MONASH University

Information Technology

# FIT 3138
# Real-Time Enterprise Systems

## Lecture 9
## ERP Implementation
## – Risk Management

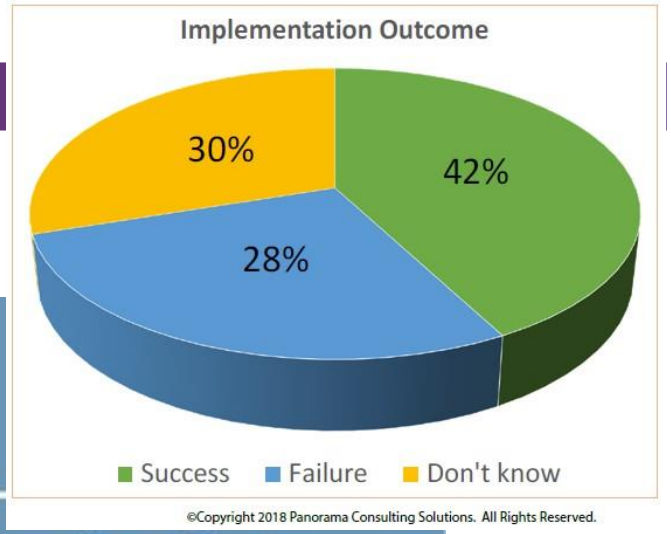
# Unit Outline

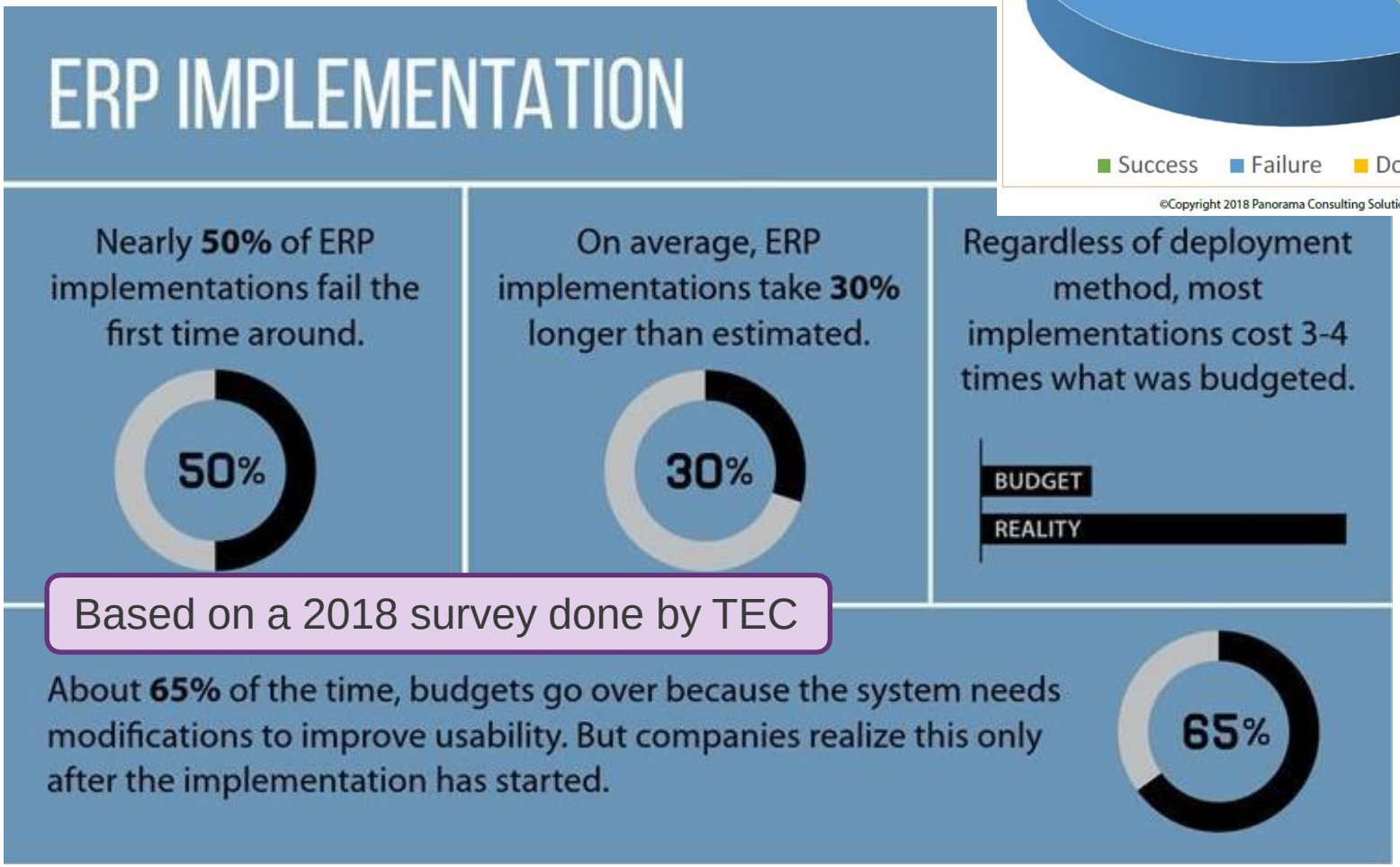
| Week | W/C | Topic | Deadline: |
|---|---|---|---|
| 1 | 25/07 | Introduction to FIT3138;<br>Introduction to Enterprise Systems | |
| 2 | 01/08 | Systems Integration - Role of ERP in Business Functions and Processes | Assignment 1 handed out |
| 3 | 08/08 | The Development of ERP Systems | |
| 4 | 15/08 | ERP in Sales and Marketing & CRM | |
| 5 | 22/08 | ERP in Production and Supply Chain Management | |
| 6 | 29/08 | Accounting in ERP Systems | |
| 7 | 05/09 | Process Modelling & Improvement | Assignment 1 due<br>Assignment 2 handed out |
| 8 | 12/09 | ERP Implementation – Life Cycle & Strategy | |
| 9 | 19/09 | ERP Implementation – Risk Management | |
| Mid-semester Break (26 Sep – 30 Sep 2022) | | | |
| 10 | 03/10 | ERP Implementation Issues: Managing Change | |
| 11 | 10/10 | Technologies supporting real-time enterprise | |
| 12 | 17/10 | Exam Review | Assignment 2 due |

