31272 Project Management and the Professional

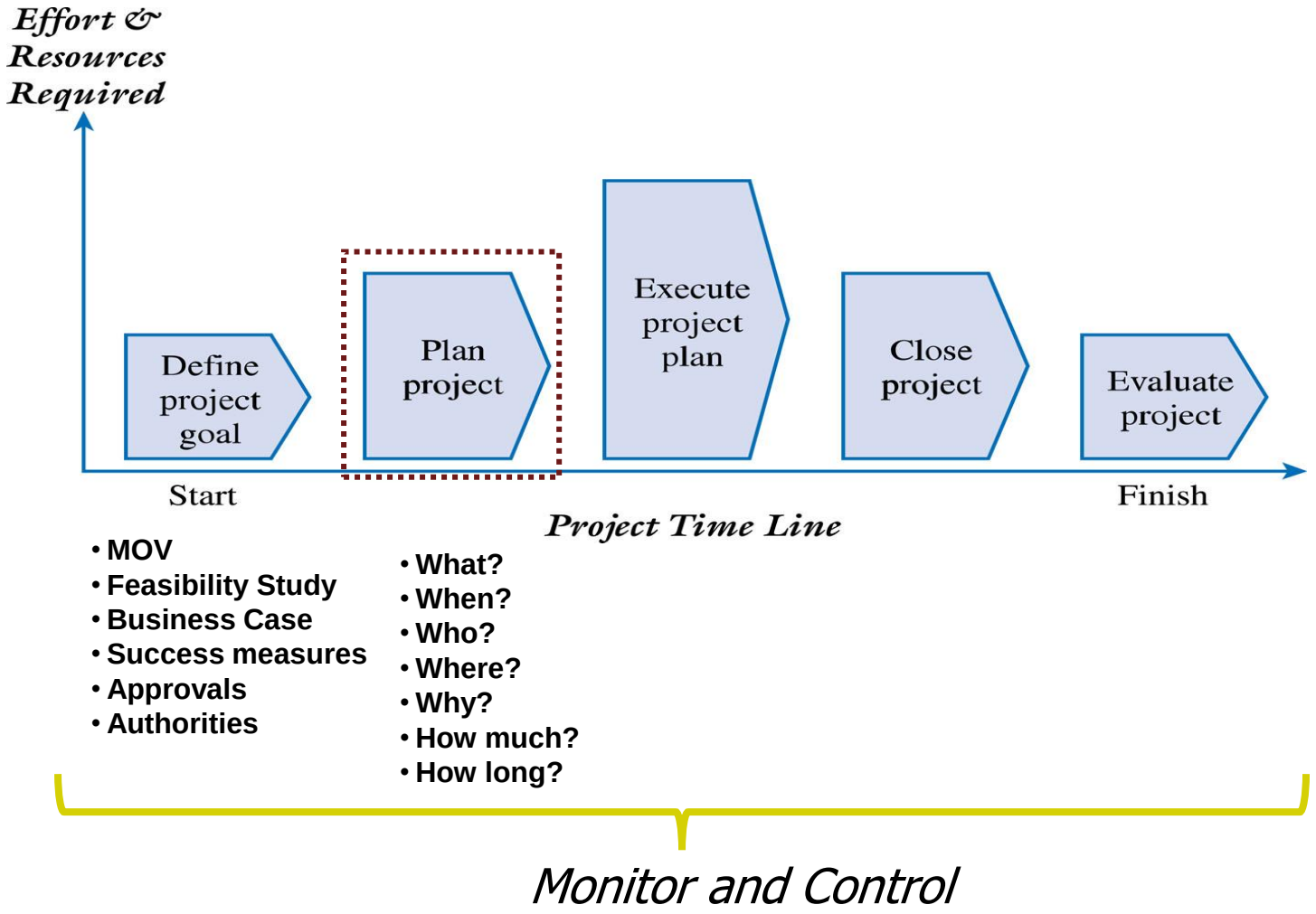
Lecture 6: : Risk Management

Subject Coordinator | Lecturer: Dr Safa Ghannam
31272@uts.edu.au

Learning elements

- Be able to plan and establish a project-wide risk management system.
- Understand the significance of establishing the context of risk in a project environment.
- Understand and apply some of the fundamental risk management tools that are found in a project environment, for identification, analysis and evaluation of risks in both their inherent and residual states.
- Respond to the challenges of monitoring and controlling risk during the execution of a project.
- Be able to consider the impact of risk to the project’s budget and to contingency reserves.

