PROJECT RISK MANAGEMENT

8.4 Management of Risk

8.4.1 Purpose
Risk is a major factor to be considered during the management of a project. Project management must control and contain risk if a project is to stand a chance of being successful.

This guidance is provided to help understanding and to give advice on how to identify, evaluate and manage project risk.

8.4.2 What is risk?

Derby City Council defines risk as:

"The chance of something happening that will have an impact on objectives"

Projects can range from the implementation of a new software package on a computer system through to the building and commissioning of a substantial new sports stadium.

Projects will be undertaken by organisations for a number of reasons. When alterations to strategy are being planned, then a project or series of projects (programme of work) will often be necessary in order to implement the revised strategy. Also, improvements to operational processes will require changes that will be implemented by undertaking a project.

Project risk management should be seen as an extension of conventional project planning. The requirement for all projects is that they are delivered within the appropriate cost, time and quality parameters. Quality is the relationship between specification and performance. Projects must be delivered:
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- on time
- within budget
- to specification / performance.

It is in relation to project risk management that the definition of a risk as related to uncertainty is most relevant. There will be uncertainties within the project related to events, conditions and circumstances. The requirements of project risk management are to identify the events that could give rise to uncertainty and respond to them appropriately.

As well as managing the risks and uncertainties in a project, the project manager should also be looking for opportunities. Opportunities may arise when certain

developments within the project are more favourable than expected. Project risk management should take account of these positive developments and ensure that the structure for managing risks in projects is sufficiently flexible for the opportunities to be recognised and benefits obtained.

8.4.3 Risk Analysis

Risk analysis is essential for effective management of risk. It comprises of three steps:

STEP ONE; RISK IDENTIFICATION

Identifying risks is the first step in building a risk profile. Firstly we have to consider what it is we are trying to achieve. Once we know this, we can then give thought to what stakeholders' expectations may be and what may impact on our ability to achieve our objectives.

Broadly, project risks fall into two distinct categories – Business risk and Project risk:

Business risk
This covers the threats associated with a project not delivering products which can achieve the expected benefits. It is the responsibility of the project board to manage business risks. It includes such areas as:

- The validity and viability of the Business Case
- Whether the project continues to support the corporate business strategy,
    - ➢ strategic decision
    - ➢ commercial issues
    - ➢ market change
- The consequences to the council of failure or limited success
- The stability of the business areas involved
- Programme requirements
- Legislative changes
- Political factors including public opinion
- Environmental issues
- Impact on the customer of the results of the project
- The risk of the end result meeting the stated requirements, but not fulfilling expectations.

<u>Project risk</u>

These are the threats to the management of the project, and hence to the achievement of the projects' end results within cost and time. These risks may be managed on a day to day basis by the Project Board, Project Manager or Team Manager. Risks will be many and varied, but will include the following broad categories:

- Supplier issues, covering those risks caused by being dependent on a third party, including:
  - ➢ Failure of the third party
  - ➢ Failure by them to deliver satisfactorily
  - ➢ Contractual issues
  - ➢ Mismatch between the nature of the task and the procurement process

- Organisational factors such as:
  - ➢ Additional staff responsibilities alongside project work
  - ➢ The project culture, or lack of it
  - ➢ Personnel and training issues
  - ➢ Skill shortage
  - ➢ Potential security implications
  - ➢ Culture clashes between customer and supplier

- Specialist issues; there will be a wide variety of issues here because each project has its own particular specialist elements which bring with them their own risk elements. However, there are some general issues which will apply to many project types, such as:
  - ➢ How well requirements can be specified
  - ➢ To what extent the requirements can be met using currently available and understood facilities and approaches.
  - ➢ The extent to which a project involves innovative, difficult or complex processes and or equipment
  - ➢ The challenges and problems regarding quality testing
  - ➢ The risks that the specified requirements will not be achievable in full or that not all requirements will be correctly specified.

It must be stressed that the above lists are given purely to illustrate the areas of risk which need to be considered as part of project management. Each project must be considered in its own right.

Once identified, risks are not kept separate (for example business, project, stage plan, etc). They are all entered in the one Risk Log which is always reviewed in its entirety.

STEP TWO; RISK ESTIMATION

This step is to determine how important each risk is, based on an assessment of its likelihood and impact to the project and council.

