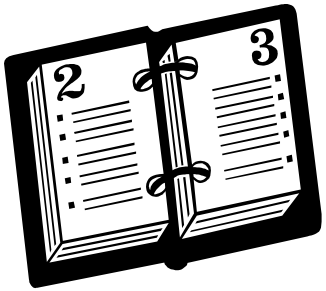
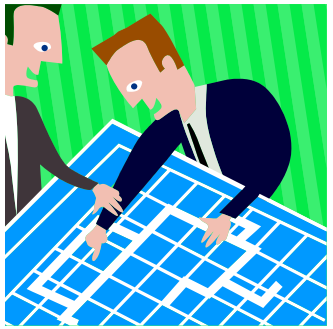
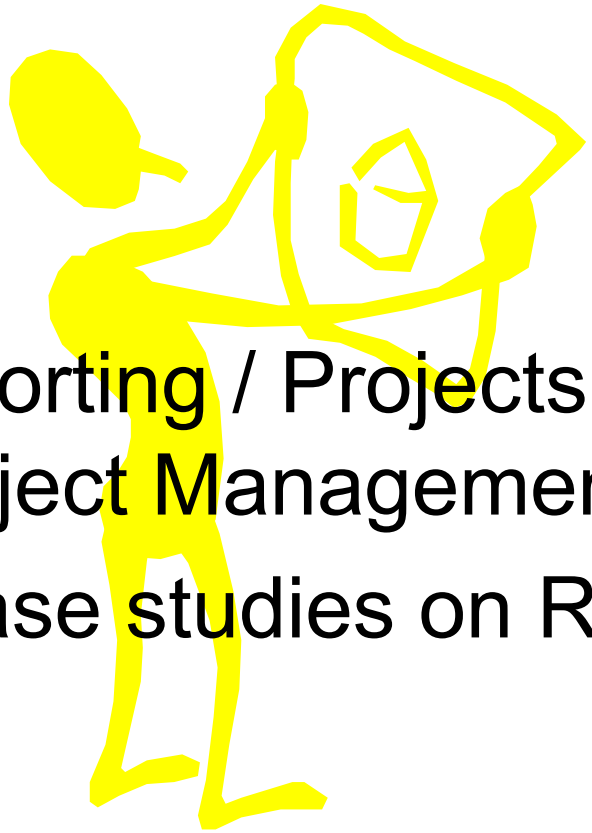
The University of Sydney

INFO5990 Professional Practice in IT

Lecture 07A/B





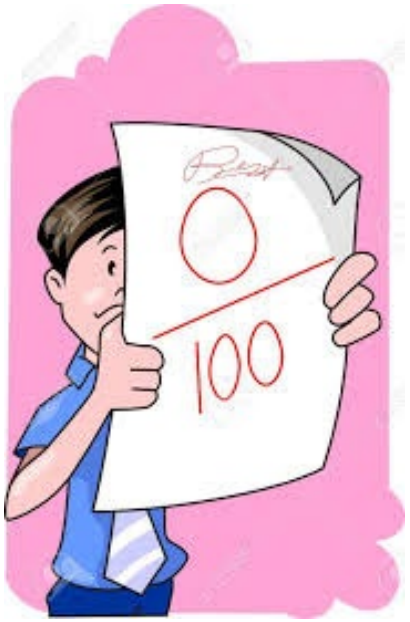


Risk & Reporting / Projects Tools for Project Management

2 Case studies on Risk

Group Assignment

- Many students not yet assigned to their teams. You receive “0” marks
- Understand who is doing something similar. Saying “no one” is not correct.
- Next week the financials



www.finra.com

By the end of this lecture you will be able to:

- Describe some tools and techniques used for project management
- Understand how a network diagram can be used to establish projects
- Case studies on PM
- Project reporting
- Project risk