# Objectives

- Reasons for ERP implementation failure
- Identify critical risks from a failed IT project (case approach)
- Actionable strategies for risk mitigation
- Discuss the warning signs that indicate an ERP Implementation Project may be in trouble
- Describe a risk management approach
- Identify the risk assessment and risk control as major elements of risk management

# From last lecture…




Based on a 2018 survey done by TEC

https://www3.technologyevaluation.com/getattachment/Content-Library/Research-TEC/2018/06/ERP-Software-Facts-Stats%E2%80%94and-Lessons-Learned/ERPFactsStats.jpg.aspx?lang=en-US

# Why IT Projects Fail – the critical factors

Common drivers of project failure - KPMG 2019

- Lack of leadership and governance
- Weak strategic alignment and business case
- Lack of change management strategy
- Poor delivery of project
- Poor legacy estate – lack of understanding of the current IT architecture or process

# Critical Success (Risk?) Factors

| Factors | Company A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Top management support | × | | | × | × | × |
| Project management | × | × | × | | | × |
| Interdepartmental communication | × | × | × | × | | × |
| User training and education | × | | × | × | × | × |
| Clear goals and objectives | × | | × | × | × | × |
| Change management plan | × | | | × | | × |
| Business process reengineering (BPR) | × | × | | × | | |
| Vendor support | × | | × | | × | |
| Use of consultants | × | × | | | | × |
| Minimal ERP customization | | × | | × | | × |
| User involvement in evaluation, modification and implementation | × | | × | × | × | × |
| Organizational culture | × | | × | | × | |

**… Absence of these factors spell RISK!**

**Selection and critical success factors in successful ERP implementation**
Beheshti, Hooshang ; Blaylock, Bruce K ; Henderson, Dale A ; Lollar, James G
Competitiveness review, 2014-08-12, Vol.24 (4), p.357-375

RMIT University

# RMIT – Project – 2001 - Just a small financial loss!!

- **The Victorian Auditor-General's Office slammed RMIT University's management over their bungled Academic Management System (AMS) IT project, identifying "fundamental failures" in project management structures.**
- The AMS, which "went live" in October 2001, was supposed to ***streamline processes*** by consolidating all of RMIT's student management activities, but instead cost the university more than AU$47 million, a figure equal to 3.7 times the original budget, according to the report.

References:

1. Gray, P. (2003) In depth: RMIT's PeopleSoft disaster
2. Gray, P. (2003). Auditor-general slams AU University's software project.

# Failed IT project

- Project Commenced Dec 1999
- Objective:
  - Replace existing student administration management systems
- Aim:
  - Integrate all RMIT' student management activities into a single consolidated system using PeopleSoft software whilst exploiting internet technologies to streamline processes
- Decision to use PeopleSoft*:
  - PeopleSoft could provide a single, integrated software platform as opposed to multiple systems

* PeopleSoft, Inc. was a company that provided human resource management systems (HRMS) and customer relationship management (CRM) software, as well as software solutions for manufacturing, financials, enterprise performance management, and student administration to large corporations, governments, and organizations. It existed as an independent corporation until its acquisition by Oracle Corporation in 2005. The PeopleSoft name and product line are now marketed by Oracle.