Once you have identified all the possible risks to your service area, it is necessary for you to analyse and evaluate the risks so that you may distinguish between minor acceptable risks and major risks.

This process will also include determining the likelihood of the risk happening and the impact or consequence the risk will have on your service area should the risk occur.

The assessment should avoid confusing an impartial assessment of the risk with judgement about the acceptability of the risk. It is not the absolute value of an assessed risk which is important; rather it is whether or not the risk is regarded as tolerable, or how far the exposure is away from tolerability, which is important.

To assess the risks adequately we should give each risk a score or risk rating using the 5x5 Risk Matrix. Each impact is given a numerical score equivalent to a scale of insignificant / minor / moderate/ major/ catastrophic and likelihood on a scale of rare / unlikely / possible / likely / almost certain.

This process is recommended because it provides a structured way to identify, prioritise and manage the impact of the key risks/opportunities to the achievement of your objectives.

It is worth bearing in mind at this stage, that Risk Management is the overall umbrella framework, which encompasses all risks i.e. when looking at your objective you would look at all types and categories of risk that could impact on the achievement of that objective.

Risk Rating/Scoring
We need to be able to compare our risks so that we can concentrate our efforts on addressing those that are most important. To do this we use the standard approach of giving each risk a score, calculated by multiplying the likelihood score by the potential impact score.

The first assessment should be undertaken on the 'Inherent Risk' i.e. the risk before any controls have been put into place. This is to ensure that all significant risks are highlighted and assurance provided that these risks are being managed. If you only assess the risk after controls have been put in place (Residual Risk) then you are assuming that the controls will always be there.
The second step is to assess your risks after your existing controls have been evaluated. This will give you a residual risk score and overall risk rating level.

Suggested guide for risk scoring

The below is a guide to the appropriate score to allocate to the risk. It is not definitive and is intended only as a guide, as consideration should also be given to the nature of the objective as well as the risk that threatens it.

Significance/Impact of Risk

5   Catastrophic
- An incident so severe that it results in a service or project being unavailable permanently
- Strategic objectives set are not met
- Statutory duties are not achieved
- Death of an Employee or Member of the Public
- Financial loss over £1,000,000
- Adverse national media attention – National televised news report
- Litigation almost certain and difficult to defend
- Breaches of Law punishable by imprisonment

4   Major
- Loss of a service for six months or more
- Objectives of the Department/Directorate are not met
- Non-statutory duties are not achieved
- Permanent injury to an employee or member of the public
- Financial loss over £100,000
- Adverse national media attention – National newspaper report
- Litigation to be expected
- Breaches of law punishable by fine only

3   Moderate
- Loss of a service for one to six months
- Objectives of the Division are not met
- Injury to an employee or member of the public requiring medical treatment
- Financial loss over £10,000
- Adverse regional media attention – Televised or news paper report
- High potential for a complaint litigation possible
- Breaches of regulations/standards

2   Minor
- Loss of a service for one to four weeks
- Objectives of the Section are not met
- Injury to an employee or member of the public requiring onsite first aid
- Financial loss over £1,000
- Adverse local media attention – Local news paper report
- Breaches of local procedures/standards
- Unlikely to cause complaint/litigation

1   Insignificant
- Loss of a service for up to one day
- Objectives of the individual are not met
- No injuries
- Financial loss between £0 – 999
- No media attention
- No breaches in Council working practices
- No complaints/litigation

Probability/Likelihood of Risk

5	Almost Certain	Will occur several times during a projects life-cycle
4	Likely	Could occur several times during a projects life-cycle
3	Possible	Could occur once during a projects life-cycle
2	Unlikely	Could occur once in every 10 to 20 years
1	Rarely	Could occur once in every 20 years or more

By multiplying the impact rating by the likelihood rating this produces a risk rating score. The risks can then be plotted onto a simple Risk Matrix as shown below and the level of risk determined.

The rating of risk is useful for both the prioritisation of risk and therefore controls and ensures that risks are brought to the attention of the most appropriate staff, i.e. the most significant risks are notified at the most senior management level. It would be normal that only the risks in the top right hand corner are significant and action needs to be taken to reduce exposure. The higher they are in this top corner, the higher their priority should be.

