

Get Real about Improvement

Isabel Evans for ANZTB – September 2012.

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Slide 1 – title slide




Afternoon workshop: Get real about improvement: three big focus areas

Isabel Evans

Title slide

Graphic: decorative

Slide 2 Why this workshop



Why this workshop?

- We all are under pressure from our organizations
 - to reduce costs
 - to deliver more quickly
 - to respond to organizational and customer change
- All of these mean we have to...
 - respond to risk
- Workshop to help us together
 - Identify typical problems and practical solutions
- The output of the workshop will be a document for ANZTB participants to use freely.

Why this workshop?

We all are under pressure from our organizations

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- to deliver more quickly
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All of these mean we have to...

respond to risk

Workshop to help us together

Identify typical problems and practical solutions

The output of the workshop will be a document for ANZTB participants to use freely.

Slide 3 How the workshop will run

How the workshop will run

- Participative:
 - work in small groups identifying potential problem areas
 - link those with improvement ideas
 - share thoughts on how to overcome resistance to change
- At the end of the workshop:
 - we'll have a range of improvement ideas to take home
 - we'll have focused on our stakeholders and customers
- ANZTB representative will collect the output
- ANZTB will then collate and publish the best from the three workshops (CC, W, A).

How the workshop will run

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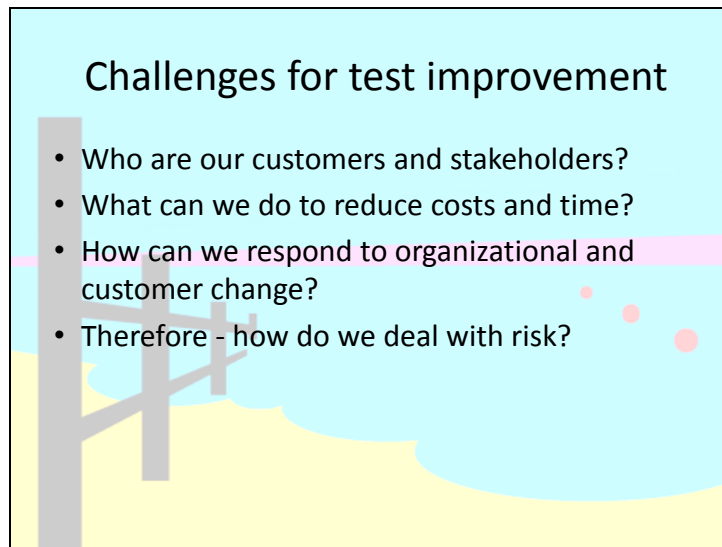
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Slide 4 Challenges for test improvement



Challenges for test improvement

- Who are our customers and stakeholders?
- What can we do to reduce costs and time?
- How can we respond to organizational and customer change?

Therefore - how do we deal with risk?

Slide 5 Who is affected by or cares about improvement?



Who is on the team (colleagues)?

- Testers
- Developers
- Who else?

Who is a direct customer or stakeholder?

- Internal customer
- Managers and the Board.

Who is an indirect customer or stakeholder?

- Public
- Government
- Another organisation.


Slide 6 Workshop – Who?

**1330/15 mins Workshop:
Improvement - WHO CARES? and WHY?**

- Who are we improving for?
- What do they want from us?
- Are there conflicts?

- **List the people/organisations who are driving change and improvement**
- **Why they are interested :**
 - **Do they want testing to be cheaper? Faster?**
 - More interesting?
 - Something else?