Case Study
Ariane 5

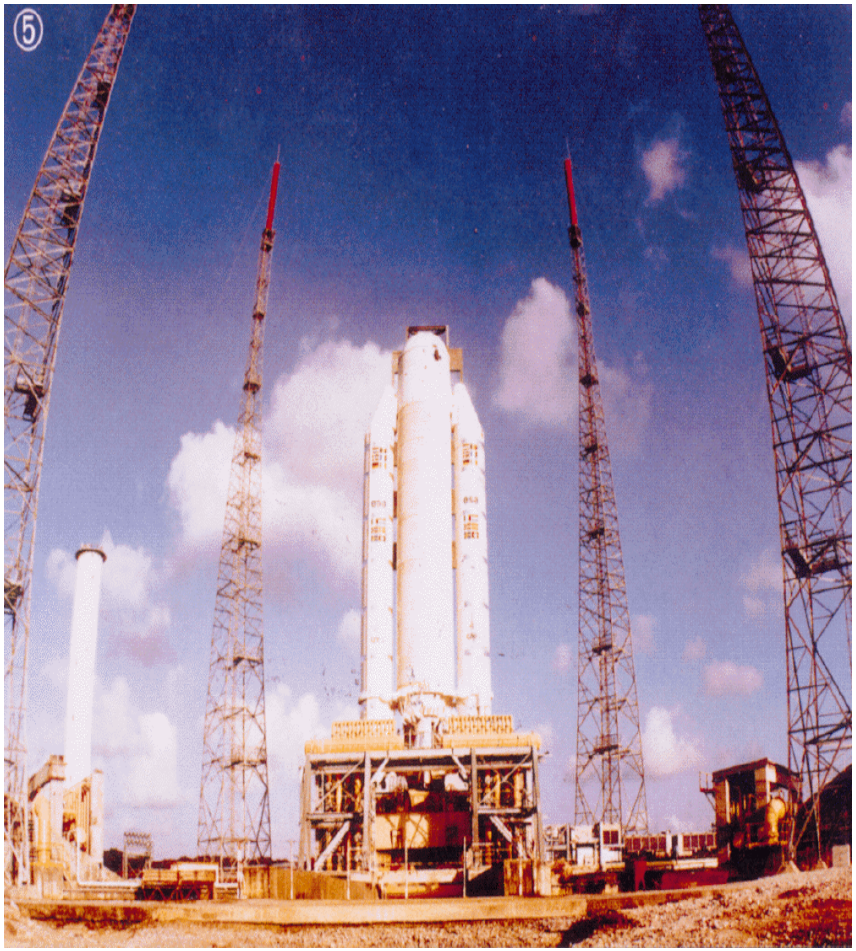
Video of IT failure

Show this !

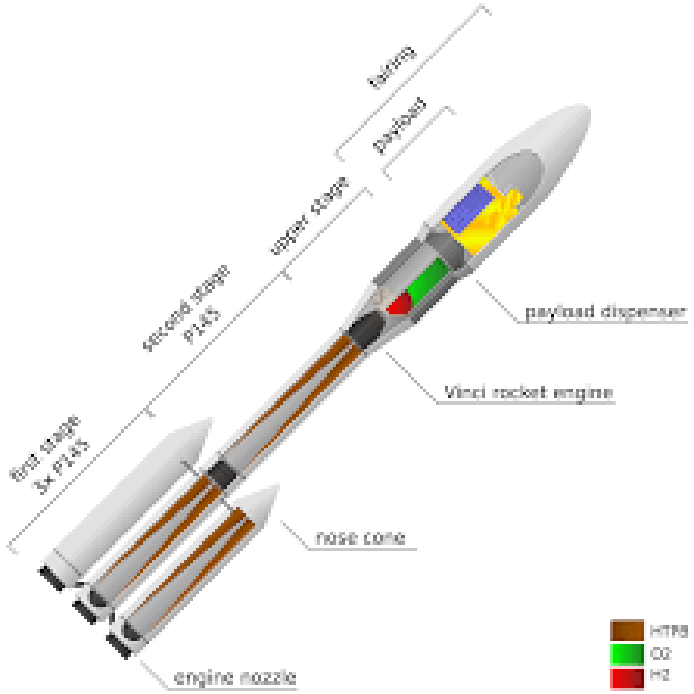
https://www.youtube.com/watch?v=PK_yguLapgA

Project

- On June 4, 1996, the first European test flight of Ariane 5 took place.
- They were sending $500M of satellites into space.



What Failed



- 40 seconds after launching, at an altitude of about 3700 m, the launcher veered off its flight path, broke up and exploded.
- ***A 16 bit integer was executed which caused the computers to shut down and the aerodynamics destroyed Ariane 5***.
- The same code used in Ariane 5 worked fine in Ariane 4. So why did the mission fail? Scientists believed it would work as well in Ariane 5.

