

Manage project risk

Learner Guide



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1. Identify project risks

1.1 – Determine risk objectives and *standards*, with input from stakeholders

Determine risk objectives

Risk objectives are those things that increase the likelihood and impact of positive occurrences in the workplace; likewise, they decrease the likelihood and impact of negative occurrences.

Risk management will include the following processes:

- Planning risk management
- Identifying risks
- Qualitative risk analysis
- Quantitative risk analysis
- Risk responses
- Controlling risks.



The project objectives that you are trying to determine risk for may include:

- Project scope
- Project schedule
- Project cost
- Project quality.

The first thing you need to think about before setting the risk objectives is your organisation's mission statement and its vision for the particular project you are involved in.

The risk objectives should be simple, concise and reflect your organisational goals.

Examples of risk objectives include:

- Allocate capital resources more efficiently
- Broaden understanding of risk to gain an advantage over competitors
- Improve risk response mechanisms for low probability/catastrophic/critical risks
- Improve cost-efficiency of risk management
- Improve management of resources to lower costs.

In order to accurately define risk objectives, you will need to ask the right questions -you need to be honest with your answers and don't try to sugar coat negative situations, as this will mean you don't identify those risks which need to be addressed before it's too late.

Questions may include:

- What are your business objectives/strategies?
- What are your financial targets?
- What are your markets?
- What is your position in the market?
- What assets do you have? What are their risks?
- What future events may impact on your objectives?
- How sensitive are project operations to external changes?
- What are your expected returns?
- Do you have a contingency plan if the risks have a negative impact?
- How badly will negative risks impact on performance? i.e. do you have the finances to recover from them?



Once you have answered the above – you will have strong grounds for creating risk management objectives. You will need to use the information to realistically assess and plan for risks, to ensure your project is not negatively affected by them.

Predicting risks

While risks are largely unpredictable, you must still assess the project environment and determine the likelihood of certain events happening and manage against them.

You will need to be familiar with both risk and project objectives – share these with key stakeholders and use their input to help define risk categories.

Break the project into stages and identify the possible risks at each stage.

You can also use the stakeholders to establish health and safety policies as well as coming up with ways to implement your risk management systems.

The strategies you can use to facilitate these discussions include:

- Discussions with experts
- Brainstorming
- Assessing prior incident reports
- Insurance broker files
- Consultation with government regulators
- Research on websites.

Determine standards

It is important to be familiar with the required standards in your industry for risk management, as these will govern the minimum requirements you will need to implement to be legally compliant.

Standards may include:

- Australian and international standards
- Enterprise and industrial agreements
- Industry codes of practice
- Industry standards
- Organisational and industrial agreements
- Organisational policies, systems and procedures
- Regulations and legislation.



Ensure that the standards you are referring to are the most current for your industry. Create manuals for your organisation that specifically deal with how to comply with legislation, regulations and codes of practice.

When new standards are released, you will need to update these manuals accordingly.

Ensure that you are compliant with safety regulations and the rights of employees and employers in the workplace.

It is a good idea to implement a change management strategy in order to ensure compliance is maintained throughout the project life cycle.

1.2 – Establish *project risk context* to inform risk management processes

Project risk context

The context that you create your risk management process within will differ between projects. For example, a start-up company will have different objectives and processes to an established market leader; also, industries have different risks, a technology company will have an entirely different risk management process to that of food services company.

You will therefore need to consider which risk categories apply to your project.

Risk categories can include:

- Health and safety
- Monetary
- Operational
- Reputation.

You need to also decide whether you are looking at risks over the entire project or a specific phase of it.

You also need to determine the parameters of risk – what is the difference between a high, medium, low and negligible risk?

You also need to decide the risk response for high level risks – what will you do, what are the reporting procedures and at what point do you need to take action?

Project risk context may include:

- Legislation and regulation controls
- Nature of project
- Organisational risk policies and procedures
- Project environment
- Stakeholder expectations.

External/strategic context

This context refers to those variables that exist outside of your organisation that you can't control.

So, for example:

- Political issues
- Legal issues
- Environmental issues
- Safety issues
- Financial issues
- Commercial risk.



You need to be aware of who the key stakeholders are for the above contexts. It is also a good idea to conduct a SWOT analysis to help assess the major risks for external contexts.

Internal/organisation context

This context refers to those variables that exist inside of your organisation that you can control.

So, for example:

- Goals/objectives of the organisation
- The area of risk assessment
- Structure of you organisation
- Attitudes towards risk
- Resources available for risk management
- Organisational environment.



1.3 – Identify *project risks* using valid and reliable *risk identification methods*

Project risks

Project risks must be identified using the most effective risk identification methods. This means that you can be certain that the risks you identify are to be taken seriously. If you cannot trust the risks you have identified are real, then you may be wasting resources implementing measures to control them.

Project risks may include:

- Predicted future events
- Threats
- Opportunities
- Hazards.



Risk-identification methods may include:

- Conducting or supervising qualitative and/or quantitative risk analysis, such as schedule simulation, decision analysis, contingency planning and alternative strategy development
- Lessons learned from previous projects
- Personal experience input
- Previous risk registers
- Risk workshops
- Subject matter experts
- Using specialist risk analysis tools to assist in the decision-making process.

You will need to think of risks in terms of likelihood and consequence – that is, how likely it is that they will occur and the impact they will have should they do so.

Risk is often thought of in terms of the following equation:

Risk = Likelihood x Consequence

Likelihood – qualitative analysis

You will need to perform quantitative and qualitative risk analysis in order to determine likelihood.

Risk probability and impact assessment

Risk probability assessment examines the likelihood of each specific risk occurring.

Risk impact assessment examines the potential impact that a risk can have on project objectives such as cost, schedule, performance or quality. It includes assessment of positive and negative risks (i.e. opportunities and threats).

You should consult with stakeholders to determine the probability and impact of each individual risk – this can be done through interviews or meetings.

After this, risk probabilities and impacts will be rated according to pre-determined definitions, with low risk items being added to a risk register for later consideration.

