



UNIVERSITY OF
CAMBRIDGE

Risk Management

Joint School Computing Service

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1. Amendment History

Date	Version	Description	Author

2. Related Documents

The following documents provide further background to the project.

Document Name	Reference	Version	Date Issued	Author

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1 Introduction

1.1 Purpose of Document

The purpose of this document is to define the aims, objectives and approach of Project Risk Management strategy as well as to identify the project's attitude towards risk taking.

1.2 Aims and Objectives

The purpose of implementing a risk management strategy is to identify, assess and control uncertainty and as a result of that, improve the ability of the project to succeed.

The strategy is to describe how risk management will be embedded in the project management activities.

The strategy will describe:

- Risk management procedure (identify, assess, plan, implement, communicate)
- Tools and Techniques
- Records to be kept/ Risk reporting
- Timing of risk management activities
- Roles and responsibilities for the procedure
- Risk rating
- Proximity
- Risk Categories
- Risk response categories
- Risk Tolerance
- Risk Budget

2 Project Scope

2.1 In Scope

The following is within scope:

- Project Management Risk Strategy

2.2 Out of Scope

The following is currently out of scope:

- Clinical School Computing Service Risk Management Strategy
- School of Clinical Medicine Risk Management Strategy
- School of Biological Sciences Risk Management Strategy



3 Introduction

Project risks are related to the project itself and to its objectives/ products. It is important to incorporate and understand where risk factors may come from.

The Project Risk Management strategy document provides a process for managing risks in a systematic and consistent way. To obtain maximum benefit, risk management activities are initiated at the earliest possible phase of a project and continued throughout the project lifecycle.

The aim of having this Risk Management process in place is to enable us to think about the risk, what mitigation to put in place and to provide a platform to use your expertise and judgment (which is often instinct based) in a clear, consistent and systematic way, as a quantitative guideline.

This document is aimed for the Project Board, Steering Group and Project Team.



4 Risk Management procedure

It is recommended that the risk management procedure comprises the following 5 steps:

1. Identify (context and risks)
2. Assess (i.e. estimate and evaluate)
3. Plan
4. Implement
5. Communicate

Please note that these steps will need to be repetitive throughout the project's cycle as it is important to assess the risks identified when new/ additional information becomes available.

4.1 Risk Appetite

A key decision that needs to be recorded as part of the Project Risk Management Strategy is the project's attitude towards risk taking, which in turn dictates the amount of risk considered to be acceptable.

This information will need to be captured in the form of risk tolerances, which represent the levels of exposure that, when exceeded, will trigger a process to bring the situation to the attention of the wider School of Clinical Medicine and School of Biological Sciences.

4.2 Identify

Primary step is to obtain information about the project in order to understand the specific objectives that are at risk. The Initiation phase of the project will be used to understand the scope of the project. The next step is to recognize the project's risks, but also to look at possible opportunities that may affect the objectives.

Effective risk management is fundamentally dependent upon the identification of risks. Hence, it should be a systematic process. For the majority of cases, risk identification relies on prediction and interpretation of anticipated problem areas.

There are a number of options that can be used to identify risks, such as:

1. **Review Lessons:** A very effective way to reduce uncertainty is to review similar previous projects to see what risks and opportunities affected them
2. **Risk checklists:** It would be a helpful aid to have an in-house list of risks and opportunities that have been identified previously. This will ensure that risks identified on previous projects are not overlooked
3. **Risk prompt lists:** This would be a list with an overview of all areas (Networking, Systems Support, etc.) which will stimulate thinking about sources of risks
4. **Brainstorming:** This will enable group thinking, which can be more productive than individual thinking. In these sessions you could:
 - a. Include all key areas, project manager, team manager, etc. to discuss all aspects of the project
 - b. Ensure you ask questions to trigger responses, such as Why, Who, Where, When, What, How
5. **Critical Path Analysis:** Critical Path Analysis is a method that formally identifies tasks which must be completed on time for the whole project to be completed on time. It also identifies which tasks can be delayed for a while if resource needs to be reallocated to catch up on missed tasks.

Other methods may include:

- Expert opinion
- Questionnaires



All practicable sources should be used when identifying risks and opportunities. The requirement specifications, PID, work breakdown/ project plan and statements of work are some of the starting points.

Risk identification should consider the impact of risks upon all project objectives. These objectives usually include cost, time and quality. They may also include other objectives that relate to statutory and regulatory compliance, security, dependability, liability, IT service excellence, etc.