- **Don't forget yourself – what do you want?**



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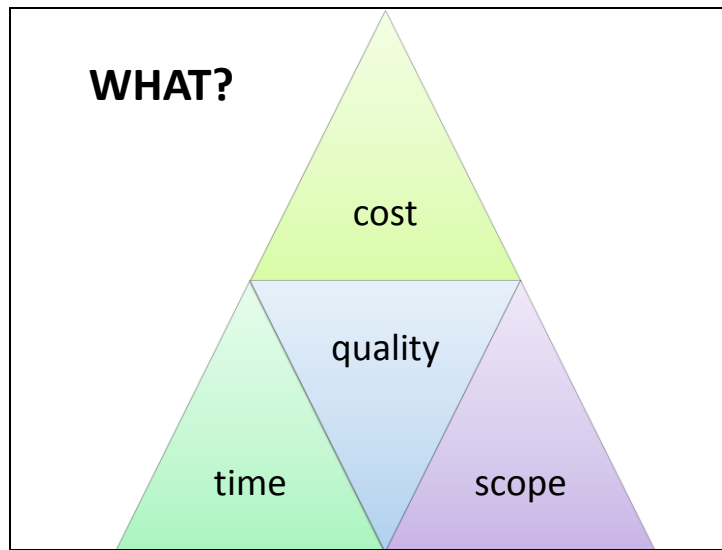
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More interesting?

Something else?

Don't forget yourself – what do you want?

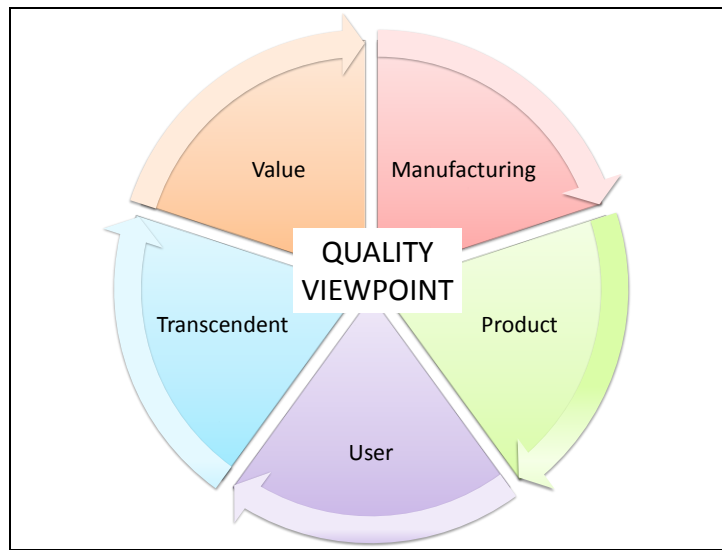
Slide 7 What can be improved?



What could be improved?

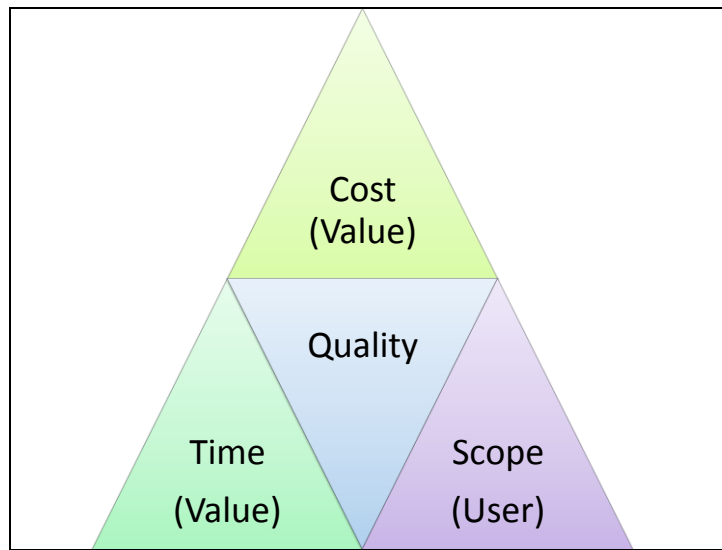
Graphic: triangle with cost, time and scope in the corners and quality in the middle

Slide 8 Quality viewpoints (1)



Graphic: quality viewpoints (manufacturing, product, user, transcendent, value)

Slide 9 Quality viewpoints (2)



Triangle with quality viewpoints superimposed – cost/value, time/value, scope/user in the corners and all quality viewpoints in the centre


Slide 10 Workshop – what can be improved?