Project Management Planning

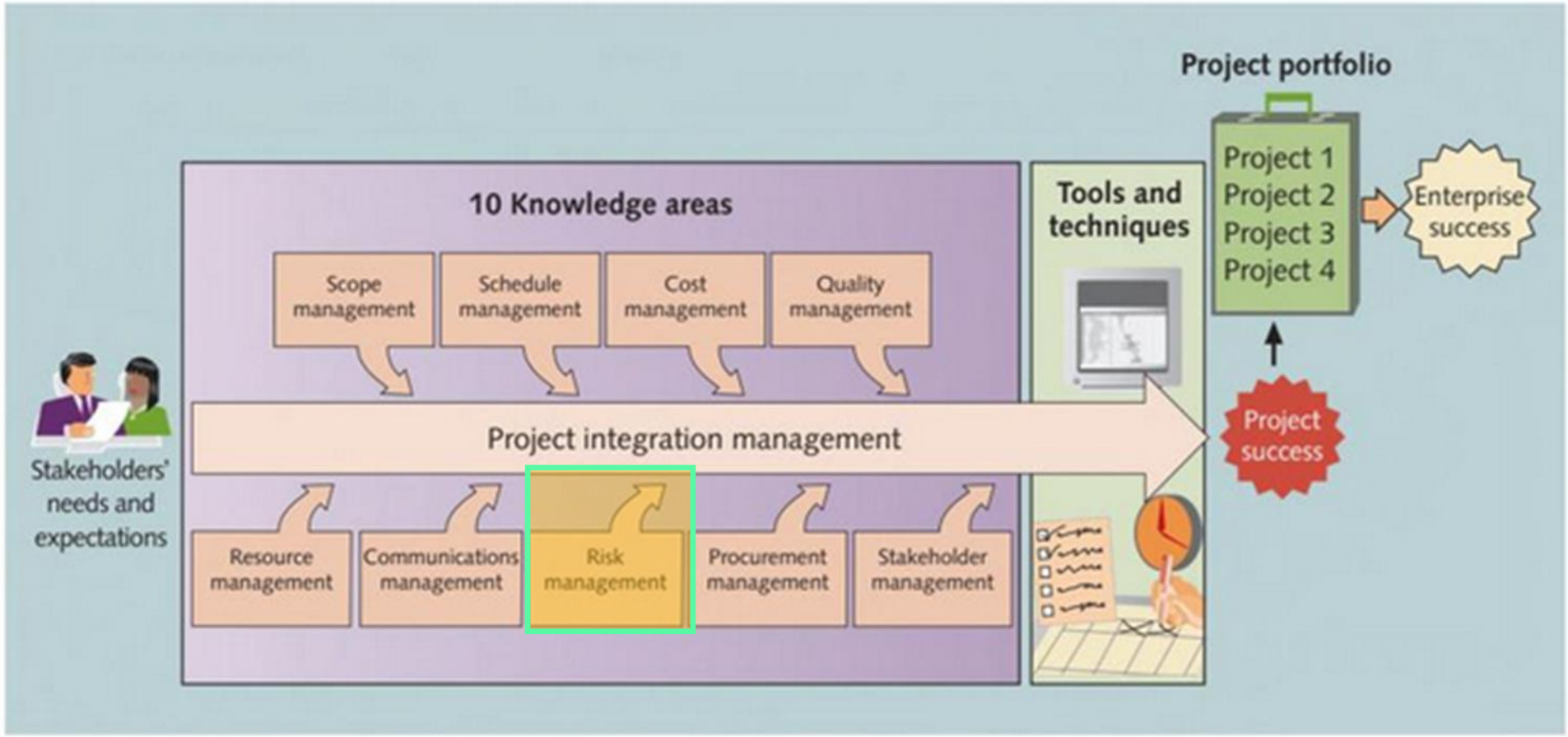


Common sayings

- If you fail to plan, you plan to fail
- What get measured gets managed
- Not measured, not done

The purpose of project planning is to guide project execution

Project Management Planning: Risk



Risk Definitions

Risk

"An uncertain event or condition that if it occurs, has a positive or negative impact on the project objectives"

PMBOK – Project Management Body of Knowledge published PMI USA

"A risk is something that may or may not happen. If it does happen, then it is likely to jeopardize the success of the project"

Hughes and Cotterell (2009)

