

# SE 2011

## Introduction to Project Management (part 2)

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# Responsibility Matrix

Activity	Responsible role
Designing the menu	head chef
Preparing the sauces	head chef
Boiling the spaghetti	sous chef
Chopping the vegetables	sous chef
Cleaning the dishes	apprentice chef
Putting out the garbage	apprentice chef
Taking customer orders	wait staff
Delivering food to tables	wait staff
Dealing with customer complaints	proprietor
Operating the till	proprietor
Pocketing the tips	proprietor
Paying the mafia protection money	proprietor

# RASIC Responsibility Chart

A more elaborate form of responsibility matrix:

(R)esponsible (A)pproves/accountable  
(S)upport (I)nformed (C)onsulted

Role:	Proprietor	Head Chef	Sous Chef	Apprentice Chef	Waiters
Person:	S. Berlusconi	N. Lawson	M. Fulton	D. Trump	Vladimir & Estragon
Designing the menu	A	R	S	I	I
Preparing the sauces		R	S		
Boiling the spaghetti		A	R	S	
Washing the dishes				R	A
Putting out the garbage				R	
Taking customer orders	I	I	I		R
Delivering food to tables					R
Dealing with customer complaints	R	C			C
Operating the till	R				
Pocketing the tips	R				
Paying mafia protection money	R				

(There are other forms: RACI, CAIRO, RASCI, ... pick one that suits your project/team)

[http://en.wikipedia.org/wiki/Responsibility\\_assignment\\_matrix](http://en.wikipedia.org/wiki/Responsibility_assignment_matrix)

# Running Exercise

Develop a responsibility matrix for your Google project

# Weekly Work Sheets

For a project, responsibilities are to *complete* tasks, rather than keep performing a regular activity.

So it helps to know "what do I need to do this week/day? "

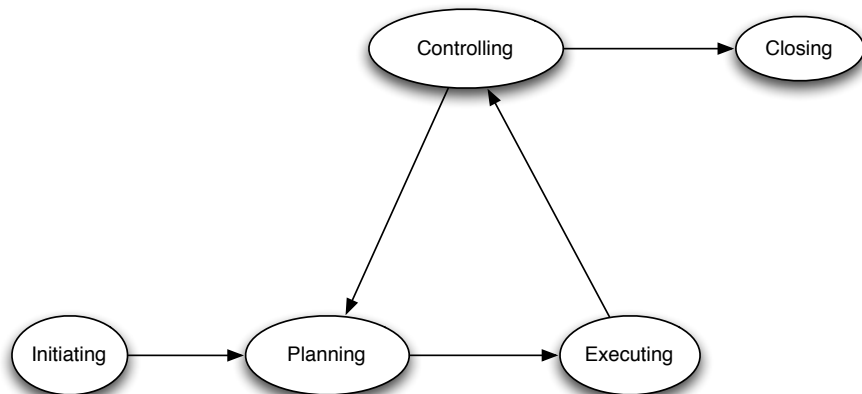
This should be derived from the WBS based on scheduling considerations (which we cover later).

Period	Task	Task Description	Req't	Member	Output	Status
2	1	organise group structure/roles	PM	all	pm.tex	completed
3	25	do use-case for cases 1 + 2	R5-7	Sergi	uc.tex	completed
3	26	do use-case for cases 3 + 4	R8-9	Donna	uc.tex	done 50%

# Running Exercise

Develop a worksheet for the first week of your Google project.

# Monitoring and Control



## Monitoring & Control:

- ▶ Performance reporting
  - ▶ is a task complete, if not, what percent complete?
  - ▶ progress against success/acceptance factors
  - ▶ what variances, why?
- ▶ What control action/response?
  - ▶ changes to schedule?
  - ▶ changes to resource allocation/budget?
  - ▶ changes to expected outcomes?