1400/30 mins Workshop: Improvement
WHAT can improve? WHAT conflicts?

- Can we save cost and time without compromising quality?
- Will reducing costs and time increase quality for some stakeholders?
- What quality levels will our customers pay for?
- Can we streamline what we do?

– **List all the ways you could save time or money on a project and its outcome (e.g. Stop, Check, Do more lists)**

- **What are their advantages and disadvantages?**
- **Long or short term benefit?**
- **Are any of these improvements you could suggest in your organisation?**
- **How do they affect quality and scope?**
- **Are they people, process, environment or other changes?**

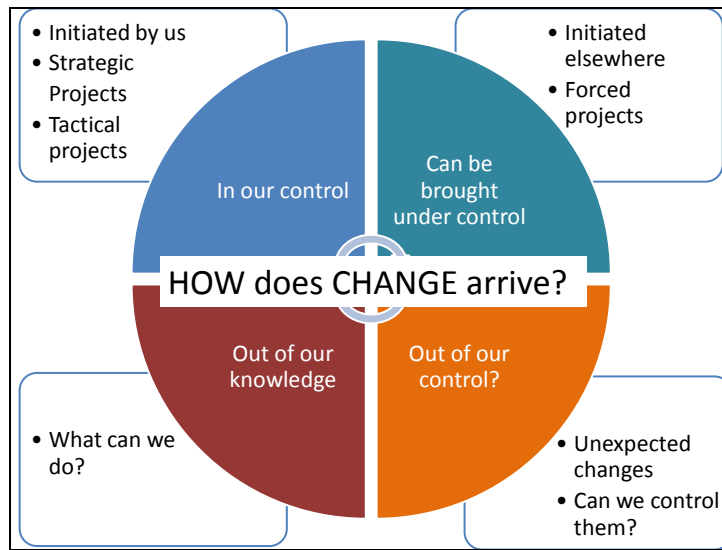


Improvement WHAT can improve? WHAT conflicts?

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Slide 11 How does change arrive?



Responding to change - what types of change?

In our control

- Initiated by us
- Strategic
- Projects
- Tactical projects

Can be brought under control

- Initiated elsewhere
- Forced projects

Out of our control

- Unexpected changes
- Can we control them?


Out of our knowledge

- What can we do?

Slide 12 Workshop How do we respond to change?

**1530/30 mins Workshop:
HOW do we respond to change?**

- Are we responding correctly to organisational change?
- Can we change our testing teams better to support change?
- **List the main challenges you are experiencing in your organization**
 - What changes are happening around us and how does this affect the perception of testing?
 - What technology changes challenge us?
- **List ideas to overcome challenges**
 - How do we rise to the challenges?
 - Do we have the skill sets and knowledge to cope?
 - What allies do we have?
 - Have you met this challenge – what did you do?
- **Note how IMPROVEMENT is a CHANGE!**



HOW do we respond to change?

Are we responding correctly to organisational change?

Can we change our testing teams better to support change?

List the main challenges you are experiencing in your organization

—What changes are happening around us and how does this affect the perception of testing?

—What technology changes challenge us?

List ideas to overcome challenges

—How do we rise to the challenges?

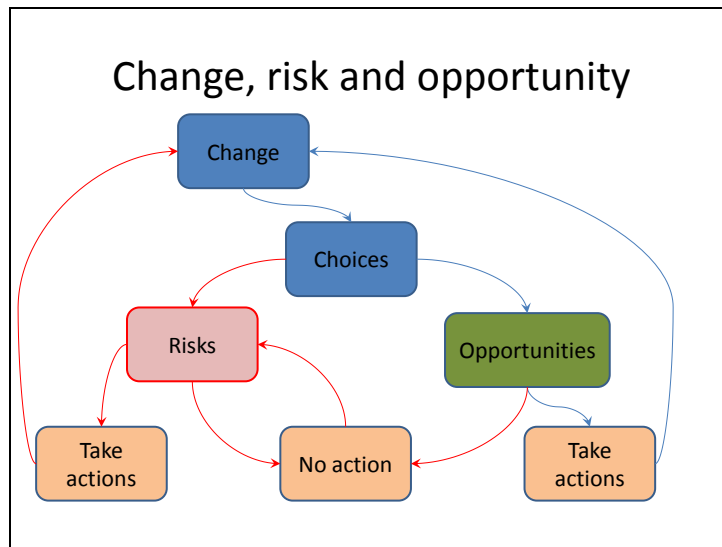
—Do we have the skill sets and knowledge to cope?

