SWINBURNE UNIVERSITY OF TECHNOLOGY

SWE20001
Managing Software Projects

Lecture 1c

Project Forces – Scope

Lecture Overview

- Project Forces and Concerns
  - Scope
  - Time
  - Cost
  - Quality

Before We Start……

- Assume you have to paint your bedroom
- It requires
  - ☐ removing all furniture from the room
  - ☐ cleaning & repairing holes in walls and ceiling
  - ☐ painting walls and ceiling
  - ☐ removing carpet
  - ☐ cleaning, staining and polishing the floor
  - ☐ checking existing power points, and adding two new points
  - ☐ putting the furniture back

SCOPE

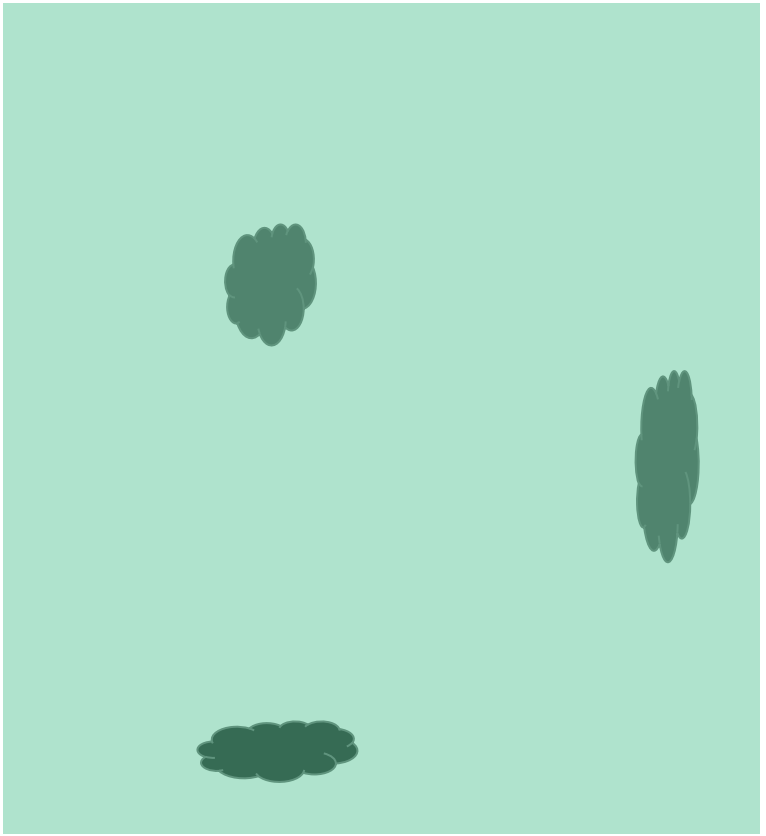
Before We Start……

- The job has to be done
  - ☐ within the next 2 weeks
  - ☐ within the budget of $1000
- How would you proceed? What are the issues?

TIME

COST

What do you expect afterwards?



- Which one do you prefer?

QUALITY

What if……

- you are doing it all yourself?
- you have a few mates capable of working with you?
- you do some calculations and discover it can't be done within $1,000? If $1,000 is really max, what would you do?
- it really MUST be done in 2 weeks, but after thinking it seems that it will take 3 weeks to do all the work?
- getting a professional in to help would let you finish in 2 weeks, but would take the cost over $1,000?

Roadmap

- **Project Forces and Concerns**
  - ☐ Scope
  - ☐ Time
  - ☐ Cost
  - ☐ Quality

Project Forces

- Think again about the bedroom renovation project:

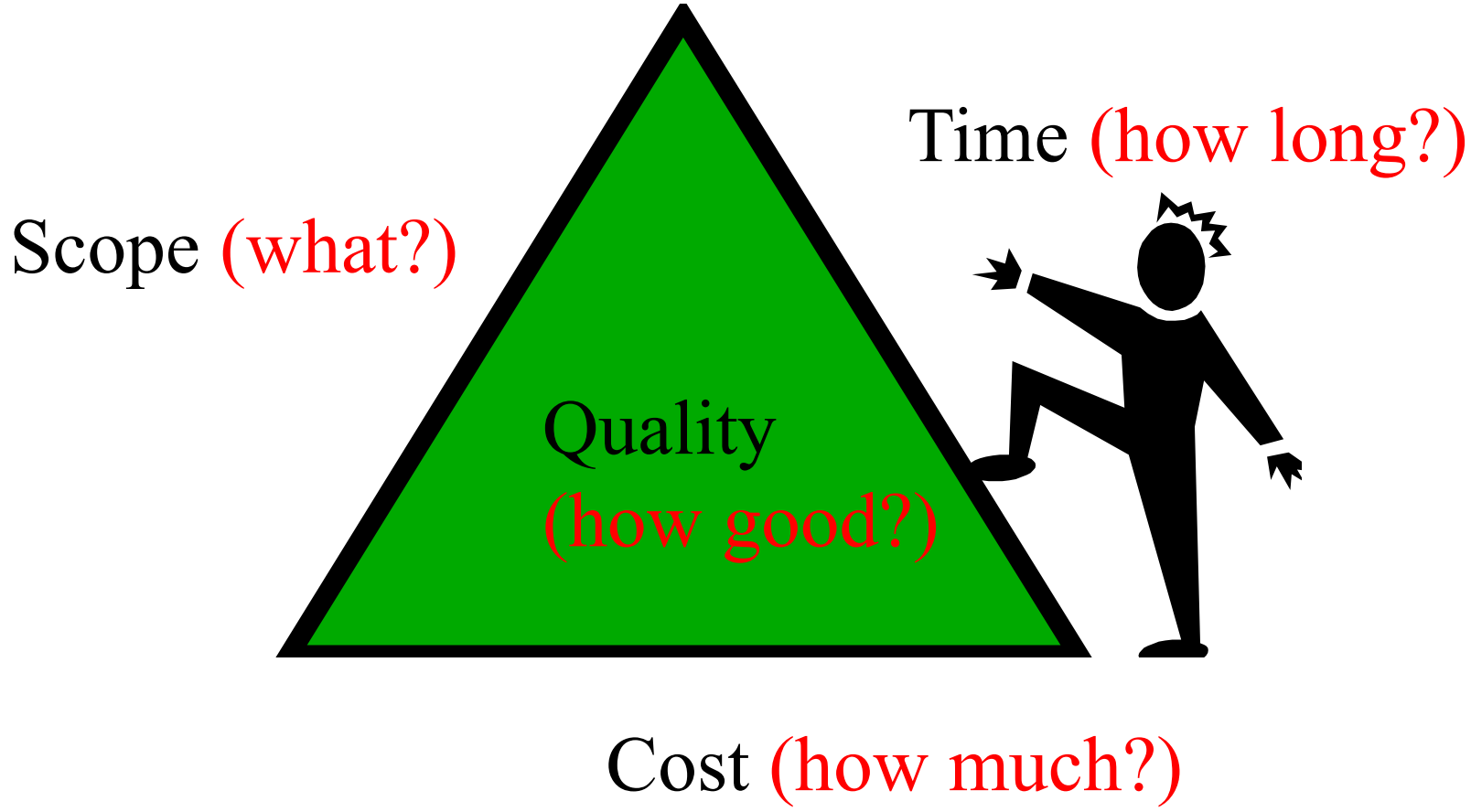
- A certain set of **requirements** are specified
- The **time** allowed for their completion is given
- The maximum **cost** is given
- If you are sensible, you will specify the **quality** of work that is required

Project Forces (cont)

Project Concerns =

Deliver the right stuff
to the desired quality
on time and
within budget

Project Forces (cont)



Project Forces (cont)

"The way the software development game is played is that stakeholders can pick the values of three of the four forces. The fourth value is a consequence of the choice of the other three values."

Kent Beck,

eXtreme Programming Explained, 2000.

Scope and Objectives

In order to start a project, you must set clear *scope* and *objectives*

- Scope: *primary functions* software is to accomplish, bounded in a quantitative manner. It also includes the range of things that the project is to consider.
- Objectives: *general goals* of the project, not how they will be achieved

Goals must be *S.M.A.R.T.*

- Constraints, performance, reliability must be explicitly stated
- Customer must set *priorities*

Scope: From wikipedia

- **Scope statements** may take many forms depending on the type of project being implemented and the nature of the organization
- The scope statement details the project deliverables and describes the major objectives
- The objectives should include measurable success criteria for the project

Scope Statements: From wikipedia

As a baseline, scope statements should contain:

- project name; project charter; project owner, sponsors, and stakeholders; problem statement; project goals and objectives; project requirements; project deliverables; project non-goals (what is out of scope); milestones; cost estimates; approved change requests; project assumptions and risks; project acceptance criteria

Example: Peer Review System – Context

You are given the task to develop an electronic system to facilitate the submission and subsequent analysis of peer-reviews for a project-based university unit with multiple teams.

The system must enforce authentication of all users, validate all peer review submissions based on predefined validation rules, and allow for a semi-automatic analysis of all peer reviews.

Each student has to submit an evaluation of every member in his/her team (including self). A rating from 1 to 5 is required on several aspects of teamwork, together with a paragraph of text that gives a holistic description of the individual's contribution.

Example: Peer Review System – Present Situation

- Students to fill out the peer review forms and submit it via email
- Convenor to collect and analyze the review
  - ☐ Manual process
  - ☐ Time consuming
  - ☐ Error prone
- Electronic submission and analysis can help convenor to solve these issues
- An example of Peer Review Form

Example: Peer Review System - Scope

Think about the scope and objectives of the peer review system

Recommended Reading

- Bob Hughes and Mike Cotterell, *Software Project Management* (5th Edition), McGraw-Hill, 2009, Chapter 1.
- Ian Sommerville, *Software Engineering* (8th Edition), Addison-Wesley, 2007, Chapter 5