# Factors in controllability

- ▶ small work packages (max week long)
  - ▶  $\Rightarrow$  more informative tracking of progress
  - ▶ avoid “almost complete” phenomenon (90% complete for the last three weeks)
- ▶ clear completion/quality criteria
- ▶ SMART makes degree of progress measurable
- ▶ status meetings (weekly)  $\Rightarrow$  peer pressure
- ▶ quality control process
- ▶ active response to issues

# Change management

= change of scope, schedule, quality, acceptance criteria

what are the criteria for deciding that a change will be made?

- ▶ prefer to minimize changes
  - ▶ document any change
  - ▶ involve stakeholders
  - ▶ evaluate impact on project plan/schedule., success factors
- many small changes can add up to a large amount of change (lottery paradox)

**Issues** = actual events, that, without responsive action, will adversely impact project outcomes

**Defects** = issues arising from quality review process

- ▶ Log the issues that arise
- ▶ If necessary, create a new task to represent it
- ▶ Track progress on resolving them
- ▶ Roles: who does the above?

Some forms of project management software focus on issue management, particularly for bug tracking and resolution applications

# Running Exercise

How will you control your Google project?

Primary objective: ensure project meets requirements

Acceptance criteria: - has the goal been stated clearly enough that you can decide if it has been met?

How will quality control be done?

- ▶ checklist
- ▶ reading by reviewer
- ▶ team code reviews
- ▶ testing

## Plan for quality control

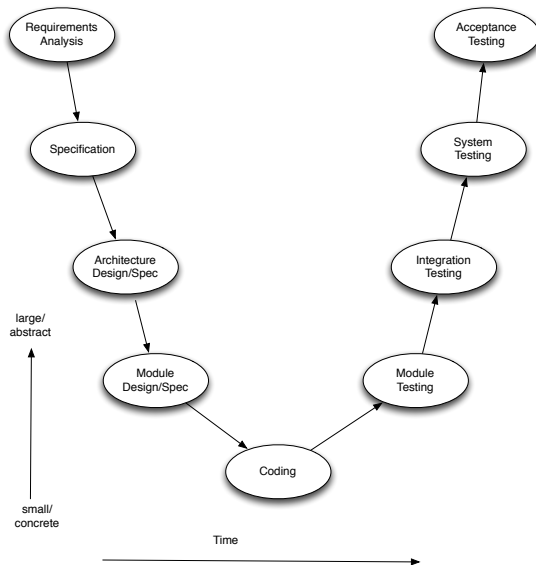
- ▶ make quality control tasks explicit in WBS,
  - ▶ to ensure it is done
  - ▶ to ensure resource cost is accounted for
- ▶ allow time for revisions

Roles: who undertakes quality assurance?

General Principle: Quality assurance done by someone other than the person who did the work.

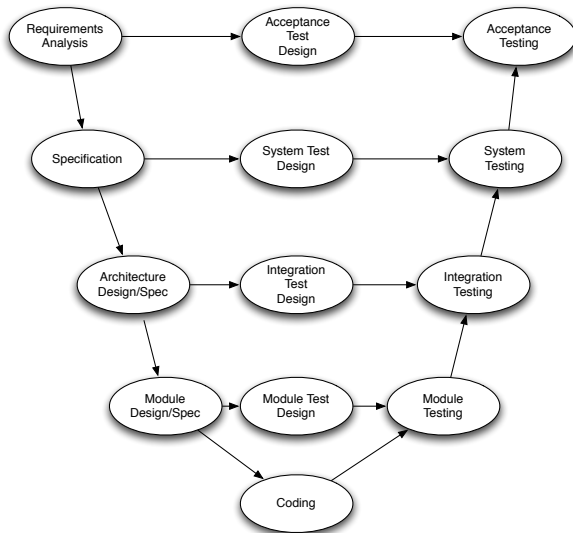
- ▶ keep them honest
- ▶ author not the best person to judge their own work
- ▶ different perspective allows broader set of properties to be seen

