Wiki Entry

Risks and Risk Mitigation

Task:

> Read the articles by Verner et al (2014) and Anton & Nucu (2020) and then answer the following questions:
> - What are the main risks that the authors identify? How do these fit into the traditional SDLC model?
> - Which of the frameworks discussed in the Unit 3 lecturecast would you use to capture and categorise the risks?

Answer:

Anton and Nucu (2020) and Verner et al. (2014) provide insights into the main risks organizations face in their respective domains—Enterprise Risk Management (ERM) and Global Software Development (GSD)—and how these risks map onto the traditional Software Development Life Cycle (SDLC) model.

Main Risks Identified:

Anton and Nucu (2020) highlight five main types of risk in the context of ERM:

- Strategic Risks, which affect the organization's ability to achieve strategic goals,

- Operational Risks from internal processes and human factors,

- Financial Risks related to potential financial losses,

- Compliance Risks arising from failures to adhere to legal or regulatory requirements,

- Reputational Risks that could harm an organization's public image.

Verner et al. (2014) identify the following key risks in the context of GSD:

- Requirements Engineering Risks, like cultural differences and unclear communication,

- Software Development Process Risks, such as misalignment in development processes,

- Architectural Design Risks that arise from poor system architecture,

- Configuration Management Risks, often related to different development tools or processes used by teams, and

- Project Management Risks, including coordination and infrastructure compatibility issues.

Mapping Risks to the SDLC:

In the traditional SDLC, risks from Anton and Nucu (2020) can be categorized as follows:

- Strategic Risks are considered during the Planning Phase, where project feasibility and alignment with business goals are evaluated.

- Operational and Compliance Risks fit into the Analysis and Design Phases, as these stages assess regulatory requirements and system specifications.

- Financial Risks influence the Design Phase, where cost-effectiveness and budget considerations shape the system.

- Operational Risks are relevant during the Implementation Phase, where system integration is critical.

- Reputational Risks are monitored throughout the Maintenance Phase to ensure the system continues to meet performance and compliance standards.

For Verner et al. (2014), the GSD-specific risks align with the SDLC as follows:

- Requirements Engineering Risks directly affect the Requirements Phase, causing confusion and rework during analysis.

- Architectural Design Risks influence the Design Phase, where poor architecture can hinder integration and scalability.

- Software Development Process Risks impact the Implementation Phase, particularly in coding and development.

- Configuration Management Risks pose challenges in the Testing Phase, especially when tools and processes differ across distributed teams.

- Project Management Risks influence the Maintenance Phase, as poor planning or coordination can disrupt long-term system support.

In both studies, these risks align well with the SDLC model, affecting different stages of the project lifecycle based on their nature and timing within the process. While Anton and Nucu (2020) focus on high-level organizational risks, Verner et al. (2014) address practical risks tied to global software development practices.

References:

Anton, G. & Nucu, A. (2020). Enterprise Risk Management: A Literature Review and Agenda for Future Research. Journal of Risk and Financial Management 13(11): 281.

Verner, M., Brereton, P., Kitchenham, A., Turner, M. & Niazi, M. (2014) Risks and risk mitigation in global software development: A tertiary study. Information and Software Technology 56(1):54–78.