What did they do ?

- Set up an independent Inquiry Board.
- The software bug was misleading, because the failure was due to dynamics of ariane 5, different than ariane 4.
- Due to the failure they decided to run test and re-examine the test flights .
- After analyzing the data, they found out that the launcher correctly was triggered by the rupture of the electrical links between the solid boosters and the core stage which caused the self-destruction.

Summary

- This engineering failure, was due to specification and design errors in the **software of the internal reference system and the loss of information**.

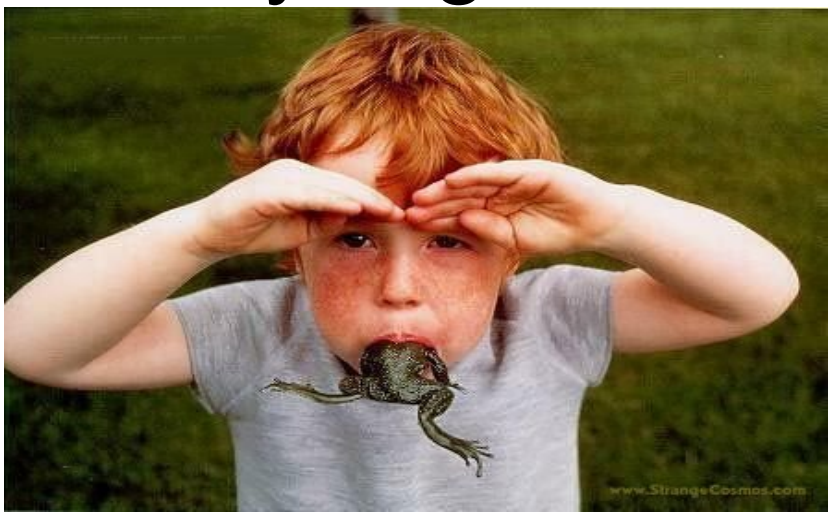
- This failure was a good way to show that you can't always rely on previous work even if it has worked on the passed.

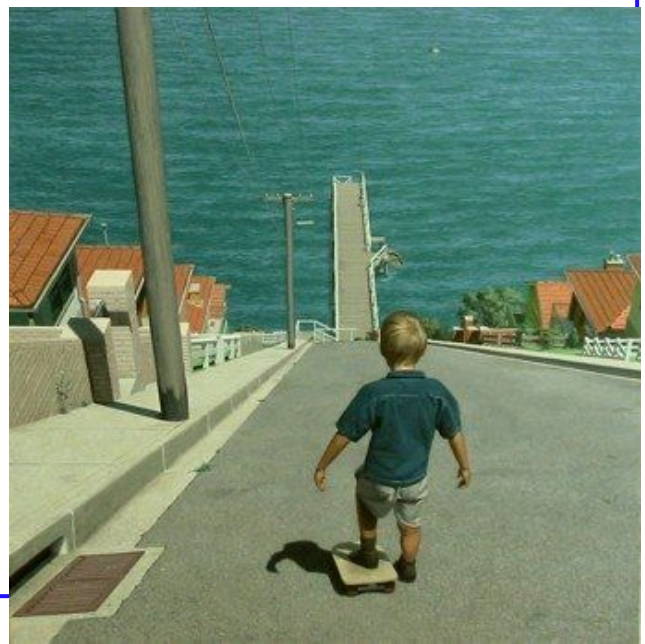
- The code that worked on Ariane 4 was also used in Ariane 5.

What Project Risk's where there ?

Risk Management

Analysing risks – how do you see it ?