The Risk Matrix

	I	II	III	IV	V
5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
2	2	4	6	8	10
1	1	2	3	4	5

LIKELIHOOD

IMPACT

	Likelihood of Risk			Impact of Risk
5	–	Almost Certain	V -	Catastrophic
4	–	Likely	IV -	Major
3	–	Possible	III -	Moderate
2	–	Unlikely	II -	Minor
1	–	Rarely	I -	Insignificant

STEP THREE; RISK EVALUATION

This step is to determine whether the level of each risk is acceptable or not, and if not, what actions can be taken to make it more acceptable.

The possible actions break into broadly 5 types:

- Prevention,

Countermeasures are put in place which either stop the threat or problem from occurring, or prevent it from having any impact on the objective or the Council

- Reduction

Actions are put in place to either reduce the likelihood of the risk developing, or limit any negative impact on the project to manageable levels

- Transference

This is a specialist form of risk reduction where the financial impact of a risk is passed to a third party via, for example an insurance policy or penalty clause

- Contingency

Actions are planned and organised to come into force as and when a risk occurs

- Acceptance

The Project Board decides to go ahead and accept the possibility that the risk might occur (believing that either the risk will not occur or the countermeasures are too expensive).

Any given risk could have appropriate actions in any or all of the above categories. Alternatively, there may be no cost-effective actions available to deal with a risk, in which case the risk must be accepted, or the justification for the project revisited – is the project too risky?

Risk analysis is a process which will need to be conducted continuously throughout the project as information becomes available and as circumstances change.

The results of the risk analysis activities are documented in the risk log. If the project is part of a Programme, the project should be examined for any impact on the Programme (and vice versa). Where any cross-impact is found the risk should be added to the other log.

8.4.4 Risk Management

Once the risks have been identified and evaluated, attention needs to focus on managing them.

Risk Management consists of 4 activities:

- Planning

This, for the countermeasure actions itemised during the risk evaluation activities, consists of:

> - Identifying the quantity and type of resources required to carry out the actions
> - Developing a detailed plan of action to be included in a Stage Plan
> - Confirming the desirability of carrying out the actions identified during risk evaluation in the light of any additional information gained
> - Obtaining management approval along with all the other aspects of the plans being produced.

- Resourcing

This will identify and assign the resources to be used for the work to carry out the risk mitigation actions. The resources required for the prevention, reduction and transference actions will have to be funded from the project budget, since they are actions which the project will be committed to carry out; decisions have to be made on how contingent actions will be funded.

- Monitoring

This consists of:

> - Checking that execution of the planned actions is having the desired effect on the risk identified
> - Watching for the early warning signs that a risk is developing
> - Modelling trends, predicting potential risks
> - Checking that the overall management of risk is being applied effectively
> - Reporting on risk status, especially on risks with extra-project impact.

- Controlling

This is taking action to ensure that the events of the plan really happen.

The risk management phase just like the risk analysis phase needs to be conducted continuously throughout the project as information becomes available and as circumstances change.

The Project Manager has overall responsibility for managing this process, but the whole Project Team has responsibility for contributing to it, as described below. The review of the Risk Log should be a regular agenda item at Project Team Meetings or if the meetings are weekly, every other week is usually frequent enough for the Risk Log review.

8.4.5 Risk Log

The main information entered in the Risk Log…

- Risk number – this needs to be unique for each project. It will be the first four characters of the project code followed by 'nnnn' where this is an incrementing number.
- Describe the risk – When describing a risk it is helpful to view risks as events. In order for a risk to materialise then an event must occur. As well as describing the risk this field is also used to describe the consequences of the risk. i.e if a risk event were to manifest what would be the outcomes of that event.

- Select a risk category for the risk from the list provided below.