Risk Management

"An organized means of identifying and measuring risk and developing, selecting and managing options for handling those risks"

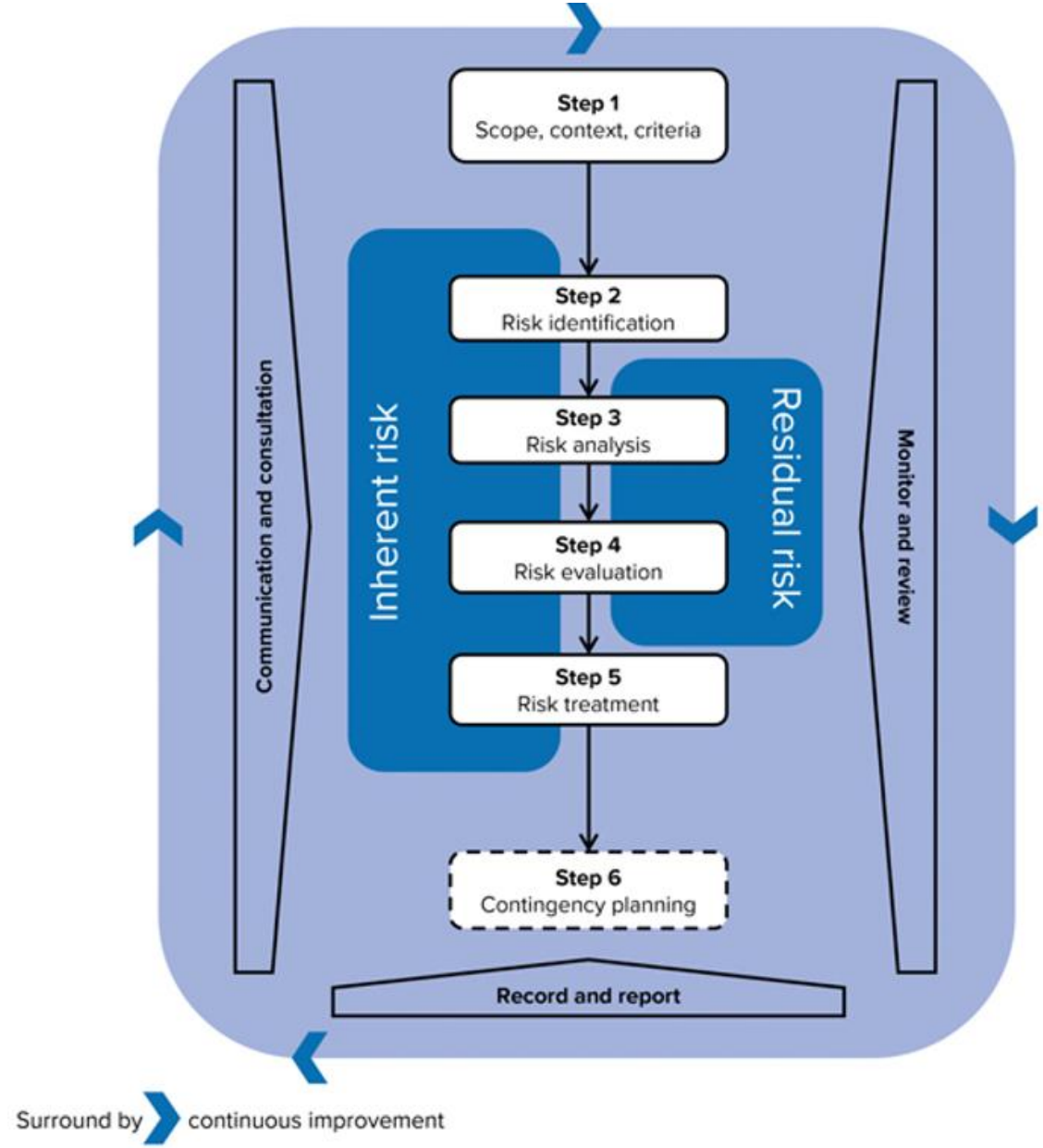
Kerzner (2004)

What is risk management?

- In any project team, there must be an understanding of the fact that *things can happen*, and that risks are never static, and **issues** immediate and eventuated are required to be managed.
- Risk management requires a *proactive* rather than a *reactive* approach. It is a preventive process designed to ensure that surprises are reduced and that any negative consequences associated with undesirable events (often referred to as a "**threat risk"**) are minimised.
- It also prepares the project leader to act when a time, cost and/or technical advantage is possible (an **opportunity risk**).