The can then be displayed in probability and impact matrix, as seen on the next page. The darker the shade of purple, the higher the category of risk. What constitutes a high and low risk is usually an area determined by your organisation.

This will then allow you to prioritise which threats should be dealt with first (the high risk ones), with aggressive strategies. Similarly, high risk opportunities (easily targeted and with the greatest benefit) should be dealt with first. The low risk opportunities and threats should be monitored and dealt with only if they suddenly present a higher risk.

Risk data quality assessment

This assesses the reliability of your data for risk management – it does this by assessing the degree that the risk is understood and the accuracy and quality of the data you have on it.

The purpose of this is that, if your data is poor quality, your risk assessment will be pretty much pointless. If you find that your data quality is too low, you will need to go back and collect better data.

Risk categorisation

Risks can be sorted into categories, in order to be dealt with separately and most effectively. These categories may include risk sources and areas affected by risks, for instance. You can further divide these up, for example, into common causes of risk; therefore, you can deal with the cause of the risks you want to prioritise. This means that overall risk response is more efficient and effective.

Risk urgency assessment

This allows you to determine the priority/timescale in which you need to deal with individual risks.

There are various indicators of risk urgency, such as:

- Likelihood of detecting risk
- Symptoms of risk
- Time to risk response
- Risk rating.

You can use a risk and probability impact matrix to determine the severity of individual risks.

Expert judgement

This is where you use an expert on risk – they can determine where the risk should sit on the matrix. The experts usually have prior experience with similar projects and they are either interviewed or attend a risk facilitation workshop. Beware of any bias of the experts and take it into account when making your objective judgement.



Probability and impact matrix

Probability	Threats					Opportunities				
	0.90	0.05	0.09	0.18	0.36	0.72	0.72	0.36	0.18	0.09
0.70	0.04	0.07	0.14	0.28	0.56	0.56	0.28	0.14	0.07	0.04
0.50	0.03	0.05	0.10	0.20	0.40	0.40	0.20	0.10	0.05	0.03
0.30	0.02	0.03	0.06	0.12	0.24	0.24	0.12	0.06	0.03	0.02
0.10	0.01	0.01	0.02	0.04	0.08	0.08	0.04	0.02	0.01	0.01
	0.05 / Very low	0.10 / Low	0.20 / Moderate	0.40 / High	0.80 / Very high	0.80 / Very high	0.40 / High	0.20 / Moderate	0.10 / Low	0.05 / Very low

Likelihood – quantitative analysis

As well as qualitative analysis (based on judgement and opinions), you will need to perform quantitative analysis, using facts and statistical risk calculations.

This is usually done on those risks that have been identified as priorities from qualitative risk assessment – they determine the impact they will have on project objectives. This then allows you to rank them.

In order to perform an effective quantitative analysis on risk, you will need:

- Risk management plan
- Cost management plan
- Schedule management plan
- Risk register
- Enterprise environmental factors (external assessments by experts and databases)
- Organisational process assets (information from previous, similar projects).



Interviewing

You will need to draw on historical data of interviews, for low and high priority risks and assess it against the current situation.

Probability distributions

These show the uncertainty in values – for instance costs and schedules. In other words, it shows the possibility of variance from your estimates.

The distribution is shown on a graph as a value between 0.0 and 0.1, to represent uncertain events over a period of time.

Sensitivity analysis

This determines which risks have the greatest impact on project. It relates variations in objectives to uncertainties and tells you how much each one affects the other.

Expected monetary value analysis (EMV)

This calculates the average outcome for events that have uncertainty attached to them. Opportunities are expressed as positive values, while threats are negative ones.

EMV is calculated by multiplying the value of a possible outcome by its probability – this is done for each outcome and they are all added together to give an overall picture of the entire project. This is commonly displayed in a decision tree.

Modelling and simulation

This relates detailed uncertainties of a project to their potential impact on project objectives. Simulations are performed (using the Monte Carlo technique), using inputs from the relevant area of risk you are assessing.

Expert judgement

This involves experts (with recent experience) in the area of risk you are assessing identifying the possible cost and schedule impacts, evaluating probability and defining the required inputs for effective assessment.

They can also help you interpret the data you collect – they can determine which analysis tools and techniques will be the most effective, as well as those which your organisation is most capable of performing.

Consequence

Consequence refers to the impact that a risk may have on your project (should it be realised).

It is measured in terms of severity e.g. catastrophic high, medium, low, negligible.

Consequences can be positive or negative – for instance, market share increase or decrease.

Examples of consequences include:

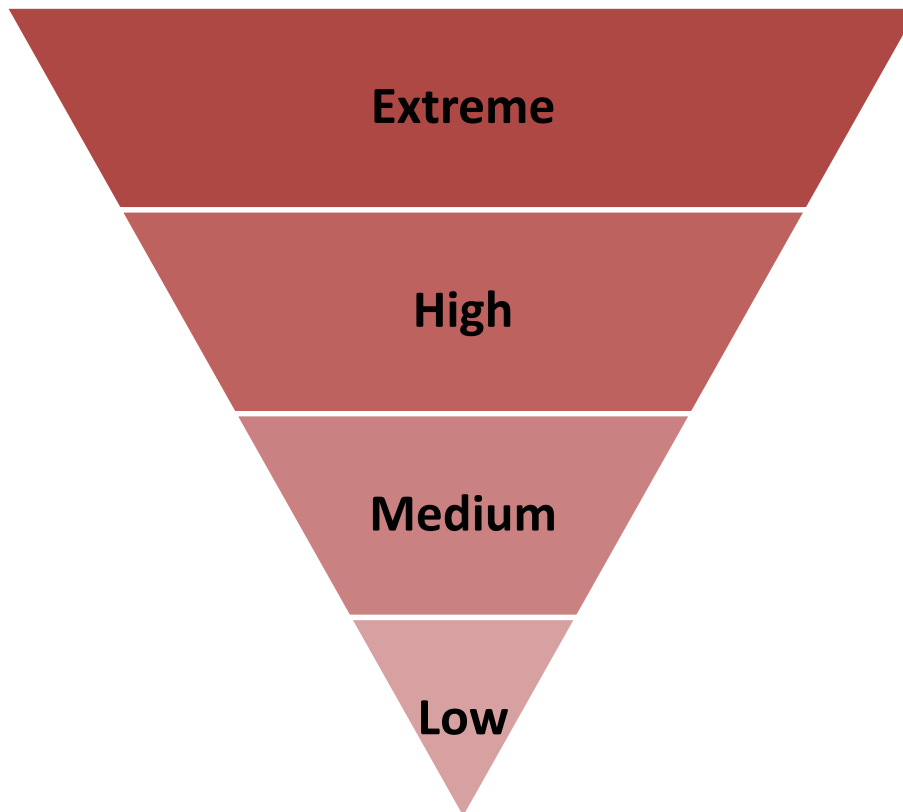
- Project delay
- Personal injury
- Equipment damage
- Environmental impacts
- Profit increase/decrease
- Reputation improvement/damage
- Legal problems/opportunities.