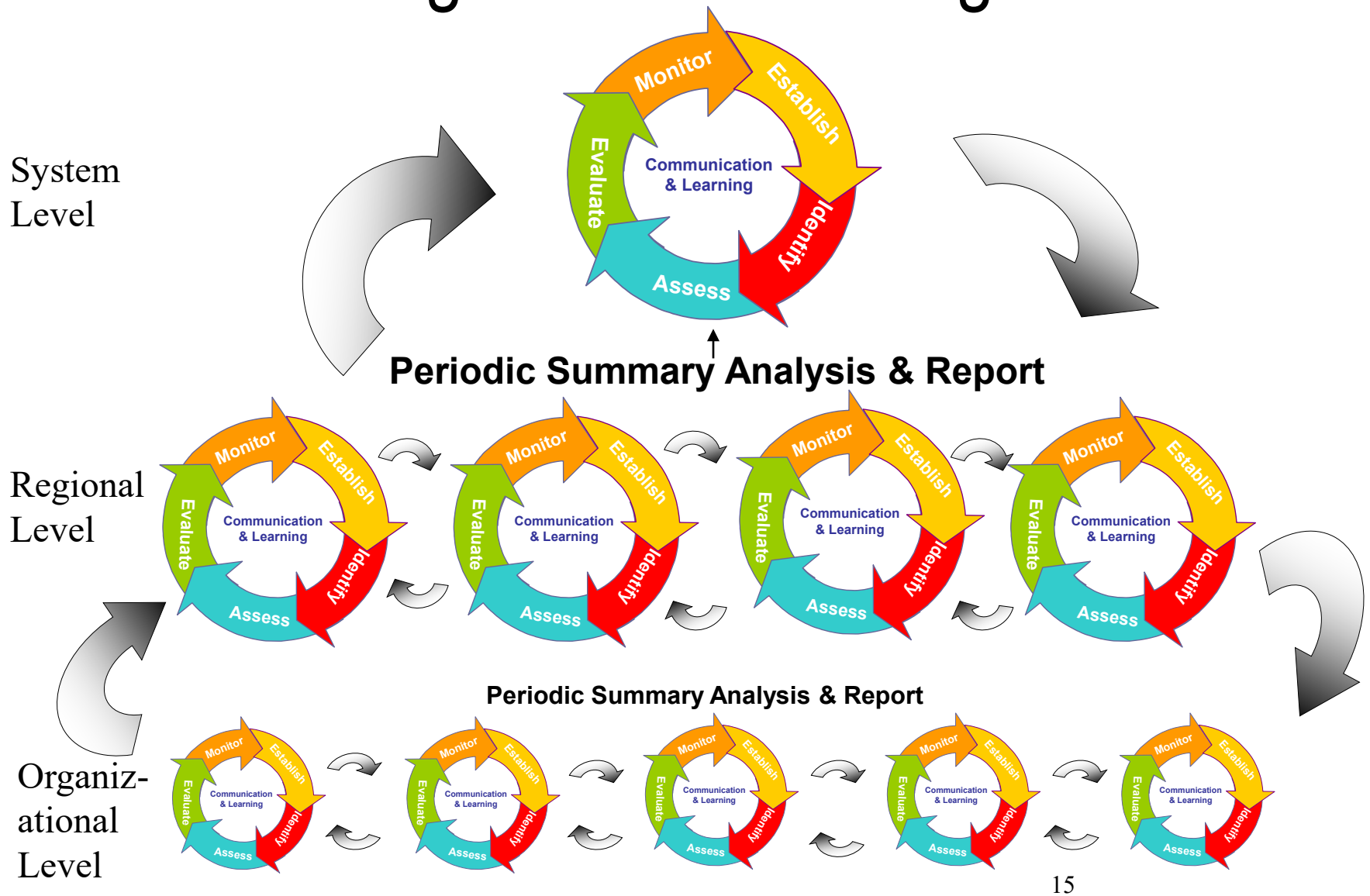
Analysing risks – how do you see it ?
Identify small bits of the project

What to do if the project is ‘slipping’

Take action

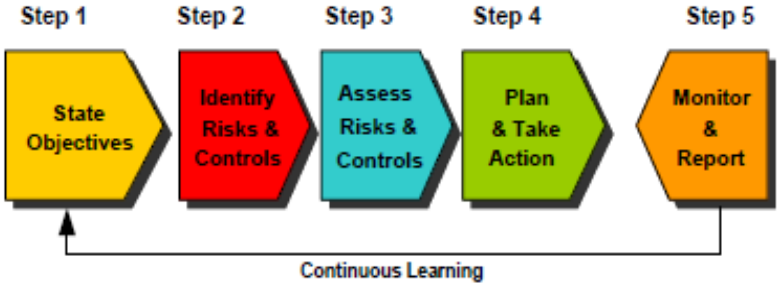
- Identify cause
- Notify management
- Plan remedial strategy
- Revise budget
- Revise project schedule
- Communicate the state of affairs