Threat risk workflow

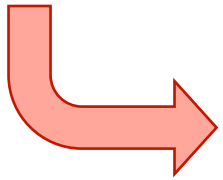
The Risk Management Process: AS/NZS ISO 31000 (2018)



Outcomes of Poor Risk Management: Examples

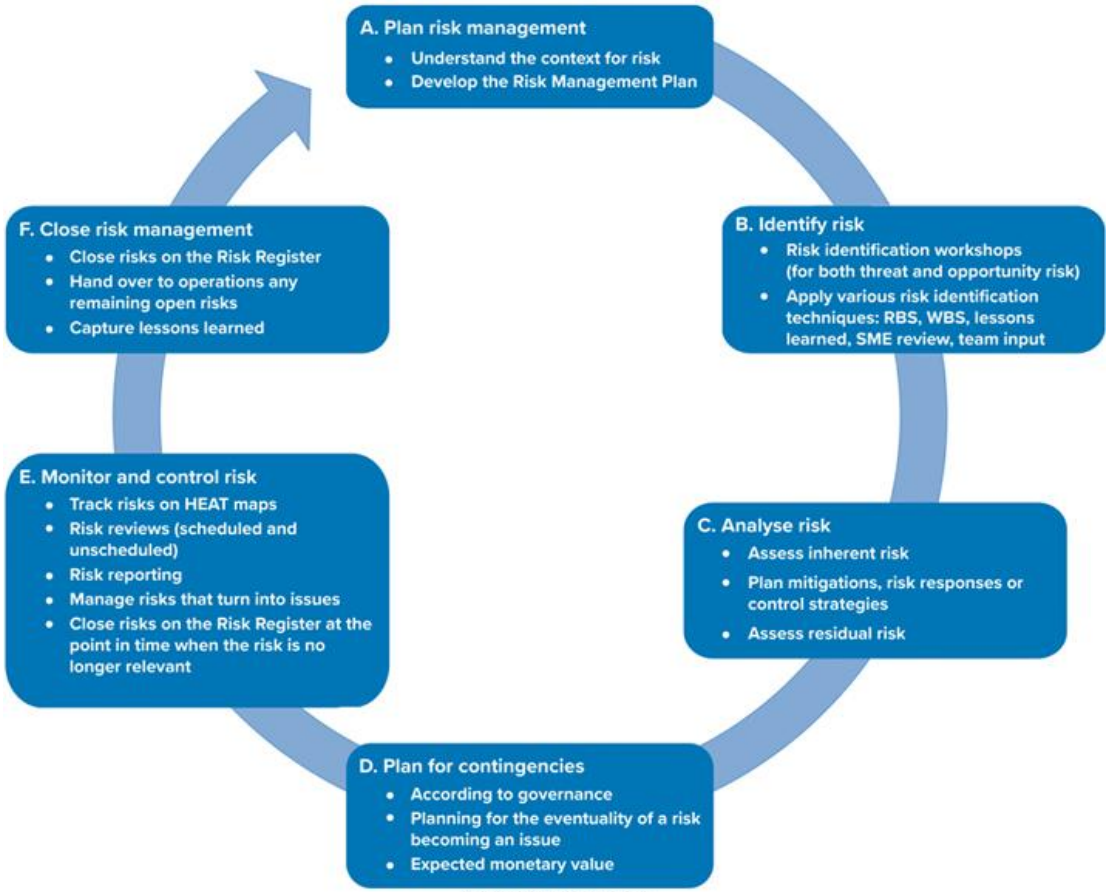
Australian Parliament House	$220m to 1100m; 5 months late
Collins class submarines	$3900m to $6000m; 3 years late
Sydney Opera House	$7m to $103m, 10 years late
Sydney Olympics	$600m to $6000m
London Stock Exchange *Taurus*	$200m over; cancel
NSW Govt *Tcard*	$35m to $100m; 10 years late, cancel
QLD Health *Payroll*	$6.19m to $1250m (est); cancel

Case Study 9: The Payroll System That Cost Queensland Health AU$1.25 Billion - Henrico Dolfing



Risk has a cost!