Risk can be placed on a scale from catastrophic to negligible and be categorised as appropriate. Be aware that there is no one definition of what constitutes each level of severity. In other words, what is catastrophic for one project is not uniformly so for all other projects.

Your organisation will need to develop its own classifications of risk severity. Take into account the objectives of the organisation, its assets and amount of resources invested in the project you are assessing.

For example, a negligible loss for a multibillion dollar organisation could be something like \$100 million; for a small start-up company, this would bankrupt them.



Risk identification template

The following is an example of the approach you can take to identifying the risk for a project:

Critical success factors

These are the factors that are most important to the success of your risk assessment.

- You will need to compile and document the following information:
- Background information
- Lessons/evaluations from previous projects
- Risk statement
- Risk assessment
- Risk registers
- Associated risks
- Consultation with stakeholders/expert.

Involved personnel

These may include:

- Stakeholders
- Experts
- Team members
- Managers
- Supervisors.

Limiting factors

These will list the constraints of your risk assessment and may include:

- Costs
- Unreliable data
- Unpredictability of events
- External factors
- Assumptions.

**Risk objectives**

This is basically to assess the risks associated with a particular project in terms of likelihood and consequence.

You will need to create a list of hazards and situations that may impact on the achievement of the project objectives.

1.4 – Classify project risks within agreed risk categories**Industry sector risk classifications**

As previously mentioned, risks need to be categorised in order to be dealt with most efficiently. Within these categories, risks can then be classified as unacceptable, undesirable, tolerable or broadly acceptable.

Remember that your organisation, as well as the industry sector it is within, will have its own risk classifications – these must be fully for.

contained
accounted

Risk categories may include:

- Communications
- Compliance
- Consultative
- Environmental



- Finance
- Health and safety
- Human resources
- Legal
- Organisational brand
- Physical
- Political
- Project assumptions
- Project constraints
- Project process risks
- Quality
- Social
- Technology.

The following outlines the three most common types of risks and their classifications:

Scope risk

You need to clearly define the deliverables, objectives, project charter and scope in order to minimise scope risk.

You can classify the following under scope risk:

- Scope creep
- Hardware defects
- Software defects
- Poorly-defined scope
- Sudden changes in legal/regulatory framework
- Integration defects.



The scope risk will depend on matters like how reliant on technology the project is, or the external market, for instance. The risk framework will analyse these and determine how changes will affect the outcome of the project overall.

Schedule risk

You will need to ensure that you keep to schedules and critical paths in order to achieve objectives.

The types of schedule risks that exist are:

- Estimation errors
- Reliance on third parties
- Hardware/software delays
- Poor decision making.

Resource risk

You will need to ensure you have the correct resources to complete a project, in terms of staff and team members.

Types of resource risk include:

- Unskilled staff
- Under-staffing
- Key project members not instated early on
- Insufficient funds
- Inadequate technology.

Acting on risk classification

Once you have classified risks accordingly and ranked them wither unacceptable, undesirable, tolerable or broadly acceptable, you must now act upon the accordingly.

Risk classification	Actions
Unacceptable	Stop the activity Transfer the risk
Undesirable	Transfer the risk Treat the risk (according to likelihood and consequence)
Tolerable	Treat risk (according to likelihood and consequence)
Broadly acceptable	Tolerate the risk (do nothing)

2. Analyse project risks

2.1 – Determine risk analysis classification criteria and apply to agreed *risk ranking system*

Risk ranking system

Having a risk ranking system allows you to easily

Risk ranking system may include:

- Classification rankings from low to high
- Consequence of risk scale
- Impact of risk scale
- Manual or software-based systems
- Organisational risk policies and methods
- Predetermined ranking criteria
- Target and trigger settings.

Risk matrix

The following key indicates the level of risk:

- E = Extreme
- H = High
- M = Medium
- L = Low

The risk assessor will need to assess what constitutes each level of risk for this particular project.

RISK MATRIX		Likelihood				
		Rare	Unlikely	Possible	Likely	Almost certain
Consequence	Catastrophic	M	H	H	E	E
	Major	M	M	H	H	E
	Moderate	L	M	M	H	H
	Minor	L	L	M	M	H
	Negligible	L	L	L	M	M

Impacts of risks

The impacts of extreme risks are generally more severe than those of low ones. As such, the ways they are dealt with differ quite dramatically.

Low risks are usually not dealt with as they don't need to be – they may be reassessed in the future to see if their classification has changed/risen enough to warrant action.

Moderate risks can either be high likelihood events with minimal consequences or low likelihood events with more severe impacts. While the minimal consequence risks pose little threat by themselves, you need to evaluate their combined impact on project outcomes (i.e. what happens if they all occur) and ensure you are covered for this instance.

High risks have high likelihood combined with a moderate to impact or a moderate likelihood with a high impact. You will need to take action reduce the probability and/or impact of high risks occurring.