# V model for systems engineering

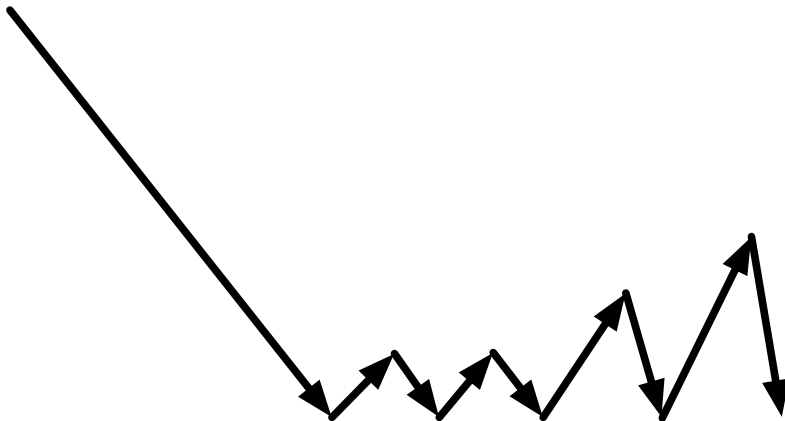




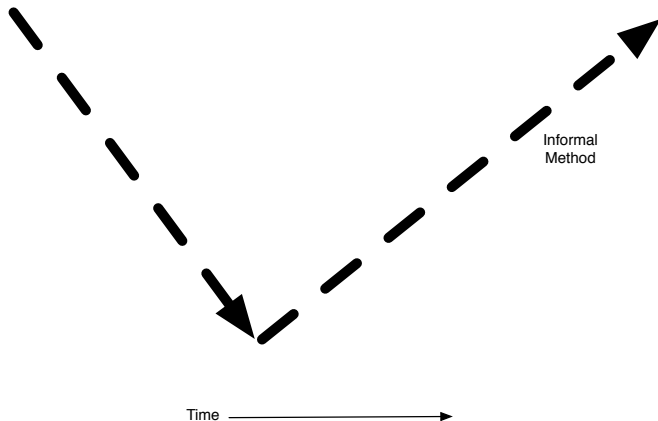
# V model - test design is work



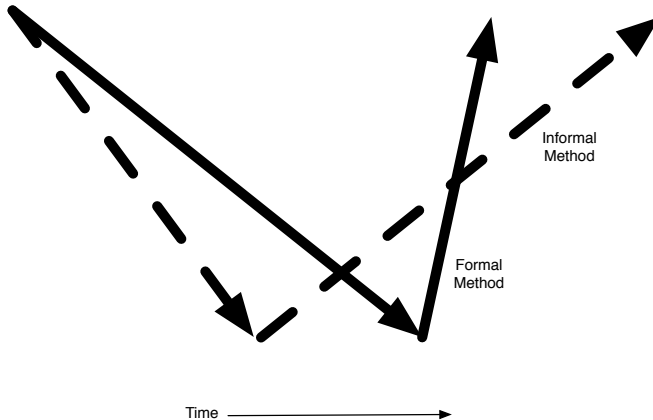
# Quality control leads to re-work



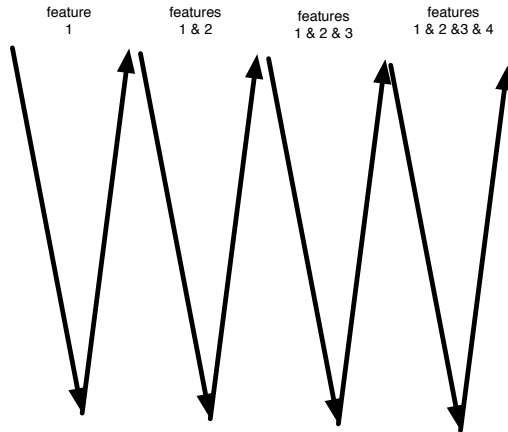
# Informal vs Formal Methods



# Informal vs Formal Methods



# Agile Methods



# Running Exercise

How will you control quality on your Google project?