Risk activities

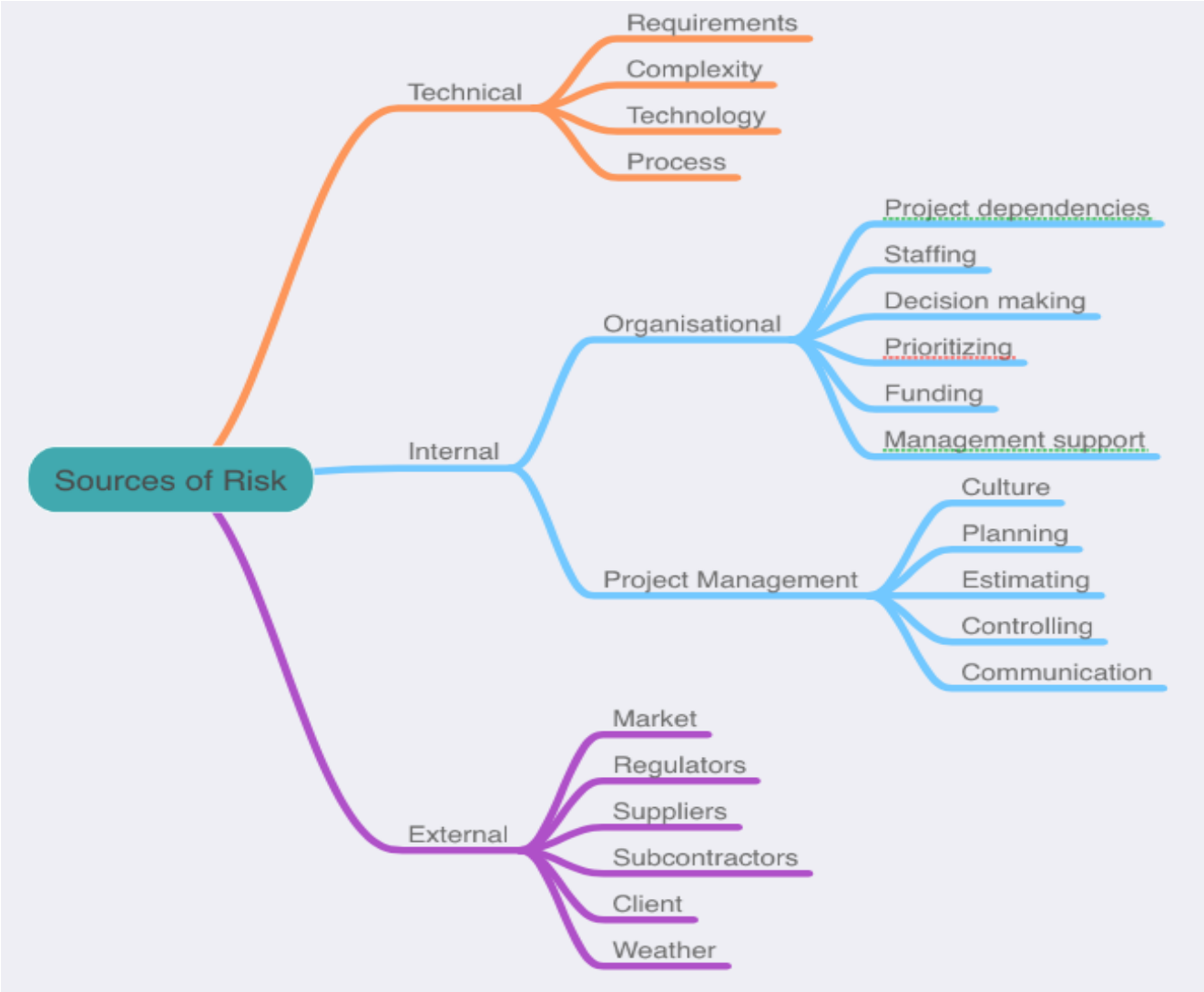


The control strategies are different

The control strategies are different.

PMBOK	PRINCE2	Praxis	APM
Escalate			
Exploit	Exploit	Exploit	Exploit
Share	Share	Share	Share
Enhance	Enhance	Enhance	Enhance
Accept			
	Reject	Reject	Accept

Sources of Risk



Project Risk Management

Adapted from Marchewka (2012)

Risk Management Planning

- Identifying, analysing and developing strategies for responding to risks efficiently and effectively
- Provides a warning system for impending or potential problems that need to be addressed or resolved
- Decreasing probability/impact of undesirable events
- Increasing probability/impact of desirable events

