**Unit 4: Alternative Perspective on Risk and SDLC**

**In this unit we shall:**

* Review some studies around risk and its impact on the SDLC.
* Discuss the different risks that can affect each stage of the SDLC.
* Discuss possible mitigations for the most common risks.

**On completion of this unit, you will be able to:**

* Explain the differences between common studies of risk and the SDLC.
* Describe the most common risks encountered at each phase of the SDLC.
* Propose some mitigations for the most common risks.

**Reflection**

There are five broad categories that may be used to categorize the possible dangers that may be encountered. A risk-benefit analysis will be carried out as part of the review process by Study Compliance Services and the CPHS/IRB. This study will include contrasting the potential downsides of the research with its potential positive outcomes. Researchers are obligated to practice safe behavior to limit the risk of encountering any potential risks. The risk types which are included in it are Physical risks, Social/Economic risks, psychological risks, legal risk, and loss of confidentiality (research.uoregon.edu et. al.; Sahu, et. al., 2014)

To better operations, every one of firms depends on software applications built for business-to-business contacts, which exposes them to a broad array of threats. Risks such as security, availability, recoverability, performance, scalability, and compliance are mentioned in this area. These risks are related with systems that are mission vital and face the internet. During the design of the system, a lack of knowledge in the areas of security and privacy, as well as consideration of those areas, is typically the principal cause of these threats. Overinvestment and underinvestment in development controls are the outcomes of previously unstructured deployments of risk mitigation techniques across the systems development lifecycle. There are a few firms out there that state they apply a risk-based approach that incorporates cost-effective levels of risk mitigation that are suitable with the risk tolerance levels of the company. The effort required to establish a security architecture, a framework inside the systems development lifecycle, a proper coding curriculum, and training (Bardin, J. et. al., 2010), (Maheshwari, et. al., 2016)

The software development life cycle (SDLC) is vulnerable to risks from the initiation of the project to the final acceptance of the software product. Every step of the software development life cycle (SDLC) is susceptible to a distinct set of risks that might prohibit the effective completion of the software creation process. To effectively manage these risks, a thorough understanding of the software development process's difficulties, hazards, and contributing variables is required (Hijazi, et. al., 2014). The risk that is mostly identified in each phase is shown below in the Table 1.

Table 1: Risk Factors and Description

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| **Risk Factor** | **Description** |
| Time, cost, scope, and other resources were underestimated for the project. | To effectively complete the project, it may be difficult for project managers to estimate the time, cost, scope, and other resources that will be necessary. Therefore, a project's timeframe, budget, scope, and resources will all be too optimistic, which will almost always lead to failure. |
| Unrealistic Timeline | It's likely that the project may take longer than planned to complete than was originally agreed upon for its completion date. In most cases, project managers set unrealistic time constraints and exorbitant demands on the developers, expecting them to deliver on time, but in fact this nearly never happens. |
| Unrealistic Budget | The predicted budget is heavily reliant on the amount of time, effort, and resources that are really required to complete the project (Shahzad & Iqbal, 2007). Because of this difficulty, the project may run out of money before the completion of the SDLC phase, and hence be cancelled. |
| An undefined scope of work. | The project scope, which encompasses the project's size, goals, and needs, is the most important task of a qualified project manager. It is common for project managers to have difficulty pinpointing precisely what the project's goals are. Therefore, many crucial features may be neglected, while other, less important ones may be taken into account; in any case, project failure is an inevitable conclusion. |
| Inadequate resources | The resources at hand (people, tools, and technology) may not be sufficient to complete the job. If the project necessitates the adoption of newer technologies, the system cannot be constructed with the available technology at this time. The authors of the concept might be placed in jeopardy of having to cope with the implications of fast technology growth if similar efforts are offered. |

To mitigate these risks, we have to following some proper set of rules and standards. We must harden with the requirement, discuss all the requirements with client before starting the project and all other function and non-functional requirements too.

**References**

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