Extreme risks are those which have a high likelihood and severe consequences – these risks should be dealt with as a priority over all others.

Dealing with risks

You will need to determine what your organisation's tolerances of risks are, in order to create consequence of risk scale. This is because some people will be willing to take risks, while others will always want to play it safe.

You will need to decide on things such as the following:

- Risk tolerance levels
- Influence of risk determination
- Impact on risk management policies
- Management of identified risks
- A standardised risk assessment process



Be aware that unexpected situations may arise and these can alter the scope or a specific phase of your project.

However, you can combine risk classification and ranking to minimise the amount of unforeseen circumstances that arise. You should also make sure that those involved in the project are made aware of the risks, the control measures and the person(s) responsible for implementation.

Creating an effective risk management framework can include:

- Risk management plans
- Creating action plans
- Determining strategic and operational risk
- Creating risk policies
- Documenting risk records
- Creating risk management checklists
- Formatting risk templates
- Outlining risk management procedures
- Document risk reports.



2.2 – Use risk analysis processes, within *delegated authority*, to analyse and qualify risks, threats and opportunities

Risk analysis processes

Risk analysis processes have already been dealt with in section 1.3 of this unit. They are important, as they will allow you to analyse and qualify risks, threats and opportunities.

You must perform these processes within your delegated authority; that is, only carry out the activities you have been authorised to do.

Delegated authority refers to planning and activities that may:

- Be conducted routinely or as changing circumstances dictate
- Be done independently within broad guidance
- Involve consultation with other project members, teams and internal stakeholders
- Involve taking a lead role in a team where required
- Involve the selection, use and supervision of appropriate risk management methods, tools and techniques.

Be aware that your risk analysis methods will need to be updated to ensure they do not provide the same results over and over again. So, ensure that you refresh the information you use to conduct risks analysis, as situations may have changed since the last time you did one.

Using a SWOT analysis

Strengths, weaknesses, opportunities, threats (SWOT) analysis

You can conduct a SWOT analysis to identify strengths and weaknesses, opportunities and threats.



If you were to do a SWOT analysis on project risk, you would need to determine the following:

- Project objective
- Person in charge of communicating objective
- Stakeholders and team members involve
- Whether to perform the analysis before, during or after the project
- Identified risks and activities for the project.

Examples of questions to include in a SWOT analysis include:

Strengths	Weaknesses
<ul style="list-style-type: none"> ➤ Are the necessary skills available? ➤ Is the budget enough? ➤ Will any new equipment be required? ➤ What level experience is on the team? ➤ What are the project objectives? 	<ul style="list-style-type: none"> ➤ What impact will risks have on costs? ➤ How much will contingencies cost? ➤ Will any outsourcing be required? ➤ Is the schedule reasonable?
Opportunities	Threats
<ul style="list-style-type: none"> ➤ Can the project be applied nationally/internationally? ➤ Do your competitors have weaknesses? ➤ Industry trends? 	<ul style="list-style-type: none"> ➤ Is your competition well established? ➤ Will experienced staff leave your organisation? ➤ Are new methods/technologies fully tested?

➤ What new developments have occurred?

➤ How will external factors affect your project?

As well as SWOT analysis, you will need to have a built in system for your organisation so that you can identify and flag any issues to management early on, without the need for a specific assessment.

Risks assessment should be part of your planning processes and be discussed consistently at team meetings, so it becomes an automatic part of operations (rather than an additional afterthought).

Are there already existing risk management tools and techniques used across you organisation? How effective are they? What existing data, tolls and templates do you have access to? Can you streamline your data capture methods in any way and save time and resources from repeating the same tasks multiple times?

Involving relevant personnel

It is a good idea to involve key personnel when dealing with risk management.

These include:

- Project members
- Team members
- Internal stakeholders.

These people can offer knowledge, expertise and suggestions on risk analysis, opportunities and threats. If you collate this knowledge, you can take the most informed and appropriate action.



Establish and implement a consultation framework for this sort of situation and document your findings – then you can deliver them to the relevant personnel.

2.3 – Determine risk priorities in agreement with project client and other stakeholders

Determine risk priorities

You will identify a number of different risks in your project.

You will need to prioritise them based on their likelihood and consequences discussed earlier in this unit (1.3).

Risk probability

This accounts for those things in a project that may occur, with a probability ranging from one to 99 per cent. You will need to determine and rank the likelihood of all of the risks relevant to your project.

Risk impact

This is otherwise known as the consequence; risks will usually constitute a negative impact, but the magnitude of this will vary depending on the situation of your organisation and the resources and money invested in the project.

Based on your risk probability and impact assessment, you will likely be in a situation to agree on risk priorities with your client and the relevant stakeholders, if the project is relatively small.

For larger projects, you will need to have a more structured approach to the prioritisation, to ensure the decisions are objective.

You will need to ensure the correct participants are included in the decision-making process.

These may include:

- Project manager
- Project client
- Stakeholders
- Team members.



Compare the risks against one another and come to an agreement as to which pose the most immediate and substantial threat to project objectives. Take into account the needs of the client and try and meet them as much as possible when prioritising risks.

You can use the following templates as guides for the process:

Risk	Area of impact	Likelihood	Consequence

Risk	Evidence	Stakeholder view	Project team view

Risk	Priority	Ranking

2.4 – Document risk analysis outcomes for inclusion in risk register and *risk management plan*

Risk register

A risk register is a risk management tool that keeps a record for all identified risks within an organisation, including information such as:

- Source of the risk
- Nature of the risk
- Probability of risk occurring
- Risk score (Likelihood x Consequence)
- Risk treatment option
- Risk counter measures (existing and recommended).

It is sometimes referred to as a risk log and records risks throughout the life cycle of a particular project. It will also include information such as costs and responsibilities for any risk containment strategies.

The benefits of a risk register are that it allows all risks and control strategies to be documented and distributed to stakeholders in a standardised format.