Also consider that assumptions made at project start-up may be a source of risk and their validity should be tested periodically.

Risks may be inherited from previous project phases. In the transitional stages of projects, it is sensible to determine those risks that are carried into the next phase of the project.

4.2.1. How to describe a risk

An important aspect of identifying risks is being able to provide a clear and unambiguous clarification/ description of each one and is to be documented in the Project Risk Log.

A guideline would be that if you had a difficulty in quantifying the impact of the risk, it may mean that it needs a more specified description of the risk or opportunity.

4.3 Assess

This section is to assess the risks and opportunities to the project in terms of their probability and impact. The proximity will also be of interest to estimate how quickly the risk is likely to happen if no action were taken.

Again, the assessment / analysis of risk as described is to be used as a quantitative guideline to enable you to think about and assess the risk in a consistent way.

4.3.1. Estimate

The identified risks will be assessed on:

- Probability of Occurrence
- Impact of Occurrence

The Probability of Occurrence is described as the likelihood of the risk/ opportunity identified would happen without any controls in place.

The impact of Occurrence is described as the potential damage that the risk identified could cause without any mitigation or controls in place. All impacts, such as reputational damage, should be considered.

The rate is as follows:

- 1. Rare is < 10%
- 2. Unlikely is 11% - 30%
- 3. Possible is 31% - 50%
- 4. Likely is 51% - 70%
- 5. Almost Certain is > 71%



It is important that the following is clarified by doing a Risk Assessment:

- The probability of the risks and opportunities in terms of how likely they are to occur
- The impact of each risk and opportunity in terms of the project objectives
- The proximity of these risks and opportunities with regard to when they might occur
- How the impact of the risks and opportunities may change over the life of the project

Ensure that you monitor the assessment of the risk throughout the project's lifecycle.

4.3.2. Risk Classification

The following classifications/ areas impacted will be used:

- Projects
- Resources
- Training
- Compliance
- Processes
- BAU
- Facilities
- IT Services / CSCS
- Infrastructure
- Security
- Financial
- Client

4.3.3. Risk Type

This will indicate the type of risk based on level/ type of impact should the risk event occur. The types are:

- Operational/ BAU
- Financial
- Compliance
- Reputation

Please note that a risk could belong to more than one type.

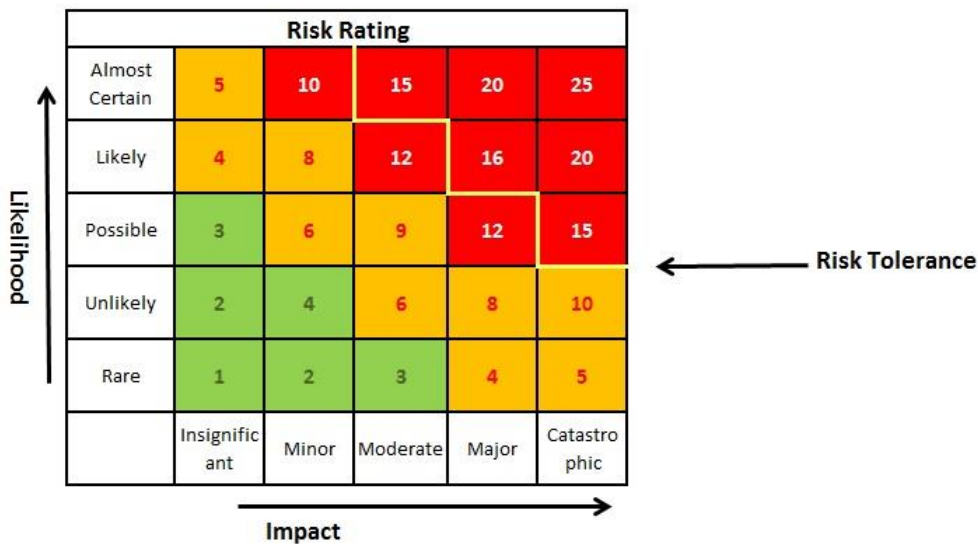
4.3.4. Evaluate

The goal of this section is to assess the effect of all the identified risks and opportunities resulting in the Impact of Occurrence. This will enable an assessment to be made of the overall severity of the risks and will help to determine the level of risk and Impact of Occurrence.

Risks can be evaluated by 'Risk Rating' out of the 'Probability Impact Grid'. This grid contains ranking values that may be used to rank threats and opportunities qualitatively. The probability scales are measured of probability derived from percentages and the impact scales are selected to reflect the impact on project deliverables/ objectives.