Integrated Risk Management



Integrated Risk Management Quick Reference Guide

The OPS risk management process



Step 1: State (or establish) objectives

- Define context and confirm objectives
- Risks must be assessed and prioritized in relation to the objective
- The more specific the objectives (specific goals, key milestones, deliverables and commitments) the easier it is to assess potential risks
- Risks can be assessed at any level; operational, program, initiative, unit, branch, health system

Risk (uncertainty)
The chance that a future event will impact the achievement of established objectives. Risks can be positive or negative.

Control / Mitigation Strategy
Controls/ mitigation strategies put in place by management to minimize negative risks or maximize opportunities.

Consequences

- Identify the specific consequences of each risk, if the risk in fact occurred
- Consider and quantify consequences in relation to cost, quality, time, etc.

Cause/Source of Risk

- Understand the cause/source of each risk
- Use a cause/effect diagram

Step 2: Identify risks & controls

Identify risks - What could go wrong?

- Always use the 13 categories of risk
- Examine trends and consider past risk events
- Obtain information from similar organizations or projects
- Brainstorm with colleagues and/or stakeholders
- Increase awareness of new initiatives/ agendas and regulations, consider interdependencies
- Document short-term and long-term consequences for each risk (consider interdependencies)

Identify existing controls – What do you already have in place?

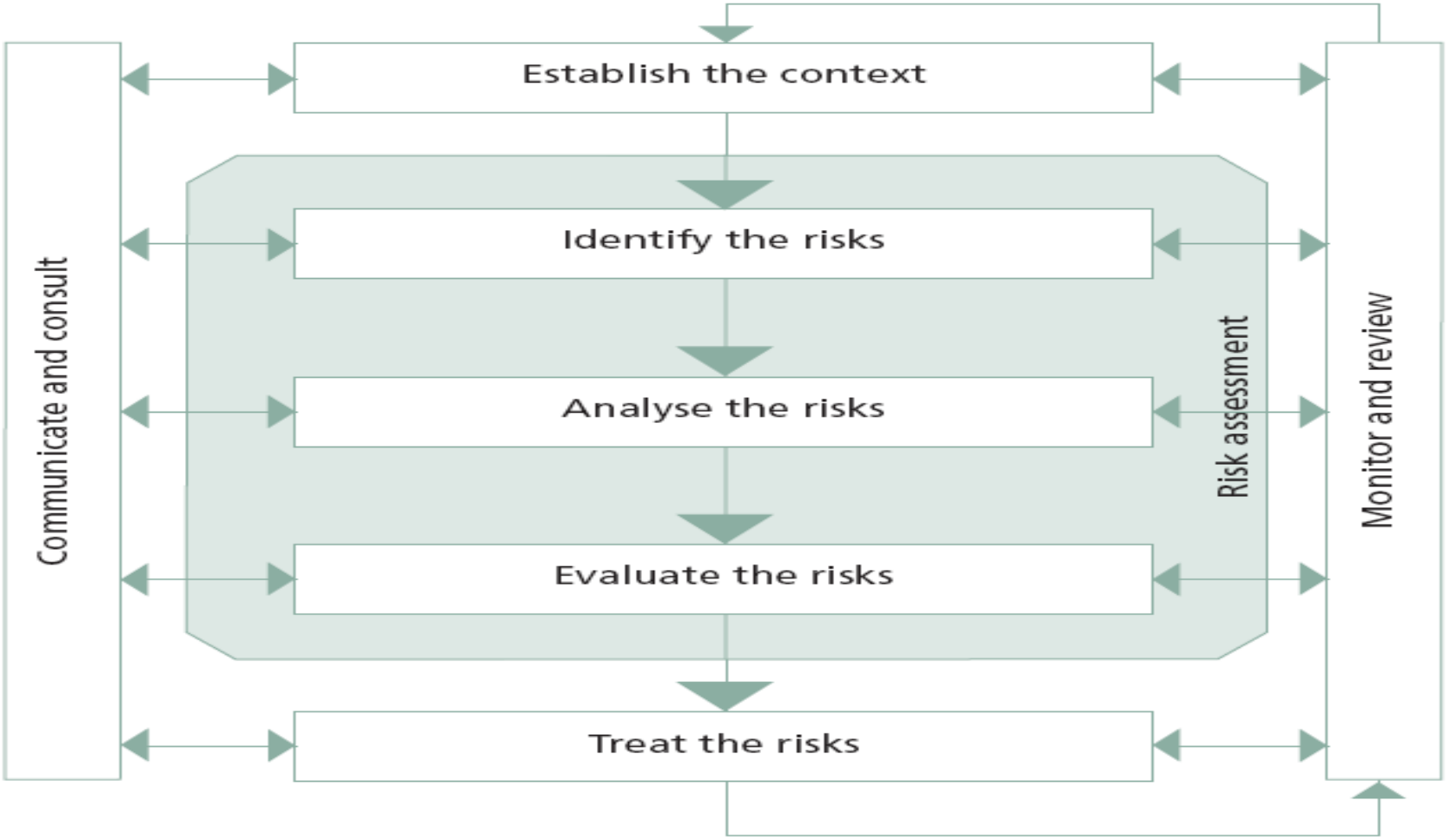
- Preventative controls (address causes and source of risk)
- Corrective / Recovery controls (focuses on reducing impact after risk has occurs)