# Failed IT project cont/d

Go Live: Oct 2001

Anticipated cost savings

- expected savings $10m per year
- Actual - Loss  $47m

- Since going live:
  - Difficulties in billing fee paying students
  - Difficulties in issuing HECS statements
  - Delays in processing and advising students
  - Problems in meeting statutory/legal reporting
  - Shortcomings in hardware and software performance
- Organisational impact:
  - Contributed to weakened financial position of RMIT

# What went wrong: Systems Perspective

Key Findings:

- "go live date" too early*
- Technology not robust
- Business processes were not suitably identified*
- Roll-out of the system coincided with an administrative overhaul
  - Subject codes and student numbers were changed
  - Familiar conventions removed
- Mismatch between what was promised by vendors and what was delivered (Vendors oversold product)*
- Ineffective documentation
- Need to modify the key proprietary component of the PeopleSoft system selected for the AMS*
  - These systems are developed from best practices

* These items are considered critical to the successful outcome of an implementation. (CSFs)

# Consequences of Project Failure

- (Yardley, 2002)
  - Degrade business capability
  - Degrade competitive advantage
  - Increase operating costs
  - Reduce revenue earnings
  - Failure to meet critical business requirements
  - Poor levels of user satisfaction
    - Loss of staff
    - Staff will not use the system properly
  - Loss of control

# Canary in a Coal Mine

**13 warning signs that the ERP Implementation Project may be in trouble :**

1. **Not reviewing the project with the executive team on at least a bi-monthly basis.**
2. **There is no dedicated project team.**
3. **There is no training scheduled until less than 90 days before go-live.**
4. **The organisational change management plan only consists of end-user training.**
5. **No contingency budget.**
6. **Don’t have at least three iterations of conference room pilots or integration testing.**

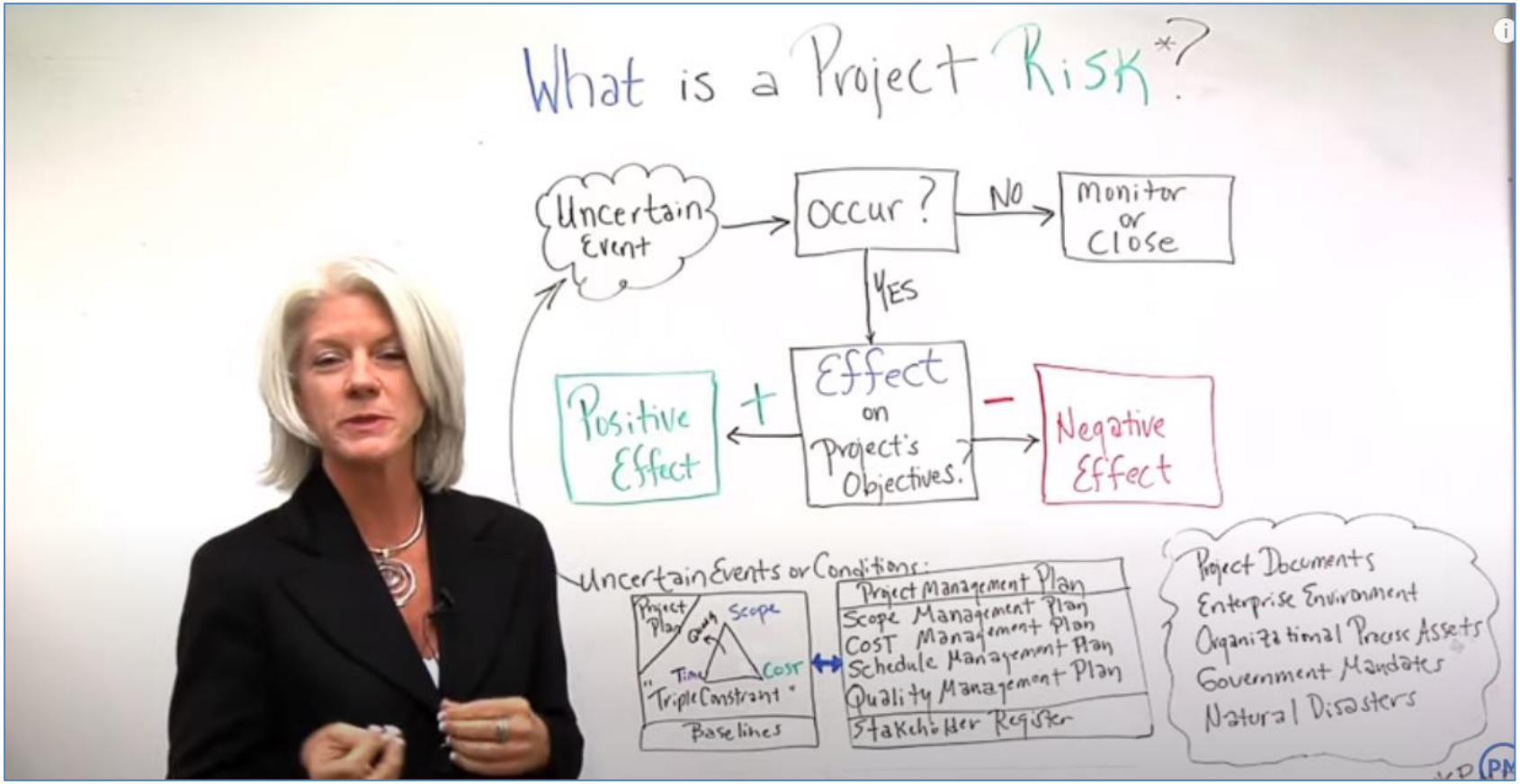
https://www.panorama-consulting.com/canary-in-a-coal-mine-signs-that-your-erp-implementation-project-may-be-in-trouble/