—What allies do we have?

—Have you met this challenge – what did you do?

Note how IMPROVEMENT is a CHANGE!

Slide 13 Risk and opportunity



Change, risk and opportunity

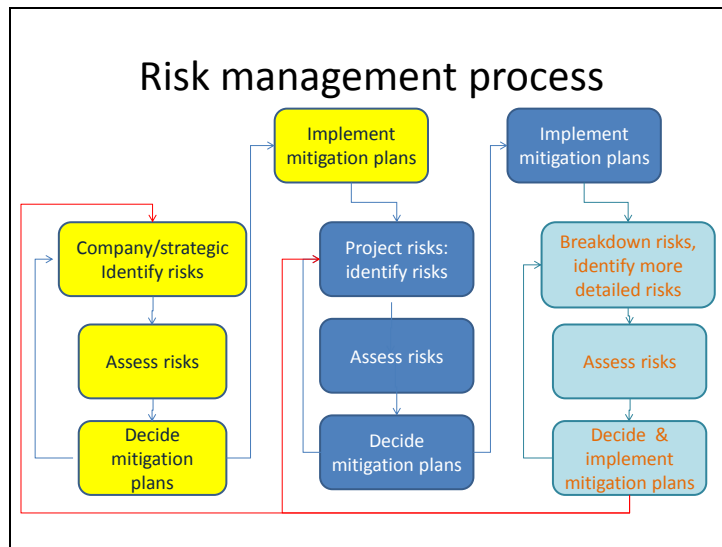
Graphic:

Change leads to choices, leads to risks and opportunities.

Taking action on the risks or opportunities leads to change and further choices.

Not taking action leads to risks.

Slide 14 Risk Management Process

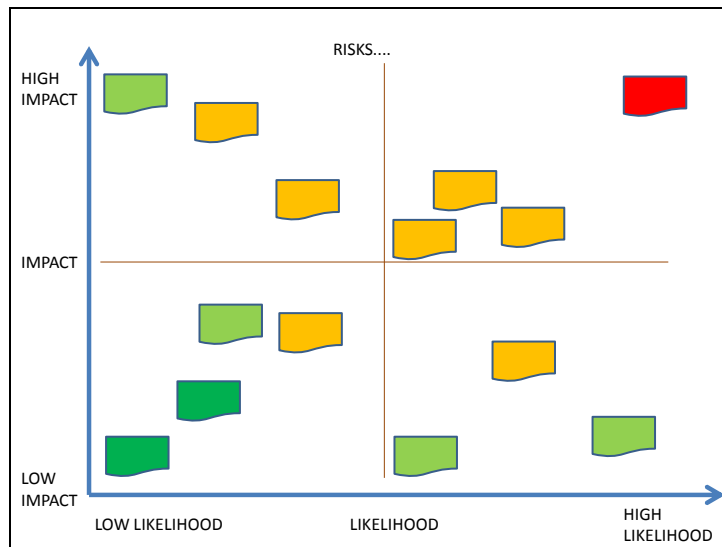


Risk management process is:

- Identify
- Assess
- Decide mitigation plans
- Repeat and feedback

Happens at organisational, project and project phases.
Feedback potentially to all three levels.