# Communications

- ▶ Frequency/Schedule of meetings
- ▶ Agenda for group meetings: what are all the things you need to remember to discuss?
- ▶ Minutes of Meetings:
  - ▶ who was there,
  - ▶ what was discussed,
  - ▶ what decisions were made,
  - ▶ what actions need to be taken as a result,
  - ▶ who is going to perform those actions?
- ▶ How is communication managed outside of meetings?

# Information/Configuration management

- ▶ location of repository
- ▶ hierachical/directory structure
- ▶ file naming conventions
- ▶ process for introducing/changing files
- ▶ roles: who manages the repository (tool expert?)



# Running Exercise

How will you manage communication on your Google project (AND within your project group this session)?

# Staff performance

- ▶ Clarity of objectives/roles/tasks
- ▶ Plan as a team (buy in)
- ▶ Match tasks to individual strengths
- ▶ Incentivize performance:
  - ▶ visibility of state of progress (peer pressure)
  - ▶ celebrate milestones
  - ▶ punish/reward (use of unequal mark distribution)
- ▶ Build team cohesion/relationships/rituals

# Running Exercise

Discuss: What have been performance management issues in your past groupwork projects? How are you going to manage these this time round?

**Risks** = *possible* events, that, without responsive action, could adversely impact project outcomes

- ▶ Anticipate what could go wrong!
- ▶ Balance = be a bit paranoid, but don't go nuts
- ▶ Persistence = keep assessing to identify new risks and monitoring for anticipated risks

# Risk attributes

- ▶ likelihood
- ▶ degree of impact
- ▶ possible response/control action

*Prioritize:* focus risk response on risks that

- ▶ are likely,
- ▶ have a high impact
- ▶ are controllable

If you can quantify probability and impact, order by  
expected impact = impact  $\times$  probability

# Example

Worrying about an outbreak of bubonic plague and staff death is probably being paranoid, and a waste of time.  
(very low probability and not controllable)

Worrying about the impact of someone getting the flu and being sick for a week (or worse, everyone at the same time!) is legitimate.

Control action: get your staff to have a flu shot!

**Avoid:** (don't do the thing that causes the risk)

- ▶ e.g., to avoid risk of death by parachute failure, don't jump out of planes
- ▶ to avoid flu impact, make sure everyone gets a flu shot

**Accept:** Do nothing, absorb the consequences if the risk occurs

- ▶ e.g., your bank accepts risk of credit card theft & misuse as a cost against interest profits
- ▶ accept that someone might get the flu, build a week long buffer into the schedule to absorb the impact



**Mitigate:** Act to reduce likelihood, or reduce impact

Example: response to risk of flu

- ▶ reduce likelihood: make sure you wash your hands before eating, don't touch your nose
- ▶ reduce impact: have some flu medicine ready

**Transfer:** shift the consequences to someone else

- ▶ get health insurance, so you don't have to pay the doctor's bill when you get the flu
- ▶ write a clause into the contract saying that the client accepts the costs resulting from unforeseen events such as epidemic, flood, earthquake, war, civil unrest.

# Common risk factors

- ▶ poor estimates of effort
- ▶ staff: lack of skill, effort, commitment, personal/health problems, time management problems (times of heavy workload)
- ▶ poor communication
- ▶ objectives/tasks insufficiently precise
- ▶ integration difficulties (mismatch of components)
- ▶ planning problems: missing task, missing dependencies, insufficient buffers
- ▶ too much time on project planning and too little on execution!

# Running Exercise

What are the risks for your Google project, that might impact on you having a brilliantly successful startup company?

How will you manage these risks?

# Exercise for the first meeting with your mentor next week

Pretend your mentor is your investor. Prepare a project planning document of up to 5 pages that describes what your group will do about the project planning issues discussed above:

- ▶ Work Breakdown,
- ▶ Task Allocation
- ▶ Control strategy
- ▶ Change management
- ▶ Communication/Project Information
- ▶ Quality process
- ▶ Issue handling
- ▶ Staff performance
- ▶ Risks & Risk Response

Present this plan to your mentor and discuss.