# Canary in a Coal Mine… continuation

7. **Budget assumes that software license costs are a majority of the total implementation costs.**
8. **Don’t have a strong program management team with at least several dozen implementations collectively under their belt.**
9. **The software techies are running the project.**
10. **Don’t have a business case, performance metrics, or a benefits realisation plan.**
11. **The definition of success is: “Just get the damn thing up and running.”**
12. **Have very little margin for error to miss customer shipments at go-live.**
13. **Will not customise the software, under any circumstances.**

https://www.panorama-consulting.com/canary-in-a-coal-mine-signs-that-your-erp-implementation-project-may-be-in-trouble/

# Project Risks and Common Problem Areas




https://youtu.be/nbhLDJkNnzY

# Project Risks arise from …..


- The nature of the technology used (‘cutting edge’, or ‘established’)
- The number of stakeholders and their experience/ understanding and stability
- The experience (or inexperience) of the project team
- The duration of the project
- Size of the project team
- Skill of the project team
- Effects of other projects
- Other commitments on the project group
- Level of management support
- Inability to manage scope creep

Risks should be “owned” by the project and stakeholders by acceptance of the business case

Risk management requires support and communication between stakeholders

# Risks and Risk Management

- Risks are the consequences of uncertainty
- Project risks =

  **Event * probability of the event occurring * consequences of the event**
- Risk is a combination of the probability of a negative event occurring and its consequences

A risk needs to be measurable A risk needs to be identifiable.

In a Project a risk may be identified as:

- Lack of skilled consultant in Logistics
- Implementation guidelines not clearly communicated…etc

How do you deal with these issues?

# Risks

- Generically, a risk is “the possibility of loss or injury”
- A general definition of project risk is an uncertainty that can have a **negative** or **positive** effect on meeting project objectives
- In an IT project a negative risk is any event that may jeopardise satisfying the objectives of the project.
- Positive risks are risks that result in a favorable outcome; sometimes called opportunities
- The goal of project risk management is to minimise potential negative risks while maximising potential positive risks
- Risks need to be identified and managed

# Risk Management

## Risk Management is defined as…

- "the process of understanding and managing the risks that the organisation is inevitably subject to in attempting to achieve its corporate objectives" (CIMA Official Terminology)

## A more integrated approach to risk management

- Risk management is an investment—costs are associated with it.
- Cost for risk management should not exceed the potential benefits
- Risk management should be ongoing and pro-active.
- Risk management has transformed from a 'department focused' approach to a holistic, co-ordinated and integrated process which manages risk throughout the organisation.
- Enterprise Risk Management is the term given to the alignment of risk management with business strategy and the embedding of a risk management culture into business operations.

# Enterprise Risk Management (ERM)

## Enterprise Risk Management (ERM)

- Defined as: "*A process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives*." COSO(2003)

## Benefits of Effective ERM

- Enhanced decision-making by integrating risks
- The resultant improvement in investor confidence and hence shareholder value
- Focus of management attention on the most significant risks
- A common language of risk management which is understood throughout the organisation
- Reduced cost of finance through effective management of risk

# Minimising Risk in projects – PMBOK Strategy

**(PMBOK 6th Edition, 2017)**

| Knowledge Areas | Project Management Process Groups | | | | |
|---|---|---|---|---|---|
| | Initiating Process Group | Planning Process Group | Executing Process Group | Monitoring and Controlling Process Group | Closing Process Group |
| **11. Project Risk Management** | | 11.1 Plan Risk Management<br>11.2 Identify Risks<br>11.3 Perform Qualitative Risk Analysis<br>11.4 Perform Quantitative Risk Analysis<br>11.5 Plan Risk Responses | 11.6 Implement Risk Responses | 11.7 Monitor Risks | |