Risk Management is about managing uncertainty

Project Risk Management: 1. Risk Planning

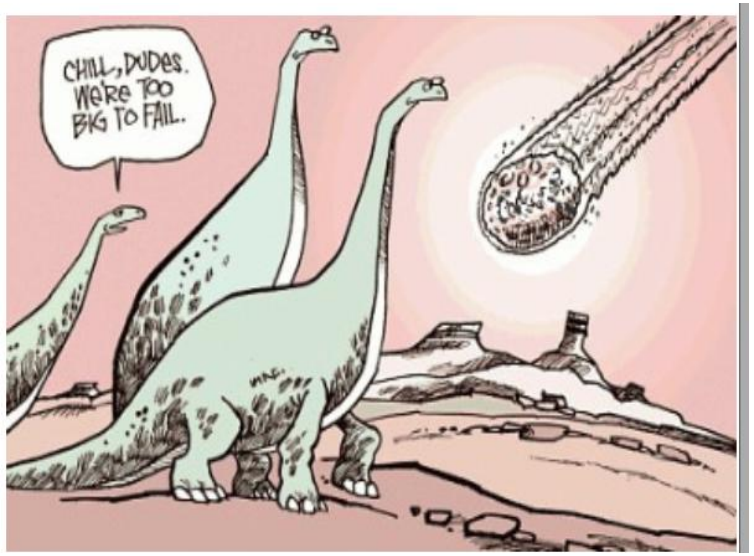
- Not a simple exercise
- Risks can affect a project in different ways and at different phases of the Project Life Cycle
- Risk planning is active and dynamic
- Know availability of time, resources, tools, commitment

Risks can come from many sources and any direction

Project Risk Management: 2. Risk Identification

- Risks can be internal or external to the project
- Known knowns, known unknowns, unknown knowns and unknown unknowns
- Brainstorming, interviewing, checklists, past projects

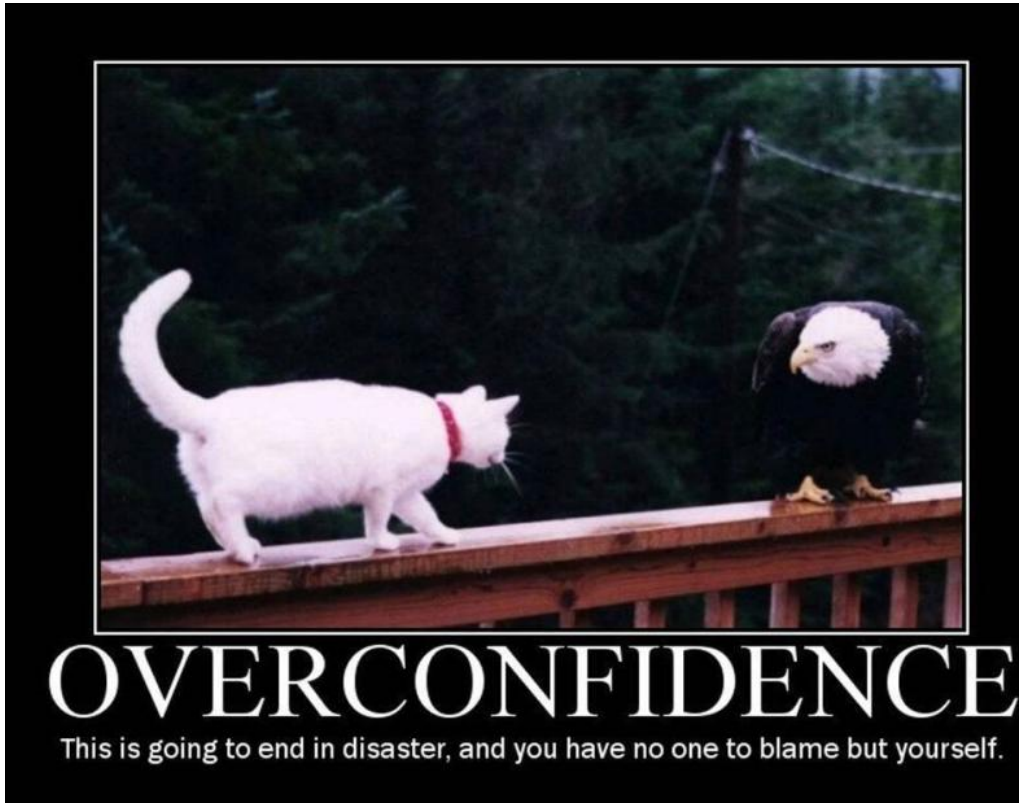
Risk identification is the most critical step in risk management