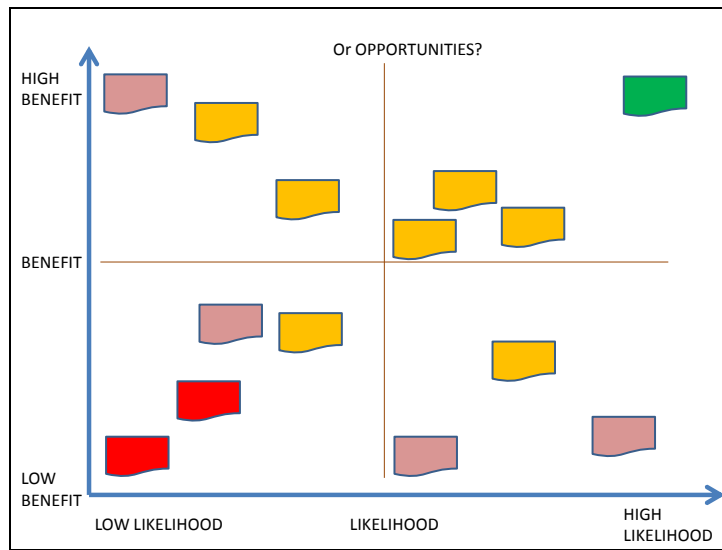
Slide 15 Risk matrix



Risks can be plotted on a matrix from low impact to high impact and low likelihood to high likelihood.

- Low impact, low likelihood – maybe do not need testing
- Low impact, high likelihood - test
- High impact, low likelihood - test
- High impact, high likelihood – do we want to do the project?

Slide 16 Opportunity matrix



But what if we look at opportunities?

- Low impact, low likelihood – maybe do not bother with this?
- Low impact, high likelihood - consider
- High impact, low likelihood - consider
- High impact, high likelihood – an opportunity to seize!


What if the highest risk is the highest opportunity? Testers may be risk averse and the business risk takers.

Slide 17 Risks – what, why, how, when, who?

1615/30 mins Workshop:
Risks: what, why, how, when, who?

- What risks and opportunities do you face?
 - Costs
 - Time scales
 - Change
 - Quality
 - Scope

- **What risks? Who cares and why?**
- **What opportunities? Who cares and why?**
- **Opportunities/Risks from changing**
- **Opportunities/Risks from staying the same**
 - How do you identify them?
 - How do you assess and prioritise them?
 - What action do you take?
 - When do you do this?



Risks: what, why, how, when, who?

What risks and opportunities do you face? Risks to some of the following:

- Costs

- Time scales

- Change

- Quality

- Scope

What risks? Who cares and why?

What opportunities? Who cares and why?

Opportunities/Risks from changing

Opportunities/Risks from staying the same

- How do you identify them?

- How do you assess and prioritise them?

- What action do you take?

- When do you do this?

Slide 18 Consolidate

...And Finally
- consolidate

- Review what we have done
- Identify 3 – 5 ideas you will take home now
 - Customers and stakeholders
 - Reducing costs and time
 - Responding to organizational and customer change
 - Dealing with risk and opportunity
- In the next week
- In the next month
- In the next 90 days
 - Consolidated output to follow from ANZTB
 - Thank you for taking part!

...And Finally consolidate and review what we have done

Identify 3 – 5 ideas you will take home now

—Customers and stakeholders

—Reducing costs and time

—Responding to organizational and customer change

—Dealing with risk and opportunity

What will you do

—In the next week

—In the next month

—In the next 90 days

Consolidated output to follow from ANZTB

Thank you for taking part!

Slide 19 Thanks for taking part



I hope you enjoyed the workshop!