• Political	• Customer/Citizen
• Economic	• Managerial/Professional
• Social	• Financial
• Technological	• Legal
• Legislative/ Regulatory	• Partnership/Contractual
• Environmental	• Physical
• Competitive	

- Identify the proximity – this is time when the risk is likely to occur. Select an option from the list.
- Evaluate their likelihood and impact, In other words, the effect on the project or business. Score this as 1 to 5 where 1 is the lowest and 5 is the highest. Guidance on scoring can be found on page XX under the 'risk estimation heading'
- Agree with the SRO at what level risks will be tolerated without any further actions being taken, where the probability of occurrence, and the impact on the project or the business is too low. For example less than or equal to 12 – to warrant risk management expenditure. For those above the risk tolerance level, agree actions to help prevent the risk or have contingencies if the risk should occur. The actions are as follows…

• **Prevention** - Take action to stop the threat or remove its impact on the project	ACHIEVED AT A COST
• **Reduction** - Take action to reduce the likelihood of the risk developing or limit its impact to an acceptable level	ACHIEVED AT A COST
• **Transference** – Transfer the impact of the risk to a third party such as an insurer	ACHIEVED AT A COST
• **Contingency** – Plan the action to be taken if the risk occurs	Usually only a cost if the risk occurs
• **Acceptance** – Accept the possibility that	No Cost

	the risk may occur (may be a reasonable approach if the chance of the risk occurring is low and other responses would be expensive to implement).	

- Identify an owner for each risk – this is the person closest to keep an eye on the risk. It may not be appropriate for the Project Manager to manage all the risks. Agree monitoring and reporting mechanisms for the risk

- Workshops involving representatives from those affected within the organisation is an effective way of identifying risks. A useful input would be an issue or risk log from a similar project in the organisation. Additionally the following list of prompts will assist in facilitating the workshop.

External Business	*Are there likely to be any major local government or political changes that may affect the project?* *Are there likely to be any budget changes that may affect the project?* *Are there likely to be any significant developments in technology or other process improvements that may affect the project, for example computer system initiatives?*
Internal Business	*Are there likely to be any major internal changes/reorganisations during the life of the project?* *Are there likely to be any major changes in personnel and/or internal procedures during the life of the project?* *Are there any dependencies on other programmes or projects?* *Will the project retain senior management backing?*
Project Management	*Are time constraints fixed?* *Are plans and estimates based on reliable data?* *Are there likely to be any changes to the management environment?* *Can the requirements be clearly defined at the start of the project?* *Are there other projects competing for the same resources?*
Project Staff	*Do the users representatives have good, relevant knowledge of the processes and systems?* *Will staff have sufficient time allocated to project work?* *Is staff turnover expected to be high?*
Suppliers	*Are suppliers large, well established companies?* *Have the suppliers been used before?* *Do the suppliers have extensive experience in this particular product?*

Technical	*Is the technology to be used well established or new?* *Is the product commercially available and off-the-shelf?* *Does the product need further development to be suitable?* *Are the technical staff experienced in the technology to be used?*
Other	*Does the project affect many or remote sites?* *Will the project have a major impact on users work and methods?* *Will staff or public see the project as contentious?*

8.4.6 Risk Log Template

PROJECT RISK REGISTER
PROJECT _____
PROJECT MANAGER or person that keeps the register _____
DATE _____

Risk No	Proximity	Description	Date Identified	Risk Owner	Consequence	Cost	Time	Likelihood	Impact	Rating	Controls	Control Owner	Likelihood after Controls	Impact after Controls	Rating	Status	Date of Last Update	Date Closed	By Whom
								Enter a letter from 1 to 5	Enter a value of 1 to 5		Describe the action taken		Enter a letter from 1 to 5	Enter a value of 1 to 5		Select one from the list	Date	Enter Date Risk Closed	

8.4.7   Responsibilities

SRO responsibilities include checking that the risks are being monitored effectively.

Project Board responsibilities include:

- reviewing and approving actions to be taken to control risks
- identifying additional risks, particularly from a business perspective
- informing the Project Manager of external risks that may effect the project
- making decisions on level of risks and deciding whether they are acceptable or not.

The Project Manager's responsibilities include:

- updating the Risk Log
- making sure that the risks are considered at Project Team meetings
- making sure that the Risk Log is formally reviewed at key points during the project, for example during an **End Stage Review**
- monitoring the progress of actions taken to control risks
- reporting the status of risks, usually by including the latest version of the Risk Log in the Monthly Progress Report to the Project Board.

Risk Owners responsibilities include:

- monitoring the risk/s to which they have been assigned and report progress to the Project Manager
- working with the Project Manager to plan any relevant actions
- making sure these actions are implemented and are having the desired effect.