It enhances communication levels to key stakeholders and gives them the opportunity to provide valuable feedback.

The following is a risk register template:

Risk ID	Risk description	Risk likelihood	Risk consequence	Risk grade	Risk mitigation

The following is a risk response plan template:

Details	Risk ID:
Change in risk	
Review date	
Risk mitigation	
Person(s) responsible for implementation	
Cost of risk mitigation	
Risk mitigation schedule	
Work Breakdown Structure (WBS)	

Risk management plan

A risk management plan is a document used to foresee risks and their impacts, as well as identify the standard response to them.

Risk management plan may include:

- Audit trail for risk management over project life cycle
- Format of information
- Organisation systems and risk methods
- Manual and computerised systems
- Risk register
- Summary outcome of risk processes.

The risk management plan will contain a risk assessment matrix, such as below:

RISK MATRIX		Likelihood				
		Rare	Unlikely	Possible	Likely	Almost certain
Consequence	Catastrophic	M	H	H	E	E
	Major	M	M	H	H	E
	Moderate	L	M	M	H	H
	Minor	L	L	M	M	H
	Negligible	L	L	L	M	M

Risk analysis outcomes

You can also have a form of documentation for your risk analysis and the expected outcomes:

Quantitative risk analysis:	Qualitative risk analysis:
Expected outcomes:	

Risk audit

This is where you assess and revise your project management methods in order to ensure you are using the most efficient and effective processes.

A risk audit may identify the following information:

- Whether you were using the best assessment methods for likelihood, impact and consequence
- How to improve your risk management plan
- The effectiveness of risk responses
- Whether you have reduced risk likelihood
- The effectiveness of your risk management templates.

Risk audits should be performed throughout the life cycle of the project, as your risk management procedures will need to adapt to changing circumstances.

After a risk analysis, you should review your analysis.

These analysis outcomes should:

- Be objective and performed by a third party
- Be related to the project objectives and the critical path schedule
- Identify other potential risks
- Benefit future risk analysis and projects
- Be grounded in expertise specific to the project.



3. Establish risk treatments and controls

3.1 – Identify and document existing *risk controls*

Risk controls

Risk controls are those actions that organisations take to reduce the likelihood or impact of risk. The actions are defined from your risk assessment findings.

Risk controls may include:

- Accepted industry practice and codes of conduct
- Existing risk planning actions
- Legislation or regulation over processes
- Modifications to plans and processes
- Organisational risk policies and procedures
- Quality systems
- Work methods.

It can mean adapting existing policies and standards or implementing new ones altogether. The idea is that you can either eliminate or reduce project risk.

Examples of risk controls:

- WHS training for employees
- Use of personal protective equipment (PPE)
- Budget control



- Quality testing of components
- Regular servicing of technology/equipment
- Market research into target customer needs.

The above list is not exhaustive and the exact risks will vary between projects and the types of risks these present.

The risk assessor will need to decide on the risk control measures that are appropriate for the project.

These controls should be documented with the following information:

- Risk ID
- Control strategy (terminate/transfer/treat/tolerate)
- Required resources
- Timeframe for risk control
- Person(s) responsible
- Completion status.

Within risk control, there are various strategies you can employ:

- Corrective action – to realign expected performance with the project plan
- Workaround – for previously unidentified risks
- Update risk response plan – identifying and eliminating/controlling the source of the risk
- Project change requests – changing the risk responses in the risk management plan
- Risk database – identify data collection , maintenance and analysis methods
- Risk checklists – to identify new and most relevant risks.

3.2 – Consider and determine *risk treatment options* using agreed consultative methods

Risk treatment options

Risk treatment options are used when you have identified risks that cannot be eliminated – so, you will need to take actions to minimise them or otherwise.

Risk treatment options may include:

- Accept risk
- Mitigate risk
- Transfer or share risk



- Avoid risk.

Accept risk

This is where you accept that a risk is inevitable and simply proceed regardless – you will allow for the (usually negligible) disruption it will cause.

Mitigate risk

This is when you seek to stop a risk before it becomes a reality i.e. preventative action, or bring the risk to an acceptable level where its impact is not detrimental to the project objectives.

Transfer or share risk

This is where you pass on completely or share the risk with a third party, so it is their responsibility. This does not mean the risk will not occur, it just means a third party will handle its control measures. You will need to outline the expectations of transferred risks in your risk response plan.

Avoid risk

This is when you decide to take actions that will avoid the situation where the risk occurs. Therefore the likelihood of the risk is hugely decreased.

Consultative methods

Risk treatment options need to be agreed via consultation with appropriate personnel.