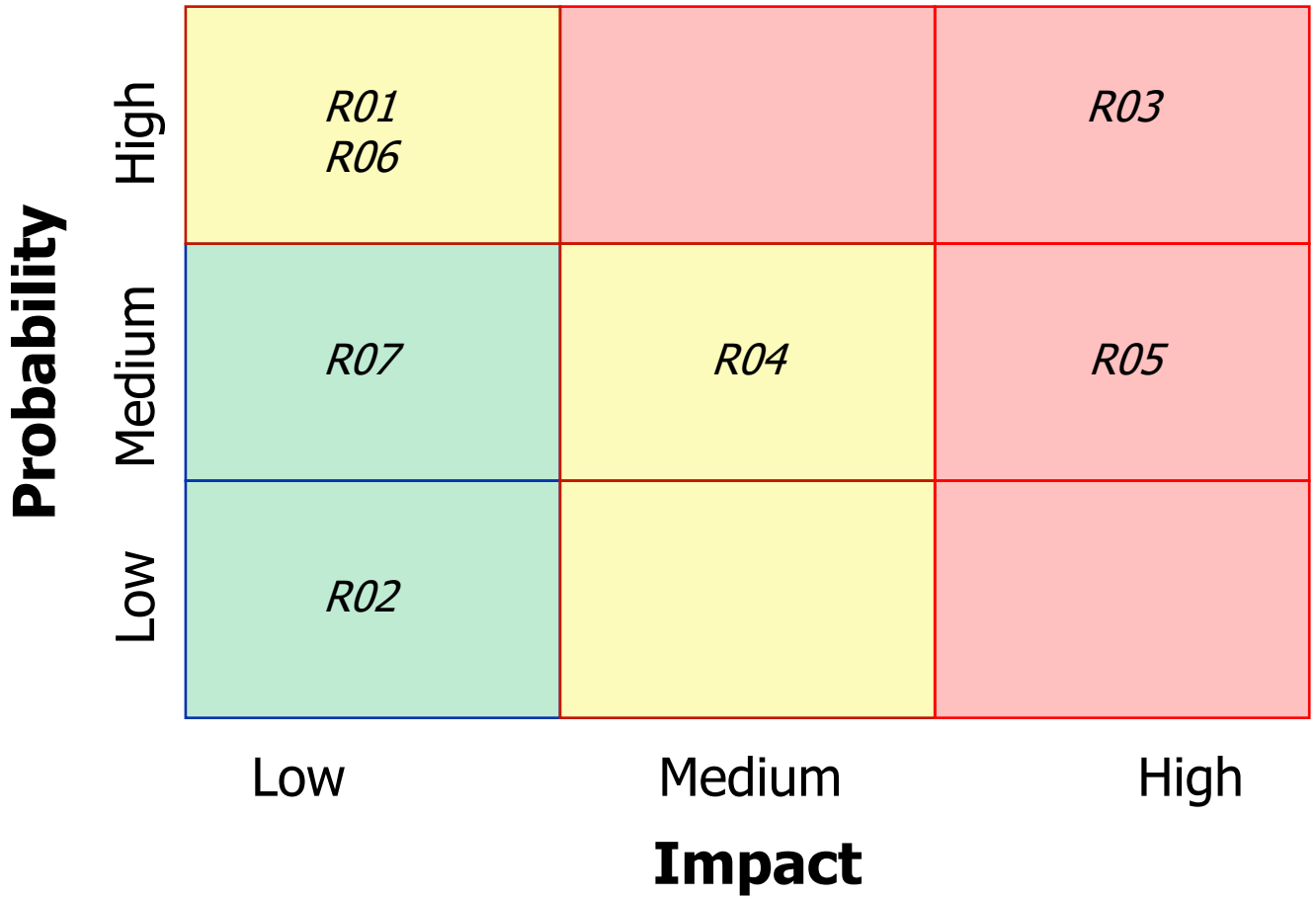
Project Risk Management:
3. Risk Assessment

- A risk has two components:
  - Likelihood (Probability), and
  - Impact (Consequence)
- Together these indicate the *Risk Level*

*If **likelihood** or **impact** increase, then so does the risk*



Project Risk Management: 3. Risk Assessment



Risk analysis—inherent

Risk identification		Inherent risk (unmitigated risk)		
Risk ID	Risk name	Probability*	Impact†	Inherent RPN (Probability × Impact)
RID-0001	Abnormal ground conditions discovered when taking core samples of site.	3	4	12
RID-0002	Unstable ground requires additional groundwork prior to foundations.	2	4	8
RID-0003	Inclement weather days exceed "wet days" built into schedule.	3	3	9

Probability scale
1 Rare
2 Unlikely
3 Possible
4 Likely
5 Almost certain

†Impact scale
1 Insignificant
2 Minor
3 Moderate
4 Major
5 Catastrophic

Scales defined in your PMO Risk Policy, or project Risk Management Plan!

