Staff are ill at Critical times in the project	MODERATE	Serious
The Size of the Software is underestimated	HIGH	Tolerable
Code generation by Code generator is inefficient.	MODERATE	Insignificant
Time Required to develop the Software is under estimated.	HIGH	Serious

Quantitative Analysis

A quantitative analysis often involves more sophisticated techniques, usually requiring computer software.

To some people this is the most formal aspect of the whole process requiring.

- **Measurement of uncertainty in cost and time estimates.**

- **Probabilistic combination of individual uncertainties.**

An initial qualitative analysis is essential. Basically quantitative approach uses the technique such as Expected value, decision tree analysis, pay of matrices, and modelling and simulation.

Quantitative Risk Analysis Output Are:

- **Prioritized risk lists:-** we get a list in which all identified risks are prioritized.

- **Probabilistic cost and schedule estimate:-** we get probabilistic cost and schedule estimate which helps the project manager allocate reserve accordingly.

- **Performance parameter and validating Technical performance:** Probabilistic estimates of meeting desire technical performance, parameter and validating Technical performance of key components.

Risk Management

Risk management is the identification, assessment and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor and control the probability and or impact of unfortunate events or to maximize the realization of opportunities.

Principles Of Risk Management:

Risk Management should

- **create values**
- **be an integral part of organisational process**
- **be part of decision making**
- **be systematic and structured.**

Process or steps for Risk Management:

- **1) Establishing the context:**

It involves

1) identification of risk in a selected domain of interest.

2) Planning the remainder of process.

3) mapping out the following-

a) the social scope of risk management

b) the Identity and objective of stakeholders.

- **2) Identification:** After establishing the context, the next step in process of managing risk is to identify potential risks.

Objective based risk identification: Organisation and project team have objectives. **Scenario based identification:** Different scenarios are created. The scenarios maybe the alternative ways to achieve an objective. **Common-Risk checking :** In several industries, Lest with know -risks are available.

- **3) Assessment:** Once Risk has been identified, then must then be assessed as to their potential severity of loss and to the probability of occurrence.
- **4)Potential risk Treatments:** Once Risks have been identified assessed, all techniques to manage the risk fall into one or more of these four major categories. **A) Avoidance:** This include not performing an activity that could carry risk .

B) Reduction: Reduction of Optimization involve reducing the severity of the loss of the likelihood of the loss from occurring.

C)sharing: It defined as sharing with another party the burden of loss or benefit of gain, from a risk and the measure to reduce risk .

D) Retention: Involve accepting the loss or benefit of Gain, from a risk when it occurs.

5) Create a risk management plan: Select appropriate control or counter measures to measure each risk. The risk management plan should propose applicable and effective security controls for managing the risk.

Implementation: It follows all the planned methods for mitigating the effect of the risks. Purchase insurance policies for the risks that have been decided to be transferred to an insurer, avoid all risk that can be avoided without sacrificing the entity's goal, reduce other and retain the first.