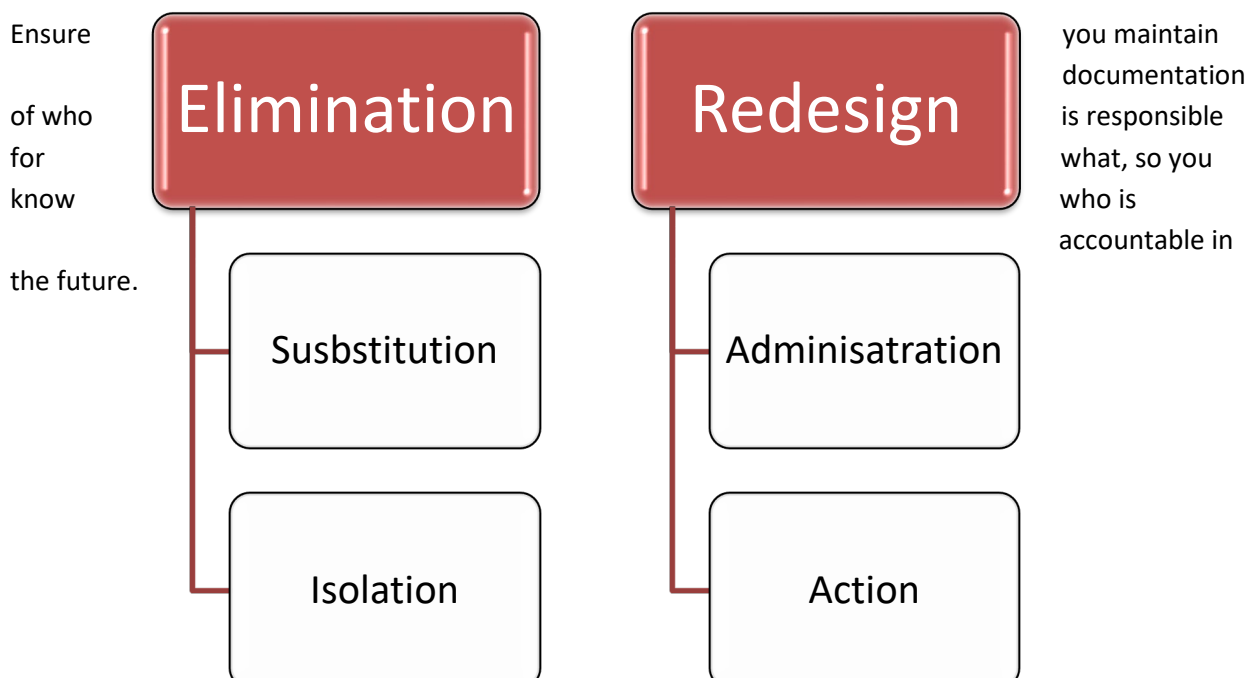
Consultation may involve meetings with WHS experts to go through the required standards and applicable legislation for your industry.

You will want to include risk management representatives in the discussions, as well as your workplace health and safety officer.

For each of the identified risks, decide which treatment option is best suited to it; try and see if you can mitigate or transfer multiple risks under one action, to increase efficiency.

Hierarchy of controls

This is where you assign responsibility for implementation and review of a control measure. You will need to ensure that the responsibilities match the experience and skills of the personnel assigned.



3.3 – Record and implement agreed risk treatments

Recording risk treatments

Once you have identified your chosen risk treatments, it is important to record them appropriately.

This will mean using documentation templates and filing all risks according to categorisation protocols.

When you are recording risk treatments, cross-reference them with the risk prioritisation/ranking you have already done.

Make sure you record the context of the risk treatment and all relevant details, as identified in the risk treatment template (to follow).

Implementing risk treatments

The risk treatments will need to be implemented within the scheduled timeframe.

All of the information in the risk treatment template will need to be fulfilled and documentation filled in as you go along.

Ensure the relevant personnel are carrying out their responsibilities and activate any contingencies, if necessary.



Risk treatment template

Risk ID:	
Risk description:	Predicted impact:
Response recommendation:	
Proposed actions:	
Resources required:	Person(s) responsible:
Response schedule:	
Reporting/monitoring requirements:	
Project manager Name Date: Signature	
Authorisation Name Date: Signature	

3.4 – Update risk plans and allocate risk responsibilities to project team members

Updating risk plans

Risk plans need to be updated, as there will be external changes that you cannot control. Rather than ignore them, you will need to accommodate them and adapt your plan appropriately.

Changes can occur in any of the following areas:

- Standards
- Regulations
- Laws
- Best practice guidelines
- Management practices
- Project environments
- Risk identification
- Risk classification.



The frequency with which you update risk plans is subjective and will depend on your project's life cycle, as well as the evolution of risk within your industry.

A good guidelines, however, is to perform risk plan updates at the same time as risk reports, so you can keep them in sync.

Review techniques

When reviewing risks, you should review the risk register on a regular basis (weekly/monthly).

Ensure that you check that the documented processes are being implemented as planned, or if they need updating.

Hold risk planning meetings to communication the updates to risk plans and take the opportunity to identify areas of problems or risk.

Making sure everyone is informed of changes will ensure nothing is missed and there are no complacency issues.

It is also an opportunity to drop old risks from the risk plan that are no applicable.

Risk plan update checklist

Concern/issue	Acceptable? (Yes/No)	Possible action
Frequency of risk plan updates		
Short duration of specific phases of the project		
High level of external consultants		
Some phases require no updating		
Review of costs not done prior to planning review		
Cost of maintaining planning reviews		
Risks updates difficult to measure		

4. Monitor and control project risks

4.1 – Establish regular *risk review processes* to maintain currency of risk plans

Risk review processes

Risk review cycles will need to occur regularly in order to maintain the currency of risk plans.

Risk review processes may include:

- Ad hoc due to emergency events
- Gateway or stage transition reviews
- Ongoing through team member assigned responsibility
- Regular risk discussions at project meetings
- Scheduled formal reviews.