Next steps

ANZTB consolidate all the output and publish to all the workshop attendees

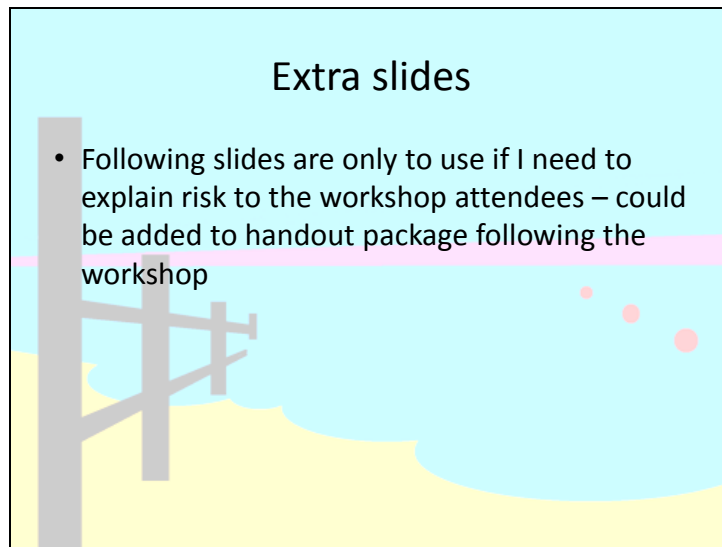
Thanks for your input and good luck!

Slide 20 End slide



End slide with illustration

Slide 21 Extras



Following slides are only to use if I need to explain risk to the workshop attendees – could be added to handout package following the workshop.

Slide 22 What is risk?

What is risk?

- Something that has not yet happened
 - but might happen in the future
- If we take **action X**, there may be a **consequence Y**
- In order to decide what action to take, we assess
 - Likelihood of **Y**
 - Impact of **Y**
 - Frequency of **X**
- Opportunity
 - Something that is an advantage and could be worth taking a risk to achieve

What is risk?

Something that has not yet happened but might happen in the future.

Risks arise as a result of actions we choose to take or avoid.

Sometimes we take a risk because it is the only way to gain an opportunity.

Sometimes we avoid a risk because the threats are too great.

If we take **action X**, there may be a **consequence Y**.

In order to decide what action to take, we assess

Likelihood of **Y**

Impact of **Y**

Frequency of **X**.

Risk has not yet happened but might do in future. Assess and prioritise then decide how to deal with it:

- Accept
- Insure against
- Mitigation plans
- Investigate
- Prevent.

Issue or problem has happened:

- Accept
- Deal with / take responsibility for
- Share.

Worry:

- Generalised, unanalysed concern
- May be a risk or an issue.
- May be nothing.

Opportunity:

- Something that is an advantage and could be worth taking a risk to achieve.

Slide 23 How do we deal with risk?

How do we deal with risk?

- To embrace as well as mitigate risk
 - Risk – what is it for us and for our stakeholders?
 - How do we associated testing with risk reduction?
 - Risk and opportunity are two sides of the organizational coin so how can we help our stakeholders and customers avoid risks that are dangerous but take risks that are opportunities?
 - Cost, time, and change requirements all bring risk

- How do we deal with risk?
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- Cost, time, and change requirements all bring risk.

Slide 24 Risk and problem management

**Risk management versus
problem management**

- Risk management
 - Forward looking
 - Broad focus
 - Preventative
 - Can be difficult to do
- Problem/issue management
 - Backward looking
 - Narrow focus
 - Reactive
 - Easier to get people's attention

Risk management versus problem management

Risk management

- Forward looking
- Broad focus
- Preventative
- Can be difficult to do

Problem/issue management

- Backward looking
- Narrow focus
- Reactive
- Easier to get people's attention

Slide 25 Risk management process

Risk management process

- Identify the risks and log them
- Assess the probability and impact of each risk, and put them in order in the log
- Decide on the response to each risk (sometimes called risk treatment or risk mitigation plan)
- Implement the risk response/mitigation plan and update the log
- Repeat

Risk management process

Identify the risks and log them

Assess the probability and impact of each risk, and put them in order in the log

Decide on the response to each risk (sometimes called risk treatment or risk mitigation plan)