# Formalised risk management process


Source: MSD Risk Management Process (http://projectgroundwork.org/sustainability/financial/risk.html )

# Risk Management Process

(Martin, 2000; PMBOK, 2017)


## 1. Risk Identification

- Based on previous (historical) experience with similar projects
- Develop a list of risk factors and weight according to their potential impact
- Highest risk is at the outset of the project

## 2. Risk Assessment

- The analysis and evaluation of risk through the process of identification, description and estimation to assess their potential consequences

## 3. Risk Response

- Plan responses to minimise the impact/probability of the risks
- Contingency plans

## 4. Risk Monitoring/Control

- Monitor how well the risks are mitigated and managed
- Adopt appropriate tools

# 1. Identifying Risks

- Identifying risks is the process of understanding what potential events might hurt or enhance a particular project
- Another consideration is the likelihood of advanced discovery
- Risk identification tools and techniques include:
  - Brainstorming
  - The Delphi Technique
  - Interviewing
  - SWOT analysis


Schwalbe, K.. (2015). Information Technology Project Management. (8e) Cengage Learning

# Risk Register

- The main output of the risk identification process is a list of identified risks and other information needed to begin creating a risk register
- A **risk register** is:
  - A document that contains the results of various risk management processes often presented in a table
  - A tool for documenting potential risk events and related information
- **Risk events** refer to specific, uncertain events that may occur
  - to the detriment (due to negative risk event) or
  - enhancement (due to positive risk event) of the project

# The Risk Register

## What is a 'Risk Register'

- An important and practical risk management tool
- Record risks identified in the Risk Identification process

## Laid out in tabular format with various headings:

- Risk title
- Likelihood of risk ( 1=unlikely, 5 = highly likely)
- Impact of risk should it arise (1 = low, 5 = high impact)
- Risk owners
- Date – when risk was identified
- Mitigation actions
- Overall risk rating (1 – 10)
- Further action (if any)
- "Action lead' – name of person responsible for action
- Due date – for action to be implemented
- Risk level target

# Sample Risk Register

| No. | Rank | Risk | Description | Category | Root Cause | Triggers | Potential Responses | Risk Owner | Probability | Impact | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R44 | 1 | | | | | | | | | | |
| R21 | 2 | | | | | | | | | | |
| R7 | 3 | | | | | | | | | | |

- No.: an identification number for each risk event
- Rank: a rank for each risk event
- Risk: The name of the risk event – e.g. New customer
- Description: A brief description … (e.g.: We have never done a project for this organization before and don't know too much about them. One of our company's strengths is building good customer relationships, which often leads to further projects with that customer. We might have trouble working with this customer because they are new to us.)
- Category: People/Technology/Business/ etc…(see slide 30)
- Root cause: What causes the risk to happen

# Sample Risk Register…(cont'd)

- Triggers for each risk; **triggers** are indicators or symptoms of actual risk events
- Potential responses to each risk
  - Negative risk: Transfer, Avoid, Mitigate/Reduce, Accept
  - Positive risk:
- The **risk owner** or person who will own or take responsibility for each risk
- The probability and impact of each risk occurring (which is normally given a score between 1 to 10; 1 being very low and 10 being very high)
- The status of each risk :
  - Identified/Not occurred
  - In-Process (if the risk response is being executed)
  - Closed (if the risk is resolved or no longer exist)
- Can also include a column for "Risk Score" (= probability x impact) – the risk score can be used to rank the risk.