13 categories of risk

RISK	DESCRIPTION
Compliance/ Legal	Uncertainty regarding compliance with laws, regulations, standards, policies, directives, contracts; may expose the ministry to the risk of fines, penalties, litigation.
Equity	Uncertainty that policies, programs, services will have an equitable impact on the population.
Financial	Uncertainty of obtaining, using, maintaining economic resources; meeting overall financial budgets/commitments; preventing, detecting or recovering fraud.
Governance / Organizational	Uncertainty of having appropriate accountability and control mechanisms such as organizational structures and systems processes; systemic issues, culture and values, organizational capacity, commitment, and learning and management systems, etc.
Information / Knowledge	Uncertainty regarding the access to or use of accurate, complete, relevant and timely information. Uncertainty regarding the reliability of information systems.
Operational or Service Delivery	Uncertainty regarding the performance of activities designed to carry out any of the functions of the ministry/unit, including design and implementation.
People / Human Resources	Uncertainty as to the ministry's/ business unit's ability to attract, develop and retain the talent needed to meet its objectives.
Political	Uncertainty of the events may arise from or impact any level of the government including the Offices of the Premier or Minister, e.g. a change in government political priorities or policy direction.
Privacy	Uncertainty with regards to the safeguarding of personal information or data, including identity theft or unauthorized access.
Security	Uncertainty relating to physical or logical access to data and locations (offices, warehouses, labs, etc).
Stakeholder / Public Perception	Uncertainty around the expectations of the public, other governments, media or other stakeholders; maintaining positive public image; ensuring satisfaction and support of partners.
Strategic / Policy	Uncertainty that strategies and policies will achieve required results or that policies, directives, guidelines, legislation will not be able to adjust as necessary.
Technology	Uncertainty regarding alignment of IT infrastructure with technology and business requirements. Uncertainty of the availability and reliability of technology.

V 2

Risk Process



What NOT to do if the project is ‘slipping’

- Ignore it
- Try to hide it
- Keep on going
- Rob Peter to pay Paul
- Try to play ‘catch up’

Dealing with uncertainty

Risk management – one of the most important aspects of a project !

But mostly ignored !

Managing risk

- ‘Risk’ is the probability that an uncertain event or condition will negatively impact project performance or success
- Risk management involves
  - Identifying risks
  - Assessing risks
  - Planning risk response
  - Tracking and controlling risks

Risk Management

- Making informed decisions under conditions of uncertainty.
- The manager must balance the opportunity offered by each action against possible negative consequence of associated risks.
- Making decisions now, about future possibilities, rather than having to make them in the future.
- Being active rather than passive.

What can go wrong?