Implement the risk response/mitigation plan and update the log

Repeat

Slide 26 Identify risks

Risk Management – identify risks

- **Risk workshops:** Brainstorming, Post-its, Consensus discussion, Mind maps
- **Risk checklists:** Quality in use attributes, Internal quality attributes, Lessons learned lists, Business checks (STEPS)
- **Stakeholder interviews:** Focused questions e.g. about quality attributes, Free format, Open and closed questions
- **Tool/analysis based:** Code review and static analysis, Reviews of specifications, Reading levels measurement, Fault trees
- **During other activities** e.g. estimating (risk log open to all to add risks)
- Steps at this stage
 - Create a Risk Log.
 - Identify risks.
 - Identify opportunities.
 - Analyse Root Causes.
- **Outcome of risk identification – a list of risks put in a risk log**
- **Examples:**

Risk Management – identify risks

Risk workshops: Brainstorming, Post-its, Consensus discussion, Mind maps

Risk checklists: Quality in use attributes, Internal quality attributes, Lessons learned lists, Business checks (STEPS)

Stakeholder interviews: Focused questions e.g. about quality attributes, Free format, Open and closed questions

Tool/analysis based: Code review and static analysis, Reviews of specifications, Reading levels measurement, Fault trees

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Steps at this stage

Create a Risk Log.

Identify risks.

Identify opportunities.

Analyse Root Causes.

Outcome of risk identification – a list of risks put in a risk log

Examples:

Steps at this stage

1. **Create a Risk Log.** Create a risk register for your project in a spreadsheet. Include fields for a unique reference number, date, risk category, description, probability, impact, owner, risk response, actions, and status.
2. **Identify Risks** – for example, brainstorm all current risks on your project with the project's key team members and stakeholders. Go through all the factors that are essential to completing the project and ask people what is worrying them or what

dangers they see. Identify risks related to requirements, scope, technology, resources, materials, budget, quality, stakeholders, suppliers, testing, rollout, business processes, legislation, and any other elements you can think of.

3. Identify Opportunities - When you identify risks, also factor in positive risks - or opportunities; i.e. events that in some ways could affect your project in a positive manner. What would the impact be, for instance, if the uptake of your product was bigger than expected, or if it was delivered ahead of schedule? What could you do to exploit this opportunity and plan for it?

4. Analyse Root Cause - Explore the root cause of each risk you have identified by asking why, why, why. Knowing the root cause will make it easier for you to mitigate the risk and to identify the most effective risk response.

Slide 27 Assess risks

Risk Management – Assess risks

- Risks are scored by multiplying their likelihood, impact (and frequency)
 - Likelihood (Technical, Business Complexity, Geography, Knowledge)
 - Impact (Money, Time, Customers & Reputation)
 - Frequency (How often does X happen that means the risk arises?)
- Methods for obtaining scores include:
 - **Expert view point** e.g. Customer representative scores the impact, Technical representative scores the likelihood
 - **Risk workshop** e.g. Red dots method, Consensus discussion, Tool/analysis based e.g. Metrics from trusted source/ industry/own experience e.g. Caper Jones tables, company support metrics
 - **During other activities** e.g. estimating (risk log open to all to add risks)
- Steps at this stage
 - **Determine Impact, frequency and probability**
- **Outcome of risk assessment – the list of risks has been scored and put in an ordered list in the risk log and/or on a matrix (see overleaf)**

Risk Management – Assess risks

Risks are scored by multiplying their likelihood, impact (and frequency)

Likelihood

Probability (0 = not a risk, 1 = issue)

Technical, Business Complexity, Geography, Levels of knowledge

H, M, L or 10, 5, 3, 1 or probability

Impact

Money, Time, Customers & Reputation

H, M, L or 10, 5, 3, 1 or money

Frequency

How often does X happen that means the risk arises?

Sometimes bunched in with impact

H, M, L or 10, 5, 3, 1 or quantity

Methods for obtaining scores include:

Expert view point e.g.

Customer representative scores the impact

Technical representative scores the likelihood

Risk workshop e.g.

Red dots method

Consensus discussion

Tool/analysis based e.g.

