Risk Management

Goals

We will discuss risk identification methods, quality analysis methods and quantity analysis methods and the main risk's response options.

Theory Overview

See lecture notes (Chapter 4).

Taking into account that a project evolves in a dynamical environment and brings novelty elements, risk management becomes a very important component in the field of project management. In other words, through their nature, projects involve risks that can lead from totally to partial miss-fulfillment of objectives. A project manager's goal is to attempt to avoid the large variety of risks that a project might experience or try to minimize their negative effects. The key word for an efficient risk management is *methodical*, because only a rigorous and continuous approach leads to an efficient control of project's activities and risk agent reduction.

Risk is considered as an usual disadvantageous event, having unknown characteristics but to which we may associate a number of alternatives (values and occurrence probabilities). The main components of a risk are:

- An intrusive event, its occurrence causes and the symptoms that indicate its arrival;
- Occurrence probability of that event (the qualitative analysis is also permitted);
- The effect of that event on project's course.

A project is sensitive to a risk every time when its occurrence strongly impacts the significant parts of the project. The risks frequently take shape in the form of deadline in-observance, budget exceeding, disturbing the established limits of the quality parameters and not complying with project's scope.

For risk management we may use the working diagram pictured in Figure 1, by passing through the following stages:

- Risks identification – determining and documenting the risks that affect the project;
- Qualitative/ quantitative risks analysis – determining the occurrence chance of each risk and estimating its impact on our project;
- Response planning for the main risks – determining the way of developing a response to that risk (discharging, transferring, diminishing, acceptance)

By monitoring and controlling risks, the assessment of the known risks is assured as well as discovering new risks and adequately reconfiguring of the responses according to project's development and the changes inside the internal/external context of the organization.

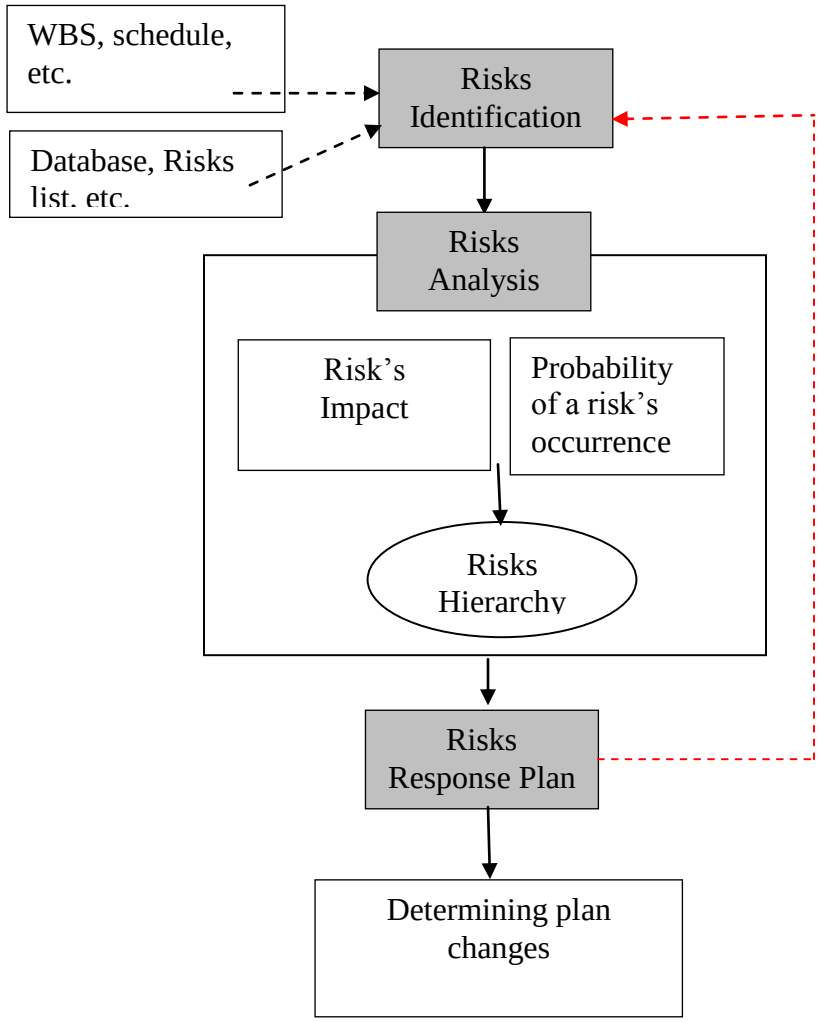

Figure 1.