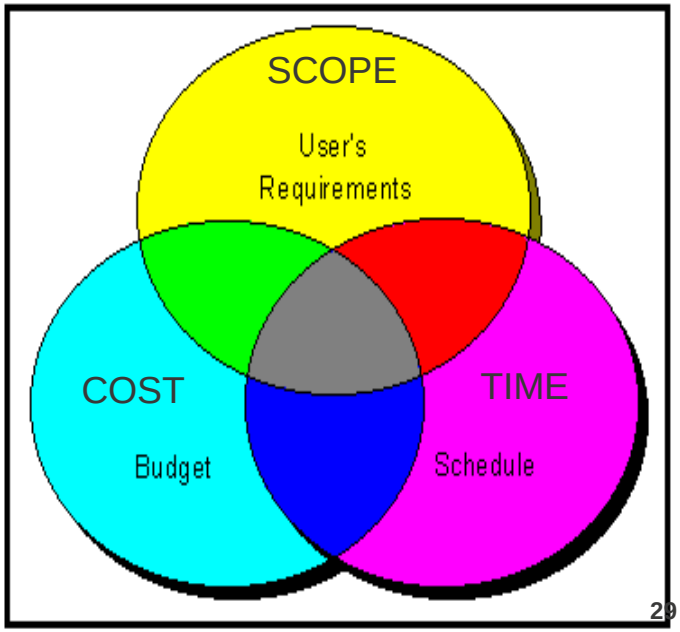
# Another risk register example

**Strategic Risk Register – May 2006**

| Ref No. | Corporate Objective | Ref. No. | Risk Description | Risk Owner | Mitigation Control | Priority | Sources of Assurance |
|---|---|---|---|---|---|---|---|
| C2 | To target resources & initiatives to overcome poverty and disadvantage | R1 | Failure to achieve equality targets & improve community cohesion. | Corporate Equalities Group<br>Environmental Services Director | 1. Regular monitoring of Corporate Equalities Plan<br>2. Level 2 fully embedded by December 2006 | M | Internal & external audit review. Consultation with minority groups. |
| | | R2 | Failure to deliver improvements in the benefits service. | CMT<br>EMT<br>OSCs<br>Cabinet | 1. Regular monitoring by TEN system<br>2. Quarterly reports to OSCs & Cabinet | H | Monitoring by DWP & BFI. Internal & external audit. |
| | | R3 | Costs of new concessionary fares scheme exceeding budget. | Assistant Director-Community Finance | 1. Monitoring of costs, as part of integrated performance management report.<br>2. Quarterly reports to OSCs & Cabinet. | M | Cabinet & OSC monitoring. Monitoring with other Warwickshire Districts. |
| | | R4 | Failure to deliver major improvements in Camp Hill – reputation risk; loss of housing. | Cabinet<br>Chief Executive | 1. Monitoring by Project Board<br>2. External project management. | H | Pride in Camp Hill monitoring.<br>Liaison with AWM & GOWM. |
| C3 | To encourage the provision of new & improved housing to meet the needs of residents | R5 | Failure to deliver continued improvements in Housing Services | Corporate Services Director<br>Assistant Director-Housing | 1. Monitoring of Improvement Plan. | M | GOWM monitoring.<br>Housing inspectorate. |
| | | R6 | Failure to achieve the 'Decent Homes' standard for private sector housing. | Corporate Services Director<br>Housing Portfolioholder | 1. Stock Condition Survey. | M | Internal & external audit review.<br>Performance indicators. |
| C6 | To work in partnership to reduce crime, disorder & the fear of crime | R7 | Failure to deliver continued improvements in community safety | Chief Executive<br>Assistant Director-Chief Executive's Office | 1. Monitoring by Safer Communities Group. | M | Annual external audit.<br>Safer Communities Partnership monitoring. |

# 2. Risk assessment

- Risk assessment is the most difficult phase
- Risk is based on uncertainty and constraint of the project requirements
  - Uncertainty – politics
  - Triple constraints (Cost, Time and Scope)
- Some constraints will be difficult to evaluate and remove
  - Culture
  - Work team environment
  - Manpower
  - Availability of skilled staff



# 5 key takeaways about assessing risk in ERP Implementation Project

1.Seek out unbiased, independent third-party resources, to conduct a formalised risk assessment throughout your implementation

2.Look at potential ERP implementation risks from all possible angles

3.Assess project risk using the most common root causes of ERP failure

4. Prioritize risks and identify risk mitigation plans

5. Recognize early warning signs of ERP implementation risk

# 3 Risk Response Strategy

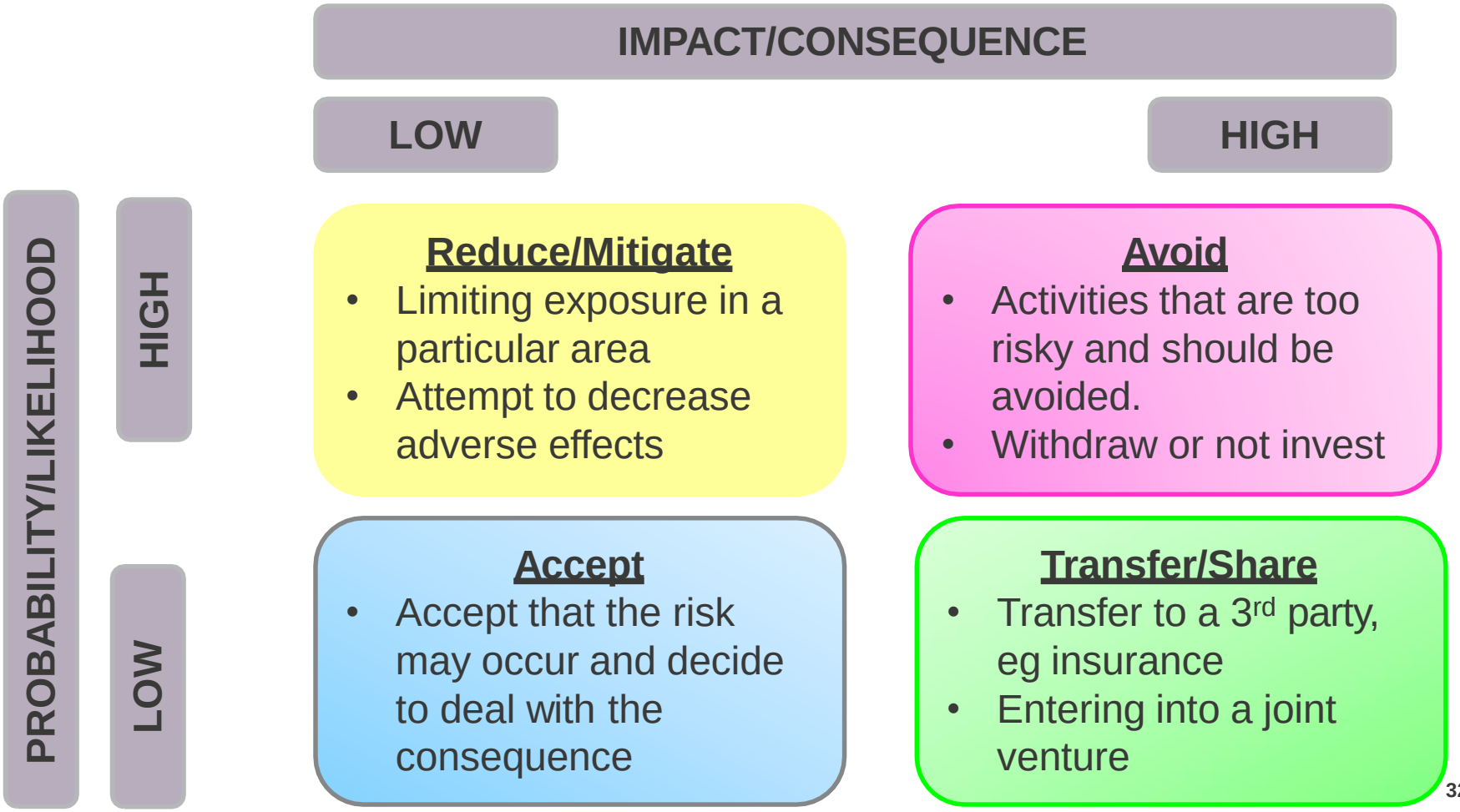
## The management of risks – to ensure that:

- Exposure to severe risks is minimised
- Unnecessary risks are avoided
- Appropriate measures of control are taken
- The balance between risk and return is appropriate

## Strategy

- **Negative Risk**
  - **Transference/Sharing**
  - **Avoidance**
  - **Reduction/mitigation**
  - **Acceptance**
- **Positive Risk**
  - **Sharing**
  - **Exploitation**
  - **Enhancement**
  - **Acceptance**

# Risk Mapping and Risk Responses



# 4 Risk Monitoring & Control

- It involves overseeing the effectiveness of risk responses, monitoring residual risks, identifying and documenting new risks, and assuring that risk management processes are followed.
- Controlling identified & evaluated risks (refer to Slide 46)
- This should be an iterative process
- Risk control is conducted for all risks categorised as high risk high consequence (Medium risks are analysed separately)
- Owners should be assigned to major risks for monitoring

# Top 10 Risk Item Tracking

| | Monthly Ranking | | | |
|---|---|---|---|---|
| **Risk Item** | **This Month** | **Last Month** | **Number of Months** | **Risk Resolution Progress** |
| Inadequate planning | 1 | 2 | 4 | Working on revis entire project |
| Poor definition of scope | 2 | 3 | 3 | Holdin pr |
| Absence of leadership | 3 | 1 | 2 | |
| Poor cost estimates | 4 | | | |
| Poor time estimate | | | | |

- Item tracking is a tool for maintaining an awareness of risk throughout the life of a project
- Establish a periodic review of the top 10 project risk items
- List the current ranking, previous ranking, number of times the risk appears on the list over a period of time, and a summary of progress made in resolving the risk item

# Risk Management in your project (assignment)

What do you see are the ‘risks’ in your project ?

- Have you identified them?
- How are you going to manage them ?
- Is ‘Not attending Team meetings’ a Risk – will it affect your Project Development?

