Software Risk Management

- We Software developers are extremely optimists.
- We assume, everything will go exactly as planned.
- Other view
  - not possible to predict what is going to happen ?

  Software surprises
  - Never good news

Software Project Planning

Risk management is required to reduce this surprise factor

Dealing with concern before it becomes a crisis.

Quantify probability of failure & consequences of failure.

What is risk ?

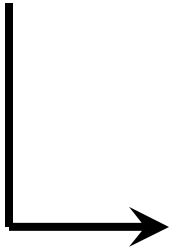
Tomorrow's problems are today's risks.

"Risk is a problem that may cause some loss or threaten the success of the project, but which has not happened yet".

Software Project Planning

Risk management is the process of identifying addressing and eliminating these problems before they can damage the project.

Current problems &



Potential Problems

Typical Software Risk

Capers Jones has identified the top five risk factors that threaten projects in different applications.

1. Dependencies on outside agencies or factors.
   - Availability of trained, experienced persons
   - Inter group dependencies
   - Customer-Furnished items or information
   - Internal & external subcontractor relationships

Software Project Planning

2. Requirement issues

Uncertain requirements

Wrong product

or

Right product badly

Either situation results in unpleasant surprises and unhappy customers.

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- Lack of clear product vision
- Lack of agreement on product requirements
- Unprioritized requirements
- New market with uncertain needs
- Rapidly changing requirements
- Inadequate Impact analysis of requirements changes

3. Management Issues

Project managers usually write the risk management plans, and most people do not wish to air their weaknesses in public.

- Inadequate planning
- Inadequate visibility into actual project status
- Unclear project ownership and decision making
- Staff personality conflicts
- Unrealistic expectation
- Poor communication

4. Lack of knowledge

- Inadequate training
- Poor understanding of methods, tools, and techniques
- Inadequate application domain experience
- New Technologies
- Ineffective, poorly documented or neglected processes

5. Other risk categories

- Unavailability of adequate testing facilities
- Turnover of essential personnel
- Unachievable performance requirements
- Technical approaches that may not work

Risk Management Activities

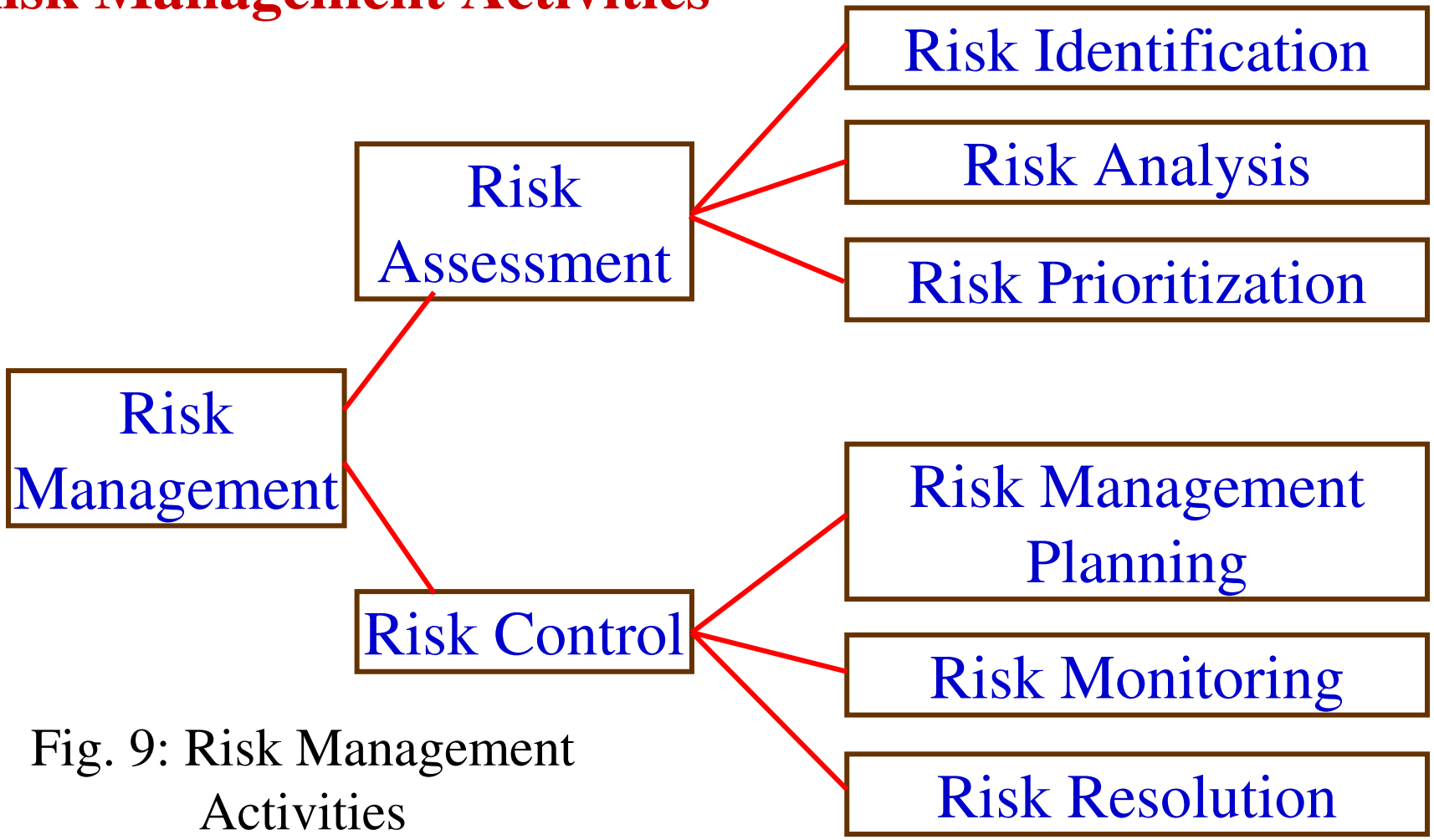

Fig. 9: Risk Management Activities

Risk Assessment

Identification of risks

Risk analysis involves examining how project outcomes might change with modification of risk input variables.

Risk prioritization focus for severe risks.

Risk exposure: It is the product of the probability of incurring a loss due to the risk and the potential magnitude of that loss.

Software Project Planning

Another way of handling risk is the risk avoidance. Do not do the risky things! We may avoid risks by not undertaking certain projects, or by relying on proven rather than cutting edge technologies.

Risk Control

Risk Management Planning produces a plan for dealing with each significant risks.

- Record decision in the plan.

Risk resolution is the execution of the plans of dealing with each risk.