IT Project Management

Lecture 2-6 – Risk Management

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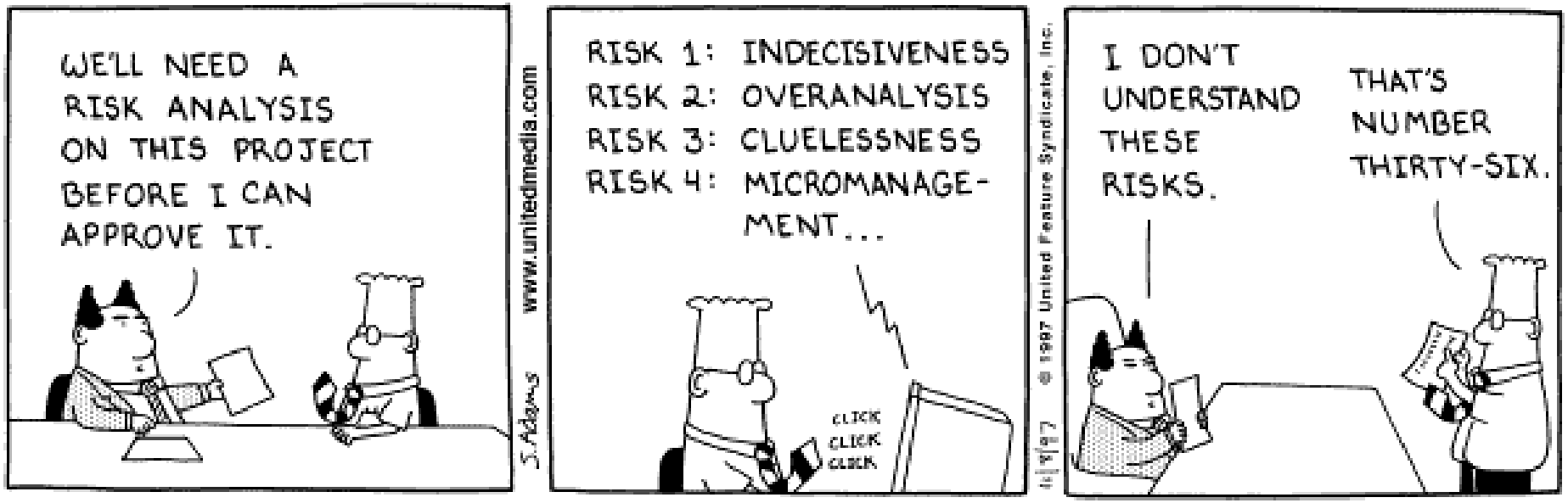

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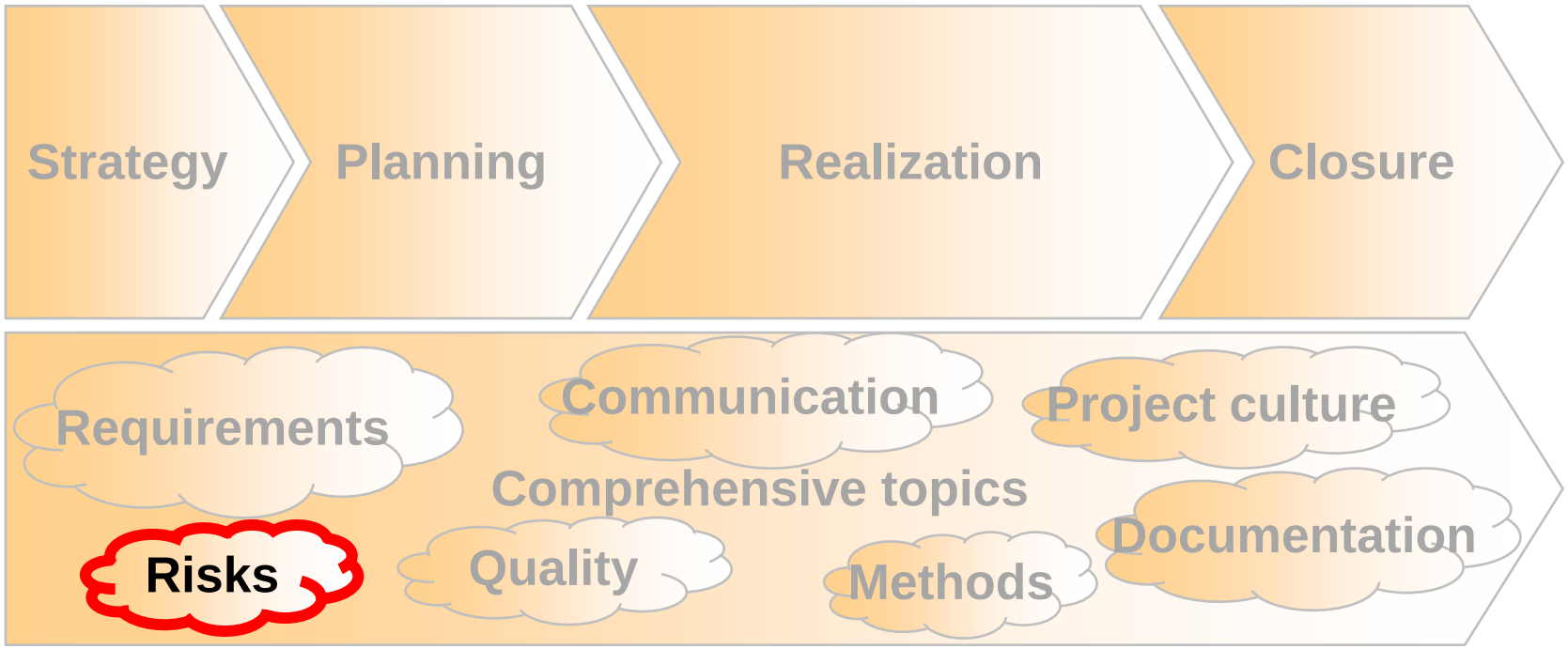
Risk Management



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Introduction

- The worst risks are the risks you don’t know
- A simple risk management is often sufficient
  … even better than no risk management
- Complex risk management is often required in
  - financial projects
  - health industry

Definitions

- ***Risk management***:
  Exclusion, avoidance, or mitigation of project risks [DIN 69901-5:2009-01].

- Scope:
  - Identification of risks
  - Evaluation of risks
  - Taking actions to mitigate risks

Objective of Risk Management

- Risks are depending on the context, e.g., software testing [ISTQB20G]
  - Differentiation between
    - ***Product risk***:
      A risk impacting the quality of a product.
    - ***Project risk***:
      A risk that impacts project success.
  - Resulting proceeding: Risk based testing: Testing in which the management, selection, prioritization, and use of testing activities and resources are based on corresponding risk types and risk levels.

Objective of Risk Management

- Project risks – examples
  - Organizational factors
    - Skill, training and staff shortages
    - Personnel issues
    - Political issues
  - Technical issues
    - Problems in defining the right requirements
    - Test environment not ready on time
    - Low quality of the design, code, configuration data, test data and tests
  - Supplier issues
    - Failure of a third party
    - Contractual issues

Objective of Risk Management

- Product risks – examples
  - The potential that the software / hardware could cause harm to an individual or company.
  - Software that does not perform its intended functions.
  - Poor software characteristics
    Functionality, reliability, usability and performance.
  - Poor data integrity and quality
    Data migration issues, data conversion problems, data transport problems, violation of data standards.
- Product risks are used to decide where to start testing and where to test more

Objective of Risk Management

- 1st goal: Avoiding project crisis and providing risks
- Basis: Project scenarios based on environmental analysis
  - Goal scenario
  - Best case
  - Worst case
- Planning activities and creating alternative project plans

Objective of Risk Management

- 2nd goal: Managing risks
- Keep in mind:
  - Most critical are the unknown risks! That's why:
  - Everyone must be able to inform about risks easily
- Handling risks: Activities to
  - decrease the probability of the incidence of the risk
  - reduce the estimated damage (impact) of the risk

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Calculating Risks

- Proposal how to quantify risks
  - Probability of incidence *P*
    - 3 = high
    - 2 = possible
    - 1 = low
  - Impact on project if risk occurs *I*
    - 3 = very critical
    - 2 = critical
    - 1 = less critical
  - Risk = Probability of incidence * Estimated impact = *P * I*
  - Possible values:
    - **9 and 6 = high risks**
    - **4 and 3 = medium risks**
    - **2 and 1 = low risks**

Calculating Risks

- Example

	Risk description				Quantification			Mitigation	
Id	Risk identification	Potential cause	Contact person	Date	P	I	Risk = P*I	Status	Actions
1	Delay of delivery	Author sick	Uwe	27.02.	2	2	4	*open*	Regular swimming
2	Number of sold books low	Book unknown	Daud	03.04.	1	2	2	in progress	Advertisment

Abbr.	Explanation	Values
Id	Identity	
Quantification:		
P	Probability of incidence	1 = low
		2 = medium
		3 = high
I	Estimated impact	1 = less critical
		2 = critical
		3 = very critical
Risk	= Probability of incidence *	1 or 2 = low risk
	Estimated impact	3 or 4 = medium risk
		6 or 9 = high risk

Proceeding

- When should you do risk management?
  - Start as soon as possible
  - Repeat continuously, for example
    - once a month
    - regularly at the end of project meetings
- Hint: Top 10 risks
  Focus on the top 10 highest risks

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Summary

- Differentiate between product risks and project risks
- Risk R = probability P * estimated impact I
- Example for risk levels
  - high risk
  - medium risk
  - low risk
- Risk management activities
  - to minimize the likelihood of a product failure,
  - to mitigate the estimated impact,
  - should start with high risks.