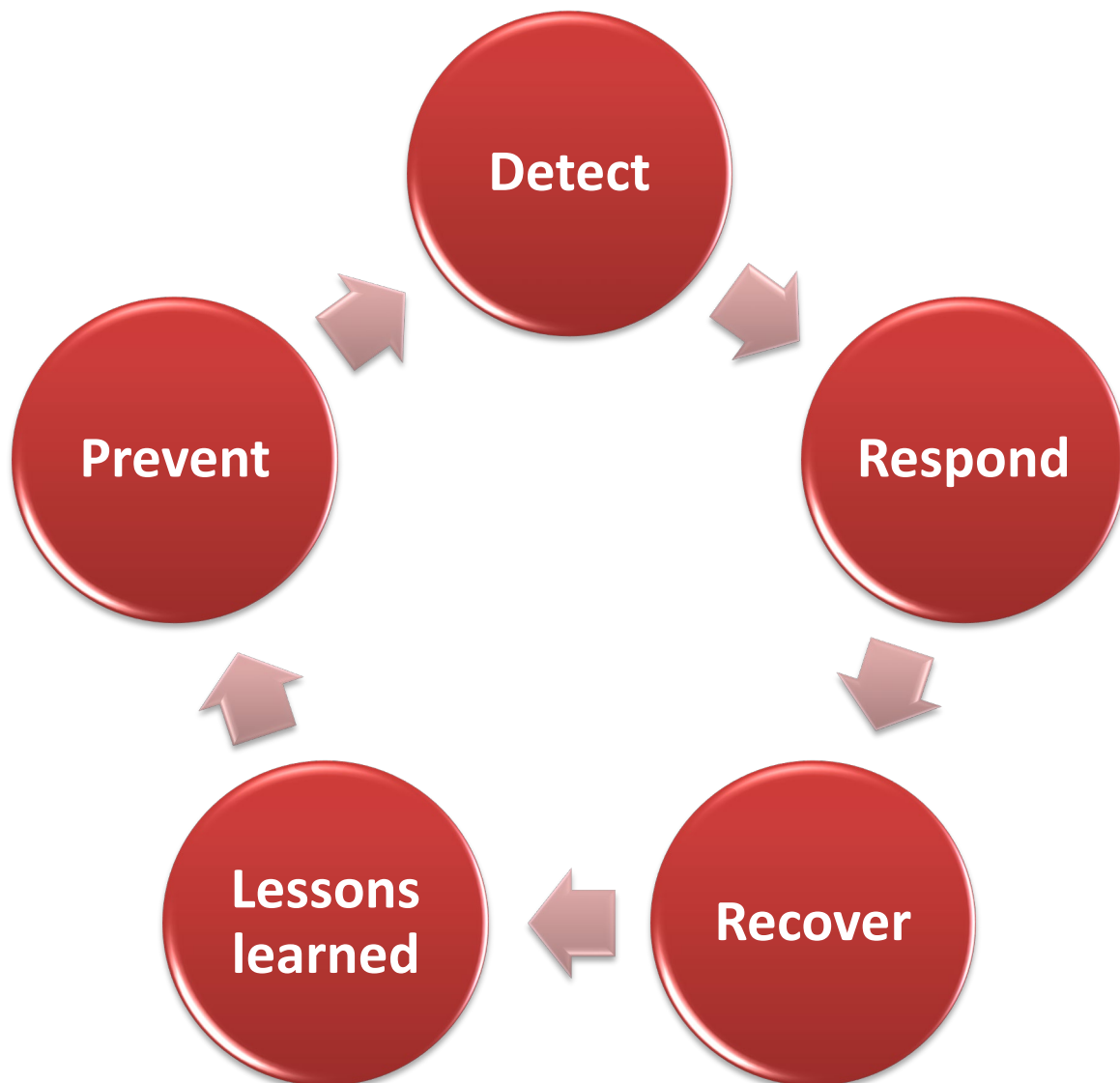
The process can either be informal or a formal, structured process – which of these it is will depend on the size and complexity of your project.

A structured approach would include review systems, checklists and measurement tests to ensure the currency of risk plans.

Further risk review processes may include:

- Risk control audits
- Risk insurance review
- Contract reviews (internal and external)
- Review of internal processes
- Incident debriefs
- Test/trial events.

Monitoring and controlling project risks
This should be a cyclical process and should continuously occur.



Risk ID:

Method of detection:

Risk response:

Recovery status:

Lessons learned:

Preventative measures:

Frequency of risk review process

The frequency of your risk review processes will vary depending on the nature and volatility of the risk – it may be the case that some risks need to be monitored daily to minimise threat levels and risk exposure.

Frequency of risk response can include:

- Daily
- Weekly
- Monthly
- Quarterly
- Six-monthly
- Yearly.



Ensure that you don't conduct too many risk assessments – try and focus in on the most vital areas for achievement of project outcomes.

Try and share the responsibility for risk review processes among involved personnel.

A good efficiency tip is to use organisational templates and tools to streamline and standardise the process. These could be ranking scales, control definitions and risk categories, for example.

4.2 – Regularly monitor risk environment to identify changed circumstances impacting on project risks

Monitoring risk environment

The risk environment is basically all the internal and external factors that can affect the probability and impact of risks. As such, these factors may shift, changing the likelihood and impact rating with them (and even presenting new risks).

As such, monitoring should be constantly occurring and not just a one off occasion.

The types of things you should look out for include:

- Whether risks responses have been implemented
- Effectiveness of risk responses
- The need new/altered risk responses
- Validity of risk plans
- Sources of risks
- Risk exposure level

- Adherence to policies and procedures
- Changes in policies, procedures, standards and legislation.

Changes to the external environment include:

- Legislation changes
- Industry practices shift
- Incidents in other related projects
- Industry practices
- Government agenda shifts.



When these changes occur, you must match your risk plan to meet these circumstances; your procedures must be compliant with the above.

Also, companies themselves will change as they grow and adapt to the changing markets. You will also need to adapt to these by altering your risk plans

Changes to the internal environment include:

- Management changes
- Reviews of program contracts
- Redundancies
- Restructuring
- New company policies and procedures
- Risk review changes
- Changes in infrastructure.



Awareness of risks

Awareness of risks and the risk environment can be increased by involving other relevant personnel in the process.

You need to minimise the risk of oversight and this means getting quality input from risk assessment personnel.

Enterprise risk management (ERM) is the concept that individual risks will have a ripple effect, so they affect the whole organisation in some form.

Make sure you take into account government and state laws that can affect your project outcomes and processes

4.3 – Determine *risk responses* to changed environment

Determine risk responses

Once you know what a risk is, you will need a method of responding to them. This needs to be standardised and documented, to ensure that they are dealt in a uniform manner.

Risk responses may be made:

- In consultation with project team members, section heads, project managers and stakeholders
- Independently or with endorsement of higher project authority if necessary
- Regularly throughout the project life cycle
- Taking into account internal organisational change and external environmental change.

Risk response control

This is used to respond to risks that present themselves over the course of the project by using corrective actions.

Emergency response

This happens when unexpected or critical risks occur – the main objective is to maintain business objectives, resources and processes, using the controls outlined in the risk management plan.

Recovery response

This helps a project recover from unplanned risks that manifest and temporarily derail a project, getting it back on course to achieving its objectives.

Continuity response

This consists of all the actions you carry out on an ongoing basis to control risks. You will need to match the best techniques for dealing with individual risks.

Risk response development

You will need to consult with stakeholders when coming up with responses to changes in the following environments:

- Economic
- Legal
- Environmental
- Social
- Political.



Dealing with environmental changes

Internal environment

Examples of this include:

- Management changes
- Company restructuring
- Redundancies
- Risk reviews
- New company policies and procedures
- Company infrastructure rebuilding.



External environment

Examples of this include:

- Public opinions
- Legislation alterations
- Governmental policy/agenda shift
- Actions/incidents in other projects
- Industry reports.

For these environmental changes, you will need to make a note of:

- What the changes are
- The reasons for change
- The processes for change.

You will also need to monitor the effects of the changes as they are introduced and implemented. This will ensure that you can determine what the changes are and which areas of your project they directly affect.

4.4 – Implement agreed risk responses and modify plans to maintain currency of risk treatments and controls

Implement agreed risk responses

Now you have decided on the types of risk responses you are going to use, you will need to implement them as planned, if the risks present themselves as predicted.

This will involve making sure the correct procedures are carried out, by the right personnel and according to schedule.

Modify plans to maintain currency of risk treatments and controls

Of course, one risk response plan will not remain relevant forever. Therefore, you will need to update your risk response plans in order to keep them current with risk treatments and controls in your industry.

Risk treatment options

These have already been dealt with in 3.2 of this unit.

To review:

Risk treatment options are used when you have identified risks that cannot be eliminated – so, you will need to take actions to minimise them or otherwise.

Risk treatment options may include:

- Accept risk
- Mitigate risk
- Transfer or share risk
- Avoid risk.



Accept risk

This is where you accept that a risk is inevitable and simply proceed regardless – you will allow for the (usually negligible) disruption it will cause.

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Avoid risk

This is when you decide to take actions that will avoid the situation where the risk occurs. Therefore the likelihood of the risk is hugely decreased.

Risk control options

Risk control options may include:

Creating new standard work methods

This will allow you to build your work methods around the basis of avoiding, mitigating, transferring or accepting risks (whichever is the chosen action). So, rather than tweaking the existing work methods, you redesign them from the ground up.

Modifying existing work processes

This involves taking your existing work processes and building risk controls in to them, tweaking them as necessary.

Risk policies and procedures

You will create policies and procedures that are distributed to all staff – these policies and procedures are then implemented into all practices and applicable to everything you do.

Creating quality control systems

These will ensure that there is a minimum standard set for your projects; by having risk policy measures part of quality control systems, you will always have risks accounted for.

Planning against predicted risks

This means setting out a contingency to deal with risks, should they become a reality. You will have needed to rank the risks in terms of likelihood and consequence and plan according to this.

Following industry codes of conduct and standard industry practice

These are externally set regulations and guidelines that are minimum requirements for all companies that operate in your industry.

5. Assess risk management outcomes

5.1 – Review project outcomes to determine effectiveness of risk management processes and procedures

Review project outcomes

Once your project has completed its cycle, you will need to review it in order to evaluate the effectiveness of it.

Think in terms of the following:

- What were your project objectives?
- Did you achieve them?

- Did you meet deadlines?
- Did risk controls work as planned?
- Were there any unexpected risks?
- How did you deal with these?
- How did risks affect your project outcomes?

Project reviews should be completed as soon as possible after project completion, as this ensures everything is fresh in the minds of those involved.

Determine effectiveness of risk management processes and procedures

When you try to determine the effectiveness of risk management processes and procedures, you will need to look at:

- What processes you employed
- The impact they had
- The outcome of the processes.

Processes

- How effective were the processes that you used?
- Did they achieve the project outcomes and objectives?
- Did any processes improve the outcomes?
- Did any processes negatively impact outcomes?

Impacts

Were there any changes in:

- Skill levels?
- Company/industry polices?
- Company/industry practices?
- Team morale?

Outcomes

- Were the main outcomes achieved?
- How did risk management processes/procedures affect these outcomes?
- What were the stumbling blocks you came across?
- What changes were made to risks management processes over the course of the project?



- What are the short-term outcomes of the project
- What are the long-term outcomes of the project?

You will need to determine the data you will need to collect to answer these questions, as well as the resources to collect and analyse said data.

5.2 – Identify and document risk management issues and recommended improvements for application to future projects

Identify and document risk management issues

Risk management issues need to be identified in your review processes and documented accordingly.

Was the required documentation created and maintained? Think about risk logs, risk registers, incident reports.

You will need to follow your organisation's documentation procedures and file the records accordingly. This will allow you to recommend improvements for future projects.

In order to identify risk management issues, you will need to complete a risk and environment analysis for the project.

You will need to account for the internal and external environmental factors that affect risks in your analysis also.

The risk analysis should identify those risks which may have the most impact of the project outcomes, in terms of operational and financial impacts.

In order to carry out an effective analysis, you will need to have a good understanding of the project, its stakeholders and the risk management activities available.

The issues you might identify include:

- Interruptions to project schedule
- The process of implementing the risk plan
- Risk triggers
- Negative impacts on outcomes
- Schedule delays.



When you document these issues, you will need to keep in mind who is going to receive the documentation and its intended purpose.

Ensure you only document the required information i.e. documentation by exception, and keep it objective.

Consider whether the documentation will be electronic or paper-based – what are the limitations of the format you use?

Include the contact details of the intended recipient of the data and ensure to include your own as a reference point for future queries.

Recommended improvements and application to future projects

Ensure that any recommended improvements are identified and issued to key stakeholders, for use in future projects.

For this reason, any issues will need to be clearly identified and explained; give them appropriate context, so the environment in which they occurred is obvious.

Improvements that reduce risk could include:

- Increased training
- Modernised equipment
- More focused planning
- Risk audits
- Education on risk awareness
- Updated standards, policies and procedures.

References

These suggested references are for further reading and do not necessarily represent the contents of this Learner Guide.

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