Metrics from trusted source e.g. for hardware the manufacturer's specification

Metrics from industry e.g. Caper Jones tables

Metrics from own experience e.g. support metrics

During other activities e.g. estimating (risk log open to all to add risks)

Steps at this stage

5. Determine Impact - Establish the impact of each risk on time, cost, quality, scope, business **benefits, and resourcing if it were to occur. Determine if the impact would be high, medium, or low. High impact could translate to: “would stop the project”, Medium impact: “would cause serious delays or rework”, Low impact: “would cause minor delays or rework”.**

6. Determine probability – Establish if each risk has a **high, medium, or low probability of occurring. High probability** could translate to: “almost certain to occur”, Medium probability: “likely to occur” and Low probability: “unlikely to occur”.

Outcome of risk assessment – the list of risks has been scored and put in an ordered list in the risk log and/or on a matrix (see overleaf)

Slide 28 Risk responses

Risk responses and mitigation methods

- Risks:
 - Avoid (see Reject Opportunity)
 - Accept (Document that no action is to be taken)
 - Take Mitigating Action
 - Reduce (likelihood and/or impact)
 - Fallback (reduce impact) / Transfer (reduce financial impact)
 - Share the risk (e.g. insurance)
- Opportunities
 - Exploit, Enhance, Share
 - Reject (see Avoid Risk)
- Example:

Risk responses and mitigation methods

Risks:

- Avoid (see Reject opportunity)
- Accept
Document that no action is to be taken
Low risks or risks that we cannot control or mitigate against in any way
Risks that we want to take (Captain Scott)
- Take Mitigating Action
Reduce (likelihood and/ or impact)
Fallback (reduce impact) or Transfer (reduce financial impact)
Share the risk (e.g. insurance)
Mitigation plans can include Risk-based menus with...
 - Action to prevent (e.g. Reviews, testing, standards and processes, skills)
 - Action to contain if it happens (e.g. additional support, not releasing on Friday, deputies)
 - Action to investigate further (e.g. Testing, Research)
- Protection
 - Apply standards
 - Insure/Share risks
 - Manage risks - Risk register
 - Re-visit risks.

Opportunities

- Exploit
- Enhance
- Share
- Reject (see Avoid risks).

Steps at this stage

7. Determine Risk Response – Focus your attention on the risks with the highest potential impact **and highest probability of occurring. Identify what you can do to lower the probability of each negative risk happening and to mitigate its impact in case it does occur. Where risks are positive, determine what can be done to increase their probability and impact.**

8. Assign Owner - Assign an owner to each risk. The owner should be the person who is best placed to deal with the risk and monitor it. Let the risk owners know that you have assigned them a risk, and get their buy-in. Liaise with them and agree the actions that need to be taken and by when.

9. Regularly Review Risks - Set aside time, at least once a week, to review your risk register and to monitor the progress of all logged items. Also **schedule** follow-up meetings with your team to identify new risks and to review previous actions and risk descriptions. Always pay the most attention to those risks that have the highest likelihood of occurring and the highest potential impact on the project.

10. Report on Risks - Ensure all risks with medium-to-high impact and probability are listed on your **status** report. Encourage a discussion of the top ten risks at the steering committee meetings so that executives get a chance to give input and direction.

Example:

Slide 29 Mitigation plans

Mitigation plans

- Risk-based menus with...
 - Action to prevent (e.g. Reviews, Testing, Standards, Processes, Skills)
 - Action to contain if it happens (e.g. additional support, not releasing on Friday, deputies)
 - Action to investigate further (e.g. Testing, Research)
- Protection
 - Apply standards
 - Insure/Share risks
 - Manage risks - Risk register and Re-visit risks
- Steps at this stage
 - **Determine Risk Response**
 - **Assign Owner and Regularly Review and Report on Risks.**
- Example:

Mitigation plans

Risk-based menus with...

Action to prevent (e.g. Reviews, Testing, Standards, Processes, Skills)

Action to contain if it happens (e.g. additional support, not releasing on Friday, deputies)

Action to investigate further (e.g. Testing, Research)

Protection

Apply standards

Insure/Share risks

Manage risks - Risk register and Re-visit risks

Steps at this stage

Determine Risk Response

Assign Owner and Regularly Review and Report on Risks.

Example: