

# RISK MANAGEMENT

# Risk Management.....

- *Risk* = some adverse circumstance that may happen and affect negatively the project, the product, and/or the business
- Categories of risk:
  - Project risks
  - Product risks
  - Business risks
- *Risk management* means anticipating risks and preparing plans to reduce their effect

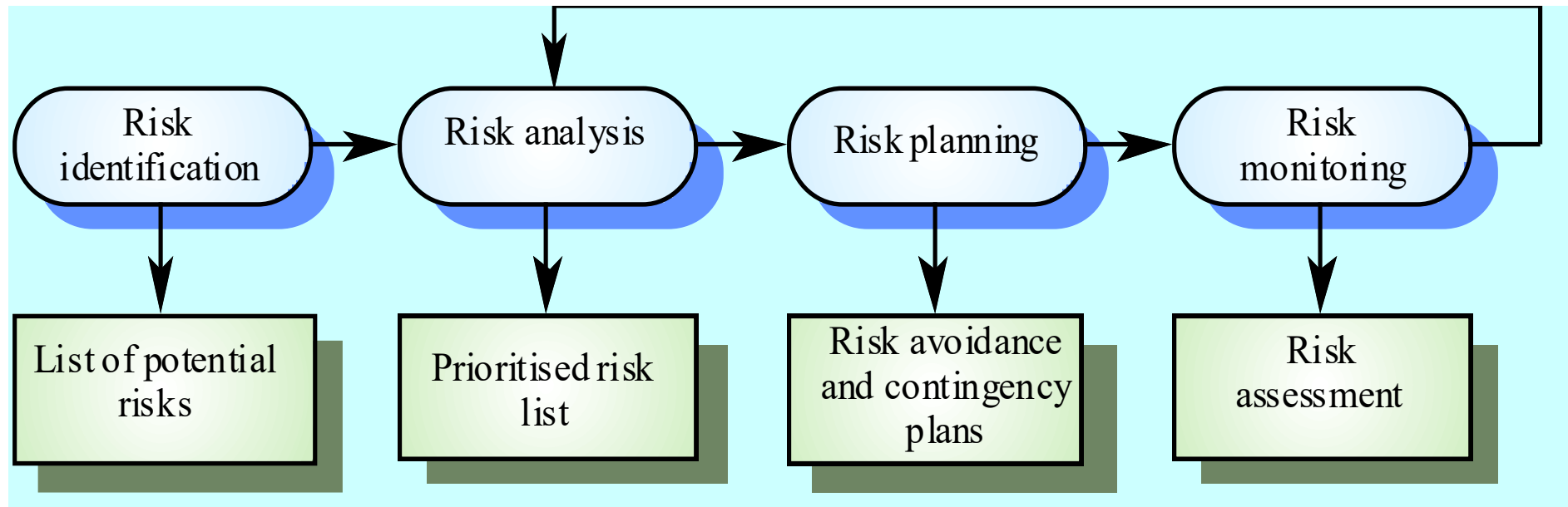
# .Risk Management.....

- Examples of risks in the software process [Fig. 5.9, SE-8]

Risk	Affects	Description
Staff turnover	Project	Experienced staff will leave the project before it is finished.
Management change	Project	There will be a change of organisational management with different priorities.
Hardware unavailability	Project	Hardware that is essential for the project will not be delivered on schedule.
Requirements change	Project and product	There will be a larger number of changes to the requirements than anticipated.
Specification delays	Project and product	Specifications of essential interfaces are not available on schedule
Size underestimate	Project and product	The size of the system has been underestimated.
CASE tool under-performance	Product	CASE tools which support the project do not perform as anticipated
Technology change	Business	The underlying technology on which the system is built is superseded by new technology.
Product competition	Business	A competitive product is marketed before the system is completed.

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- The risk management activities [Fig. 5.10, SE-8]



# ...Risk Management....

- Types of risk in *risk identification* [Fig. 5.11, SE-8]

Risk type	Potential indicators
Technology	Late delivery of hardware or support software, many reported technology problems
People	Poor staff morale, poor relationships amongst team member, job availability
Organisational	Organisational gossip, lack of action by senior management
Tools	Reluctance by team members to use tools, complaints about CASE tools, demands for higher-powered workstations
Requirements	Many requirements change requests, customer complaints
Estimation	Failure to meet agreed schedule, failure to clear reported defects

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- *Risk analysis:*
  - Estimate risk probability:
    - Very low (< 10%)
    - Low (10-25%)
    - Moderate (25-50%)
    - High (50-75%)
    - Very high (> 75%)
  - Establish risk seriousness:
    - Insignificant
    - Tolerable
    - Serious
    - Catastrophic

## .....Risk Management..

- *Risk planning* means preparing a strategy to deal with each of the risks identified
- Classes of strategies:
  - Avoidance strategies: the probability of the risk will be diminished
  - Minimization strategies: the effect of the risk will be reduced
  - Contingency strategies: plans for the worst case scenarios

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- Examples of risk management strategies [Fig. 5.13, SE-8]

Risk	Strategy
Organisational financial problems	Prepare a briefing document for senior management showing how the project is making a very important contribution to the goals of the business.
Recruitment problems	Alert customer of potential difficulties and the possibility of delays, investigate buying-in components.
Staff illness	Reorganise team so that there is more overlap of work and people therefore understand each other's jobs.
Defective components	Replace potentially defective components with bought-in components of known reliability.

Risk	Strategy
Requirements changes	Derive traceability information to assess requirements change impact, maximise information hiding in the design.
Organisational restructuring	Prepare a briefing document for senior management showing how the project is making a very important contribution to the goals of the business.
Database performance	Investigate the possibility of buying a higher-performance database.
Underestimated development time	Investigate buying in components, investigate use of a program generator



# .....Risk Management

- *Risk monitoring:*
  - Frequently re-assess the risks
    - Changes in risk probability?
    - Changes in risk gravity?
  - Take into consideration risk factors
  - Discuss key risks at each management project progress meeting