The values within the grid cells are the combination of a particular probability and impact and are determined by multiplying the probability by the impact.



The above risk rating is a quantitative guideline to ensure all identified risks are being assessed in the same consistent and systematic way, however will always be based on instinct, knowledge and experience.

4.3.5. Risk Tolerance

When the Risk Rating comes out to be 15 or above and when deemed appropriate by the JSCS Steering Group, this will trigger a process to bring the situation to the attention of the wider project, to include the School of Clinical Medicine and School of Biological Sciences.

Any risk exceeding the Risk Tolerance and confirmed to appropriate by the JSCS Steering Group, will be directed to the Project Board. The Steering Group, Risk Owner and Project Manager will have been through the process of identifying the risk, assessing and planning any risk mitigation action (preventative or detective) and provide the Project Board with a recommendation of planned mitigation activities, especially in the situation the risk mitigation actions are not able to reduce the Risk Rating.

The Project Board will review the recommendation and give direction, make decisions and / or authorise the recommendation of planned mitigation activities.

4.4 Plan

Specific management responses or mitigating controls to the risks identified need to be prepared, ideally to remove or reduce the risks and to maximize the opportunities.

It is important to pay attention to this section to ensure as far as possible that the project is not taken by surprise if a risk is occurring.



Also important to keep in mind is when you implement the mitigating controls; it could have impact on other risks or lead to a residual risk. It is essential that these are identified, assessed and controlled in the same way as the inherent risk.

The mitigating control, or combination of actions, should be selected by considering the cost of the response, in conjunction with the potential benefits when implementing the control. Risks are interlinked and have dependencies both to and from other risks, so there may be compromises between the different response options that should be considered.

A risk response does not necessarily remove the entire risk, leaving residual risk. This residual risk should be considered to see if it is tolerable.

It is advisable to review lessons from previous similar projects when planning risk responses as this may help in identifying the range of responses available and in evaluating how effective they are likely to be.

The type of mitigating controls could be preventative or detective.

Preventative controls discourage the risk event from occurring.

Detective controls show when a risk has occurred so appropriate actions may be taken.

It should also be checked what the impact of implementing the responses would have on:

- Project plan, outstanding actions
- Business case / PID

4.5 Implement

This is to ensure that the planned risk responses are actually actioned, their effectiveness monitored and corrective action taken where responses do not match expectations.

An important part is to ensure that there are clear roles & responsibilities allocated to support the project manager in the management of project risks. This will be handled later in this document.

The main roles are:

- **Risk Owner:** responsible for the management, monitoring and control of all aspects of a particular risk assigned to them, including the implementation of the selected responses to address the risks or to maximize the opportunities.
- **Risk Actionee:** carrying out a risk response action or actions to respond to a particular risk or set of risks. They support and take direction from the risk owner
 - **Combined:** these two roles will be combined into one role named **Risk Owner**

With regards ensuring the planned risk responses are actioned, the Risk Log will track the 'Testing Activity' to enable to answer the question 'How do we know the mitigation control is working?'

For each mitigating control, the testing process needs to be described for ensuring controls are working and the overall effectiveness of the control in preventing or detecting a risk. This includes details such as who conducts testing, frequency of tests and the results of the testing.



Then, based on the testing results, the overall effectiveness can be rated, ensuring that potential contingency actions or revisions can be planned.

In the situation the potential risk events occurs, the Risk Log will also allow for a description of the plans/ procedures that are in place to handle the situation.

4.6 Communicate

Communication is a step that has to be carried out continually and should ensure that information related to the risks/ opportunities identified is communicated both within the project and externally to stakeholders.

Risks should be communicated through:

- Internal project meetings
- Steering group meeting
- project logs/ risk logs
- Governance
- Lessons learned reports

A suggestion would be to set-up template project agenda's for the project meetings to ensure all aspects of the project are covered:

- Overall RAG status
- General update
- Progress on actions
- Risks
 - o Reviewing the risk log
 - o Reviewing the status of the risks and associated risk response activities
 - o Identifying and agreeing any changes to the risk information and re-analyse the changes
- Assessment of the effectiveness of the risk management process
- Issues
- Budget

A number of aspects of communication should be recognised and addressed if risk management is to be effective:

- A project's exposure to risk is never static: effective communication is key to the identification of new risks or changes in existing risks. This depends on the maintenance of a good communications strategy.
- Effective risk management is dependent on participation and, in turn, participation is dependent on effective communication