1. Risks Identification (see lecture notes, subchapter 4.2.2)

Developing a list of possible risks may be achieved by:

- Consulting with all the people involved in project's development through brainstorming sessions, individual interviews and/or by consulting with the experts;
- By using the risk profile (using the experience gained in previous projects)
- By analyzing the assumptions.

The major risk sources are often the:

a) *Project's plan*:

- Unfeasible objectives;
- The lack of a detailed plan that considers all the four characteristics elements of a project (time, budget, quality, participants expectations);
- The lack of *contingency plans* (actions that will be executed in case of an undesired event occurrence);

- The absence of budgeting (costs allocated for each task).

b) Project's team

- The lack of personal and professional abilities of the team members for the well development of the project;
- The lack of motivation;
- The lack of accurate monitoring concerning project's scope, goals, role and responsibilities of each member in the project's team;
- The lack of efficient communication between project's team members.

c) Organization

- The ill-judged allocation of the necessary resources for different tasks;
- The absence of checking and rigorous assessments during project's development;
- The inadequacy of defining the working methods used by the project.

d) The Client

- Client's needs haven't been analyzed;
- The desired specifications are not clearly defined;
- The client is not informed about the project's course.

e) Managerial Support

- The top managers are not sustaining the project;
- Individual work is encouraged above the team work;
- Organization's priorities were not clearly defined.

2. Qualitative and Quantitative Risks Analysis (see lecture notes, subchapter 4.2.3 and 4.2.4)

Usually qualitative analysis is employed.

Evaluating the risks means the assessment of a risk's importance inside the project (how severe the situation will become if the risk occurs) and estimating its occurrence probability. A risk's occurrence probability and its effect over the project are independent variables.

That's why, assessing the risks assumes:

- Estimating their impact on project's scope/ quality/ schedule/ budget;
- Estimating the probability of occurrence of a risk during project's development;
- Determining project's degree of exposure to risks;
- Establishing the priority of the risks according to their degree of exposure.

A risk's occurrence determines the occurrence of another risk, inter-conditioned (ex. Exceeding the ending period for a certain phase will take to the necessity of employing auxiliary work resources for the further phases, driving to budget overflow).

3. Risks Response Plan (see lecture notes, subchapter 4.2.5)

The possible responses to manage risks are:

- *Avoiding* the risk (by eliminating the causes of occurrence);
- *Diminishing* the probability of occurrence of a risk or its impact (ex. The lack of technical infrastructure => renting or acquiring equipment);

- *Transferring risks* (ex. Sub-contracts)
- *Accepting* the risk, but *monitoring* it regularly during project's development.
- Contingency plans: *scenarios/alternative options,* that contains the activities played in case of the undesired event occurrence (for reducing the negative effects caused by the risk); for every option, its advantages and disadvantages will be considered to select the best alternative.

For avoiding the undesired effects over project's evolution a **risk response plan** is developed following the pattern described bellow:

The identified risk
Reference to risk's documentation
- Name
- Description
- Responsible with following the risk and response implementation
- Occurrence causes and action circumstances
- Impact
- Frequency of occurrence and action range
- Priority

Describing the response and the backup plan – including the schedule, budget
Residual risk (unsolved risk), secondary risks

Risks must be periodically analyzed to discover if they become critical or there are new risks that require new contingency plans. Controlling the risks factors must be more frequent when the project begins. Also, we must consider the technical (when the projects last more than a year because the life cycle in information technology is considered to be below 2 years).

4. Risks Monitoring and Control (see lecture notes, subchapter 4.2.6)
Risks monitoring and control evolves collaterally with the project's monitoring. The tracking and control strategies must take into account that:

- The project manager must assure that exists at least one person responsible to each risk category;
- The risk recording system must be developed based on their classification using the degree of exposure and the recorded data must be updated continuously;
- The well known risks must be analyzed to observe the degrees of exposure to each risk;
- Actualize the risk responses;
- Identify new risks categories that may occur in project's development.

Working Plan

To one of the presented applications you may pass through the following steps:

- Identify the main risks and their triggers, their symptoms (document the risks following the description in 4.2.2 for 3 risks);
- quality analysis of risks: occurrence frequency, their impact on project's goals, quality analysis, time analysis, costs analysis and category separation;

- Determine the proper response to the identified risks: accepting, eliminating, diminishing, transferring and identifying secondary and residual risks.
- Update the WBS, the tasks list, project's diagram, the schedule and the budget.