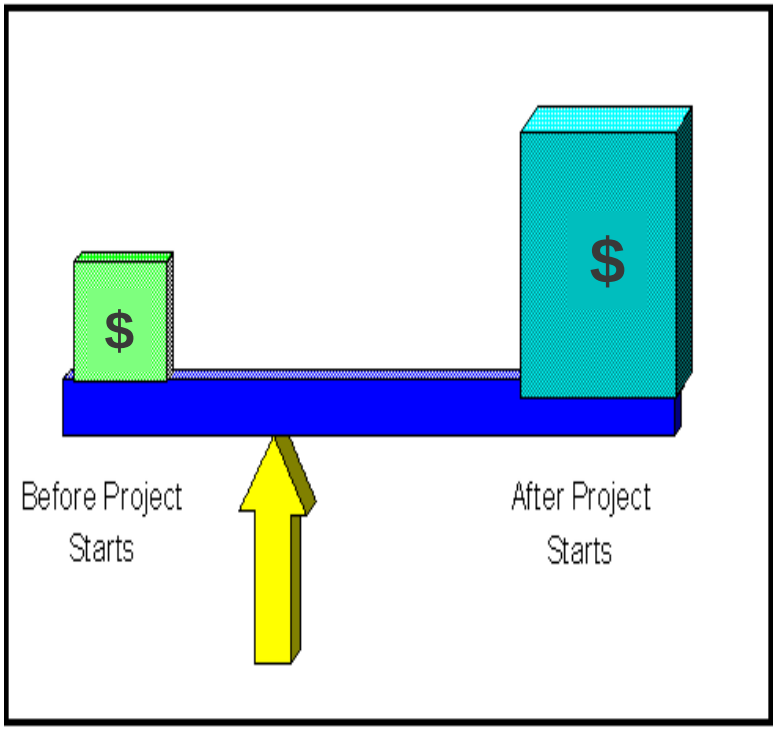
  What is your contingency plan ?

**Controlling identified & evaluated risks**

- **Actively seek to eliminate or reduce risk**
- **Monitor risk**
  - **Set up warning systems**
  - **Carry out action or contingency plans when required**
  - **Report on status of risk**

# Cost of Fixing Project risks

- Money invested in reducing risk in the early stages of a project is money well invested.
- Any risks incurred during the project have to be diagnosed, and fixed.
- Using risk control as an iterative process will help to manage major risks and thereby cut cost blowouts



# Summary

- Why IT project failed?
- The critical success factors for an ERP implementation … (or risks in the absence of these factors).
- The consequence of a project (ERP implementation) failure.
- Identify critical risks from a failed IT project (case approach)
  - What went wrong
    - system or project management perspective
- Discuss the Top 5 keys to successful ERP Implementation
- Discuss the warning signs that indicate an ERP Implementation Project may be in trouble

# Summary (cont'd.)

- Describe a risk management approach
- Identify the risk assessment and risk control as major elements of risk management
- Describe a risk matrix and identify how it is used in risk assessment
- The use of Risk Map and Risk Register
- The importance of risk monitoring and control to ensure the effectiveness of risk responses, monitoring residual risks, identifying and documenting new risks, and assuring that risk management processes are followed.


## End of Lecture 9

***References***:


- Beheshti et al (2014). Selection and critical success factors in successful ERP implementation, Competitiveness Review, 2014-08-12, Vol.24 (4), p.357-375
- CIMA (2008). Introduction to Managing Risk. CIMA Technical Guide. London and New York: IFAC and CIMA. Available from: www.cimaglobal.com/technicalguides
- Gray, P. (2003). In depth: RMIT's PeopleSoft disaster, ZDNet Australia http://www.zdnet.com.au/in-depth-rmit-s-peoplesoftdisaster-120279146.htm (accessed 5th November 2010)
- KPMG (2019). Common Drivers of Project Failure. https://home.kpmg/uk/en/home/insights/2019/02/common-drivers-of-project-failure--what-can-internal-audit-do-.html
- MSD (2010). Risk Management Process. http://projectgroundwork.org/sustainability/financial/risk.html
- Panorama Consulting group:
  - Signs that your ERP implementation project may be in trouble. (2010). Located at: https://www.panorama-consulting.com/canary-in-a-coal-mine-signs-that-your-erp-implementation-project-may-be-in-trouble/
  - Risk: Its impact on your ERP implementation project. (2018). Located at: https://www.panorama-consulting.com/risk-its-impact-on-your-erp-implementation-project/
- Project Management Institute, Inc. (2017). A guide to the Project Management Body of Knowledge (PMBOK) (6th Edition), Newtown Square, Pennsylvania.
- Schwalbe, K. (2004) '*Information Technology Project Management*', Thomson Course Technology – 3rd (or 4th) Edition, Chapter 11
- TEC. (2018). Facts and Stats on ERP Systems. Technology Evaluation Centers. Located at: https://www3.technologyevaluation.com/getattachment/Content-Library/Research-TEC/2018/06/ERP-Software-Facts-Stats%E2%80%94and-Lessons-Learned/ERPFactsStats.jpg.aspx?lang=en-US
- Yardley, D. (2002) '*Successful IT Project Delivery*', Addison-Wesley, UK. Chapter 6