



فرآیند جامع مدیریت ریسک در پروژه

به همراه آموزش نرم افزار

Risk Analysis

جلسه دوم



Masoud_amani_pm



m.amini555@gmail.com



Masoud_amani555

www.aminipm.com

مدرس : مسعود امینی

پنج مرحله اصلی توسعه پروژه یا طرح از نگاه CMAA

CMAA has defined five major phases of project and/or program development:

- 1) Pre-design phase
- 2) Design phase
- 3) Procurement phase
- 4) Construction phase
- 5) Post-construction phase

پنج مرحله اصلی توسعه پروژه یا طرح از نگاه CMAA

- ❑ Risk management meetings should be held **during each phase** to help the project team identify and focus on the risks that can be managed within a particular phase.
- ❑ Risks are categorized as **internal** events a project team has control over and **external**, events it does not have control over.

Risk Management Plan

- ❑ The risk management process should start at the very beginning of the project with development of a Risk Management Plan (RMP).
- ❑ A Risk Management Plan explains the processes for **identifying**, **assessing**, **mitigating**, and **managing** potential risks.
- ❑ The plan should contain a statement of **purpose** for the risk management process and a set of project performance objectives.
- ❑ The RMP is part of the Project Management Plan.

Risk Management Plan

- ❑ The RMP should define key risk terminology, establish program and process policies, and identify each stage of the process.
- ❑ More specifically, the plan should **document** the risk identification and **mitigation** methods to be used.
- ❑ This plan should help guide a project team's overall understanding of risk management processes, and create a **personal** commitment to using risk management methodology.

Risk Management Plan components

The following components must be defined in the RMP:

□ Purpose:

- The reason **why** risk management is **important** to the project, and why it is being implemented.

Risk Management Plan components

❑ Organization/Roles and Responsibilities:

- An organization chart identifies the people and roles **responsible** for managing a project's risk.
- A project's risk manager should be identified by **name** and **title**.
- The role of the risk manager and their organizational **relationship** to other members of the project team should also be clearly defined in the RMP.

Risk Management Plan components

- ❑ On large projects, a **risk specialist** will act as the risk manager.
- ❑ A risk management specialist is an individual with specific **training** and **expertise** in decision making and risk mitigation.
- ❑ The specialist **monitors** and **assesses** all potential risks.
- ❑ Risk management specialists hold additional credentials, such as a professional **certification**.

Risk Management Plan components

- ❑ For medium and small projects, with owner concurrence, a **CM** may act as the **risk manager**.
- ❑ Risk managers should operate **independently** from the rest of a project team, as doing so enables the risk manager to give an **unbiased opinion** of a project's risks.
- ❑ If the risk manager is not given independent authority, they could potentially be influenced by others within their organization to provide a falsely **optimistic** opinion, thereby yielding an **untrustworthy** risk assessment.

Risk Management Plan components

❑ Risk Assessment Thresholds:

- ❑ For large programs, there are typically project value thresholds which require a **formal** risk assessment to determine an appropriate project contingency.

For example, a large infrastructure program might require all projects with an estimated cost over a certain dollar amount perform a risk assessment to determine a **cost** and **schedule** contingency.

Risk Management Plan components

□ Risk Assessment Thresholds:

- For medium and small projects, risks must be **acknowledged** and contingency plans must be created.
- However, no formal risk assessment study is required.

Risk Management Plan components

Risk Meeting Structure and Reporting:

- ❑ **Meetings** are an essential part of risk assessment, therefore meeting structure must be established in an RMP.
- ❑ The structure must identify **meeting times**, **frequency** of **occurrence** and a **list of required** attendees and **goals**.
- ❑ On large projects, formal risk reviews are held **each month** to review current risks and identify new risks.

Risk Management Plan components

Risk Meeting Structure and Reporting:

- ❑ Meeting frequency is dependent upon the **stage** of the project.
- ❑ In general, fewer meetings are held during the **design** phase than the **construction** phase.
- ❑ For medium and small projects, risk is **tracked** by the **CM**.
- ❑ The **CM** shares their assessment with the **owner** by including it in their monthly project report.

