THE UNIVERSITY OF MELBOURNE

SWEN90014: MASTERS SOFTWARE ENGINEERING PROJECT

Workshop: Risk Management

Avoiding risk is one aspect of software engineering. In this workshop, we will identify the largest risks in your project, and plan some ways to control them.

What is risk management?

> "Risk management is project management for adults" — Tom DeMarco and Timothy Lister.

Risk management is the acceptance that the world is not a perfect place, that bad things happen and they must be dealt with. Risk management is rejecting the 'head in the sand' mentality that we find so tempting to indulge in.

Why is rejecting this mentality so important? Because proper project management simply cannot be done with such a childish mindset. It is usually these childish ways that results in projects being late, over budget, and failing to meet stakeholder expectations.

Risk management is all about planning for the possibility that our undesirable outcomes may occur and analysing how to control these.

Identifying risks

There are many different ways to identify risk. Two that are useful on a project of the scale you are undertaking are:

1. *Risk Brainstorming*.

   This is where everyone in the team gets together and thinks about all the bad things that could possibly happen during the project. One to way to do this is have everyone envisage a nightmare situation — what would be the worst thing that could happen to this project?

2. *Examining previous projects*.

   Problems that occurred in other projects are likely to be risks for your project. Even though your project will obviously be different to other projects, there will still be a lot of common threads. Your supervisor and peers who have work experience can help here. Although they may not know your project as well as you, they would probably be happy to tell you at length about first hand experience with things going wrong on projects, and the lessons learned as a result. You can also use your own previous experience, including what has already happened on your project.

Controlling risks

There are four ways we can control a risk:

1. *Avoid it*: simply do not do the thing that brings the risk with it.
2. *Transfer it*: transfer the risk to a third party; e.g. contract out some risky functionality to an organisation that specialises in this area.
3. *Mitigate it*: reduce the probability of the risk occurring and/or the impact of the risk. In this subject, your most valuable resource is time, so risk mitigation is often simply setting aside enough time to deal with a few risks should they materialise.
4. *Accept it*: accept that it can occur but don't plan for it.

We can also use combinations of these. When you identify a risk, you need to decide how to deal with it. Will you avoid it? Will you mitigate it? Will you try and mitigate the costs?

Your tasks

1. Past-project examination

   Think about about problems that have affected you on team projects in the past (even non-SE projects).

2. Risk brainstorming [15 minutes]

   Each team (or both teams together) brainstorm some of the largest potential risks for their project, and write these on the whiteboard. What characteristics of your project make it particularly challenging?

3. Risk analysis [15 minutes]

   For each potential risk on the whiteboard, go through and do some analysis based on likelihood and impact. What does this analysis indicate? Which risks are the most significant for your project? What strategies will you use to control the risk?

Until next time...

- Use this list of risks as the basis for your risk log.
- Revisit and revise the risk log at every team meeting: a few minutes should be enough in most cases, however the appearance of new risks or a significant change in likelihood may require consideration and action.
- Start implementing the risk control strategies you have identified in this workshop.