Project Risk Management: 4. Risk Strategies

A risk response strategy may be:

- Accept / Watch
- Avoid
- Reduce / Mitigate (via response plan)
- Transfer

Document project risks and strategies in a Risk Register

Project Risk Management: Risk Register/Matrix

Id	Rank	Description	Trigger	Owner	Probability	Impact	Response	Status
R03	1	No project sponsor	CEO Resign	J. Smith (PM)	High	High	COO or CIO to be sponsor	Ongoing
R05	2	Hardware late	Elapsed Deadline	C. Jones (HW Lead)	Medium	High	Reorder from new supplier	Approval pending
R04	3	Miss system go-live date	Elapsed Deadline	J. Smith (PM)	Medium	Medium	Keep old system running	Fallback tested
…	…	…	…	…	…	…	…	…

Result of treatment

Risk identification		Inherent risk (unmitigated risk)			Mitigation planning			Residual risk (mitigated risk)		
Risk ID	Risk name	Probability*	Impact*	Inherent RPN	Strategy	Mitigation actions	Mitigation owner	Probability*	Impact*	Residual RPN
RID-0001	Abnormal ground conditions discovered when taking core samples of site.	3	4	12	Mitigate	1. Take core samples earlier in the project. 2. Include costs in first stage payment by customer.	1. Project leader 2. Finance director	1	4	4
RID-0002	Unstable ground requires additional groundwork before foundations.	2	4	8	Avoid	1. Replan the project schedule to include additional steps in the land procurement strategy, so land is not purchased that has a high cost of pre-work.	1. Procurement manager	1	4	4
RID-0003	Inclement weather days exceed "wet days" built into schedule.	3	3	9	Accept			3	3	9

Project Risk Management: 5. Monitor and Control

- After creating the risk plan, the triggers must be monitored to track the risks
- New threats and opportunities may be uncovered
- Risk monitoring and control may be part of the overall project monitoring and control
- Tools: Risk audits, risk review, risk status meetings and reports

Risk monitoring and control is a continuous exercise

Project Risk Management: 6. Risk Response

- When a risk trigger occurs the risk owner must take appropriate action (per the Risk Response plan)
- Outcome will be favourable or unfavourable
- Outcome should be assessed for further action

Resources and support must be available

Project Risk Management: 7. Risk Evaluation

- Know what worked and what didn't
- Recognize / avoid similar issues
- Improve process

Learn the best practice for the future

Opportunity risk

- There can be positive risks on a project that, when well-managed, have the potential to enhance project outcomes. This is commonly referred to as **opportunity (or positive) risk**.
- An opportunity is an event that can have a positive impact on project objectives.
- For example, unusually favourable weather can accelerate construction work, or a more favourable contract to supply fuel at cheaper prices may create savings that could be used to add value to a project.
- However, these risks must be elevated in order to ensure the positive risk has a higher chance of occurring.

Risk closure

- Towards project closure the Risk Register should essentially (if all went to plan!) be full of closed risks that did not eventuate into issues. Some of the activities at project closure in relation to risk management would therefore include:
- close as appropriate remaining risks in the Risk Register
- hand over to operations remaining open risks that are not related to the project but to the operational running of the system
- capture lessons learned in relation to risks, and the management of risk
- close risk-related issues, where a risk eventuated and resulted in an *issue*, ensure that the issue has been resolved and there are no remaining actions.

Project Management (Integration) Plan

- Integrates all the key knowledge areas of the project
  - Baseline for project measurement and control (scope, time, cost)
  - Includes organisation, team contracts, processes, work to be performed, resources needed, risk and schedule information, etc.
- Is detailed, tailored to a project, dynamic and subject to change
- Includes a *project plan* (tasks to be executed to complete project deliverables – often noted on Gantt chart and Network Dependency Diagram)

A Project Management Plan and the Project Plan are not the same thing!