Risk Management Plan components

Confirmation of the Risk Management Budget:

- ❑ Any **funds** used for risk management should be **documented** in the **plan**.
- ❑ Examples of risk management items include **travel costs** for team members to provide support or participate in a risk assessment **workshop**, **software** costs for modeling, or third party **consultant** fees.
- ❑ While these costs may also be included in the overall project budget, it is important to document them here as well.

Risk Management Plan components

Documentation of Version History and Approvals:

- ❑ Any time a new version of the RMP is released, all changes from the previous version to the current version must be **documented**.
- ❑ A good RMP will require all project stakeholders to approve its latest version before that version is published.

Risk Management Plan components

Documentation of Version History and Approvals:

- ❑ This Risk Management Guideline can be adopted for the RMP.
- ❑ It is important for the RMP to be established at the beginning of a project and approved by the owner and the CM.
- ❑ Approval will ensure the RMP is part of the contract documents.

Benefits of the Risk Management Plan

- ▶ The RMP allows the team to focus on the implementation of the framework across the lifecycle of the project.

Key benefits include:

1. Formal documentation of the RMP
2. Transparency of meeting routines, input, and output
3. Establishes the communication protocol by providing clarity to the division of responsibility within the RMP

Implementation Strategies

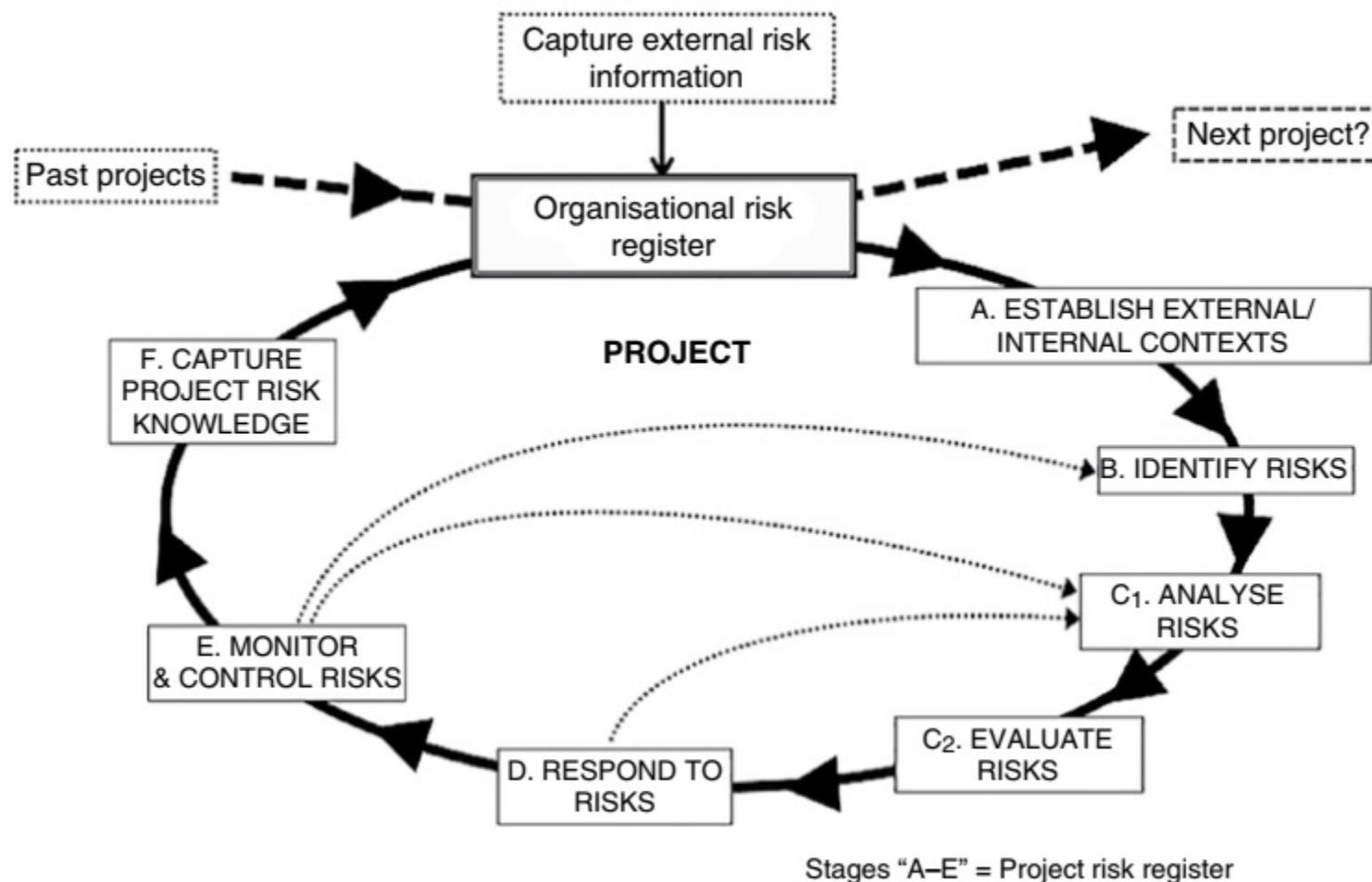
- ❑ Developing an RMP should not be an extremely time-consuming endeavor, nor should maintaining one be administratively burdensome.
- ❑ A project's risk specialist or CM should draft the project's RMP early in its lifecycle, for review and approval.
- ❑ RMPs can be project-specific or can apply to all projects within a program.

معرفی چرخه سیستماتیک ریسکهای پروژه

- ❑ Systematic risk management is a **dynamic process of activities** intended to deal with project risks.
- ❑ When the process includes the deliberate **capture of risk knowledge** from a project, it becomes a **learning activity** in addition to its management function.
- ❑ If the process, together with the acquired knowledge, is then applied to subsequent projects, it becomes a **learning cycle**.

معرفی چرخه سیستماتیک ریسکهای پروژه

- The next picture shows how this is achieved, and indicates important activities and system requirements for effective risk management.



The dynamic cycle of project risk management

- ❑ The cycle of systematic risk management assumes that a stakeholder comes to a new project with some archival level of organizational information that encapsulates its knowledge (and hopefully its wisdom too) about project risks.
- ❑ While the project and its uncertainties will be new, they will not necessarily be unique in terms of their risk characteristics.
- ❑ Similarities to previous projects are likely to exist, and the existence of a searchable database allows that to be confirmed or disproved.

Organizational Risk Register (ORR)

- ❑ It is arranged as an organization-wide repository of risk information and is distinguished from documents intended to record risk management activities for individual projects.

- ❑ **PRR** : Project Risk Register
- ❑ Tasks B, C, and D is project-specific document

A: Establish External/Internal Context:

Thorough contextualization will also expose the internal and external drivers which will shape or influence the project risks that are identified.

B: Identify Risks

- ❑ For risks to be managed systematically, they must **first** be **identified**.
- ❑ Otherwise, they are unknown (or at least unrecognized) but possible future events that, should they eventuate, may have to be dealt with in a purely reactive manner.

C1: Analyze Risks

- ❑ This stage marks the first of the actual assessment activities in the risk management cycle.
- ❑ This analysis is done simply to gauge the **importance** of each risk relative to that of **other** risks.

C2: Evaluate Risks

- ❑ The evaluation process focuses on the level of risk in terms of magnitude of the potential severity or benefit.
- ❑ This process also considers each **identified** and **analyzed** risk against the parameters of any **strategic risk management** criteria that the **stakeholder** may have established.

D: Respond to Risks

- ❑ At this point each evaluated risk (usually in highest rank order) is explored in terms of possible treatment or response options.
- ❑ One outcome of this stage, bearing in mind the possible iterations of Stages B–D, will be a partially complete PRR for the stakeholder.

E: Monitor and Control Risks

- ❑ The frequency of risk management activity undertaken by the stakeholder may be aligned with other progress, cost, quality, safety, and environmental review procedures implemented for the project.
- ❑ While it should be possible to ‘close off’ some risks on the PRR as their associated ‘real-time’ activities are completed, changing project circumstances may give rise to the emergence of new risks or different parameters for existing risks.

Capture Project Risk Knowledge

- While the capture of project risk knowledge is shown towards the end of the risk management cycle. Ideally, knowledge capture should be carried out as soon as possible after the completion of particular components of a project, while participants' memories are still fresh.

Capture Project Risk Knowledge

- ❑ This can be done through 'lessons learned' project debriefing workshops, with relevant information entered into the ORR.
- ❑ Risk information gleaned from other sources (external to the project and the stakeholder).

بررسی و معرفی رویکردها، روشها و ابزارهای شناسایی ریسکهای پروژه

شکست بسیاری از پروژه ها نقصان در شناسایی و ارزیابی ریسکها می باشد.
از آنجایی که دانش و تجربه یک تیم و چند نفر بیش از دانش و تجربه یک نفر
می باشد، لذا فرآیند شناسایی ریسکها می بایست توسط یک **تیم** صورت پذیرد.

از یک دیدگاه دو روش برای شناسایی ریسکها وجود دارد :

۱- روش شناسایی مستقیم ریسکها

۲- روش های مبتنی بر تجربیات پیشین

۱- روش شناسایی مستقیم ریسکها

- روش Mind Mapping
- روش طوفان مغزی Brainstorming
- روش تفکر خارج جعبه Out of the box thinking
- روش قیاس
- روش نمودار علت و معلول Cause and Effect Diagram
- تجزیه و تحلیل SWOT

۲- روش مبتنی بر تجربیات پیشین

- روش Top 10 Risk (۱۰ ریسک مهم)

- Check List

- Taxonomy-Based Questionary پرسشنامه مبتنی بر طبقه بندی

– روش Mind Mapping

در این روش کلیه خطاهایی که در پروژه رخ می دهد (حتی خطاهای کوچک) و یا خطاهای ثبت شده از درس آموخته های پروژه های پیشین ثبت شده است، لیست شده و دلایل وقوع آن خطاها و تاثیری که می تواند بر روی نتایج پروژه داشته باشند، به دقت بررسی می شوند.

– روش Brainstorming

یکی از روشهای بسیار مفید در شناسایی ریسک های پروژه با تشکیل جلسات طوفان مغزی می باشد که این جلسه توسط یک نفر تسهیلگر هدایت می شود.

for this purpose:

- 1) Clearly identify the stakeholder.
- 2) Clearly identify the project
- 3) Confirm the project contexts (objectives, etc.)
- 4) Clarify relevant external contexts (the risk drivers)
- 5) Select the project environment(s) to be considered:
procurement, operation, and disposal.

- 6) Select the appropriate risk identification technique(s)
- 7) Focus on the associated project decision making, and then:
- 8) Ask the question(s): What uncertain aspect(s) of the decision(s) could threaten a satisfactory outcome (achievement of objectives) for this stakeholder?

9) Note that for opportunity risk identification:

What additional benefits beyond the achievement of objectives could this decision realize for this stakeholder?

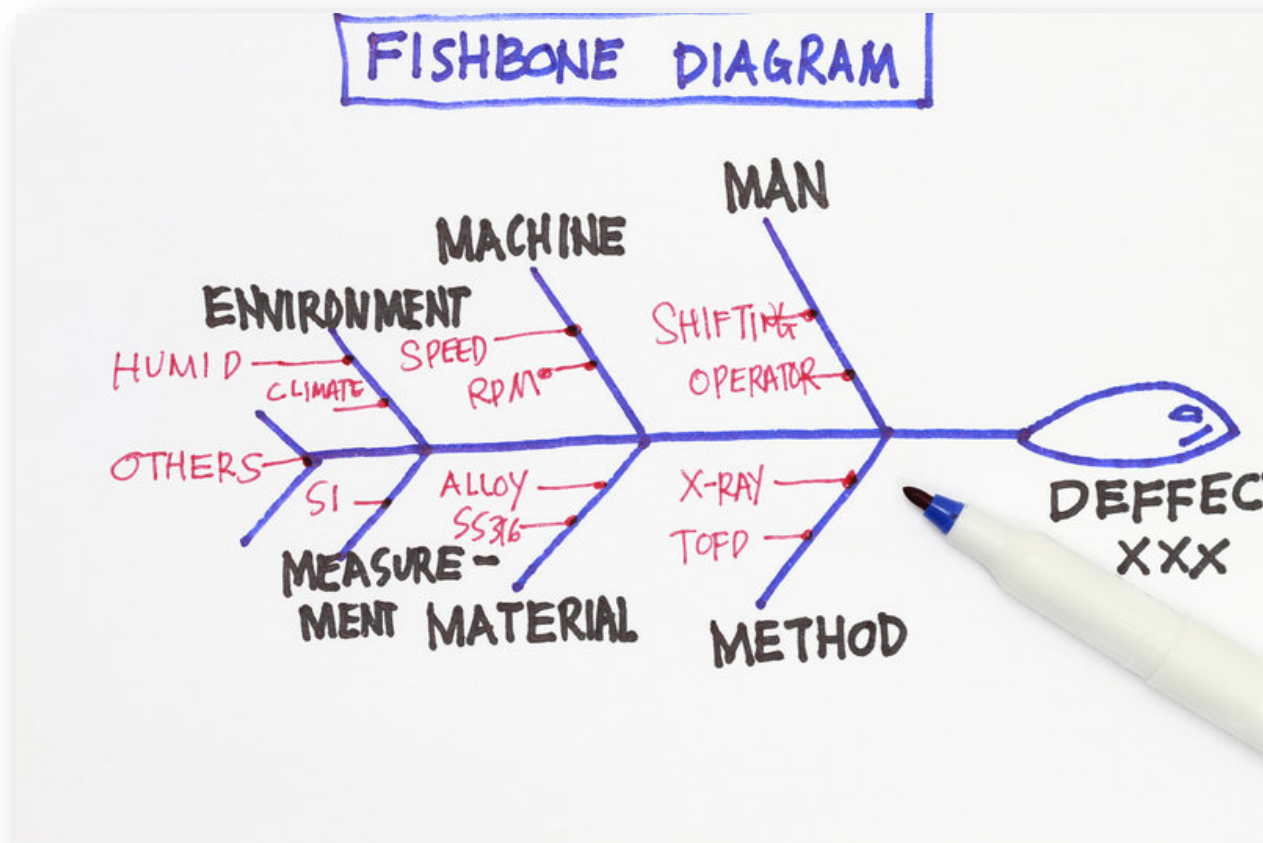
- روش مقایسه

استفاده از تجربه افراد با تجربه جهت پیش بینی ریسک های بالقوه از تجربه پروژه های پیشین برای پروژه فعلی

– نمودار علت و معلول

نام دیگر این روش نمودار استخوان ماهی یا ایشی کاوا است. این روش بیشتر در سیستم های کیفیت برای شناسایی علل خرابی محصول مورد استفاده قرار می گیرد. از این نمودار برای شناسایی علل ریشه ای مشکلات پروژه نیز می توان استفاده نمود.

- نمودار علت و معلول



-تجزیه و تحلیل SWOT

در این روش نقاط ضعف و قوت تیم پروژه و سازمان در کنار فرصتها و تهدیدهای احتمالی تجزیه و تحلیل شده و ریسک های بالقوه به همراه راهکارهای لازم برای کاهش اثرات آنها برای پروژه شناسایی می شوند.



-روش Top 10 Risk

در این روش بعد از تهیه لیست ریسکهای بالقوه، بر اساس سیاستهای سازمان و بودجه و محدودیتهای زمانی و الزامات مشتری و ... ، ریسکهای مهمتر از بین آنها انتخاب و روی آنها تمرکز خواهد شد.

– روش Check List

با استفاده از تجربیات افراد، چک لیست کاملی از انواع ریسکها تهیه نموده و از این چک لیست به عنوان راهنما در شناسایی ریسکهای پروژه استفاده نمود.

از چک لیست می توان برای ثبت درس آموخته های پروژه های قبلی نیز استفاده نمود.

– پرسشنامه مبتنی بر طبقه بندی Taxonomy-Based Questionary

در این روش ریسکها از طریق طبقه بندی آنها شناسایی می شوند. سپس بر اساس این طبقات، سوالاتی مطرح می شود که با پاسخ به این می توان ریسک های پروژه را شناسایی نمود.