- Time overrun on particular task, e.g. INCIS(NZ Police)
- Staff illness
- Staff leaving
- Technical ‘hitch’ – need for invention
- Technology failure
- Late delivery
- Failure to meet specifications
- Budget overrun

Ways of dealing with risk (1)

- Avoiding Risk
  - Change the project plan to eliminate the risk or condition.
  - Examples:
    - Use older well-tried software or technology, rather than ‘bleeding’ edge
    - Locate power station away from fault line and the coast

Ways of dealing with risk (2)

- Mitigating Risk
  - Reduce the likelihood an adverse event will occur
  - Reducing impact of adverse event.
  - Examples:
    - Ensure good staff conditions
    - Employ multiple employees who can cover for each other
    - Build some slack into the project schedule
    - Have several projects on the go concurrently
    - Have disaster recovery plan in place

Ways of dealing with risk (3)

- Transferring Risk
  - Pay a premium to pass the risk to another party
  - Examples:
    - Take out insurance
    - Impose penalties on contractors for late delivery
    - Outsource critical elements of the project

Ways of dealing with risk (4)

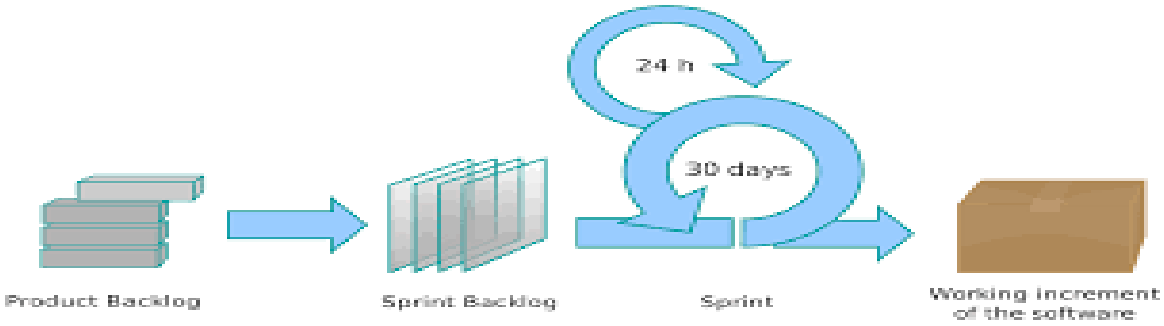
- Sharing Risk
  - Allocating risk to different parties
  - Examples:
    - Joint ventures
    - Distributed tasks
- Accepting Risk
  - Making a conscious decision to accept the risk and deal with the event if it happens

Risk reporting and communications

Risk Level	Action and Level of Involvement Required
Critical Risk	• Inform Chief Executive Officer and Board of Directors • Immediate action required
High Risk	• Inform Chief Executive Officer • Strategy Team involvement/attention is essential to manage risks – provide report to Board as appropriate
Moderate Risk	• Management mitigation and ongoing monitoring required • Inform relevant Strategy Team members
Low Risk	• Accept, but monitor risks • Manage by routine procedures within the program and site

That's where – Agile PM can help- Recap from last week

- Characteristics of being Agile
  - Short iterations leads to → Minimize risk
  - Real-time communication within teams → minimum documentation
  - Manage rapidly changing requirements



Scrum - an agile process

- SCRUM is an agile, lightweight process for managing and controlling software and product development in rapidly changing environments.
  - A way to maximize productivity of all staff
  - Team-based approach
  - Iterative, incremental process
  - Improve communication and maximize cooperation
- Benefits
  - Develop's products with rapidly changing requirements
  - Controls the chaos of conflicting interest and needs
  - Outcome driven

Computer aids for project management

Creating a Project Plan
Popular :

Microsoft “Project”

Atlassian – Jira /Confluence

Many others

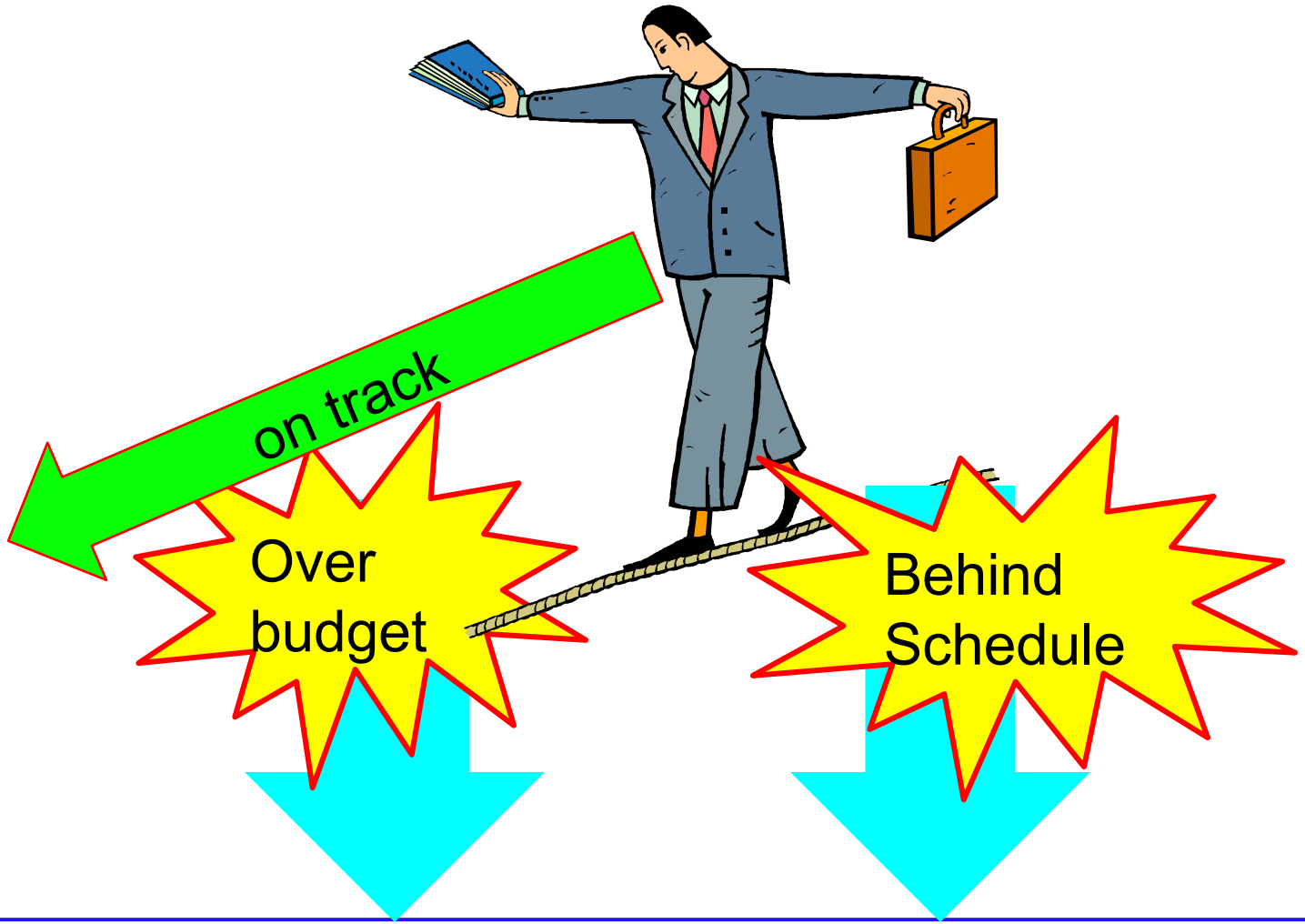
There are other software – but MS is by far the most popular

What happens when the project gets behind?

How much can you catch up?

Refresh of last week's lecture !

Managing a project is like walking a tight rope



A dash board to Make decisions !

A dashboard to report progress

2019 > Boeing 737 Max

What happened ?

Source:softwraetestingmaterial.com

A case study

A high profile case study

Fire fighting an IT project delivery
Involved Ministers /CEO's

Your designing a new $100m data centre in Ryde (Real Project !)

Your late and over budget ! – what do you do ?

Do you blame someone or do something about it?

What steps do you take to get the project back on track ?

What happened ?

Source:itp.net

Jack Ma Motivation Youtube
DO WHAT IS HARD

https://www.youtube.com/watch?v=OyGVCI8bMmE

Remember readings

Source: bodheapreap.com

Source: makeuseof.com

Next week

- Start writing your group plans
- Make sure you are in the RIGHT TEAM
- Commence your presentations to Jack Ma if you want $100K to progress your projects

Any Questions?