Title	SWOT Analysis
Version	1.0
Author	Juan Manuel Noriega Hernández
Date	23/03/2023
Comments	

SWOT Analysis

Introduction

The following SWOT analysis aims to assess the strengths, weaknesses, opportunities, and threats associated with three change requests for a software development project. CR1 involves the implementation of a new database system, CR2 proposes the addition of new features to the existing system, and CR3 requires the use of a new open-source numerical package. By analyzing each change request from multiple perspectives, including technical, human resource and timeline, and financial, we can identify potential risks and benefits associated with each change request. This analysis will help stakeholders make informed decisions about the feasibility and impact of implementing each change request and develop strategies to mitigate any risks that may arise during the development process.

CR1

Strengths:

- Implementing CR1 will ensure compliance with the new government law on quality assurance of simulation software.
- Testing the software with a larger dataset will increase the accuracy of the simulation, potentially improving customer satisfaction and increasing sales.
- Providing the required samples and reports to the government IT office could increase transparency and trust in the company and its software.

Weaknesses:

- Implementing CR1 could potentially delay the release of software updates as it requires additional testing and approval time.
- Testing with a larger dataset may require additional resources and expertise, potentially increasing costs.
- Failure to comply with the new government law could result in legal consequences and damage to the company's reputation.

Opportunities

- The company can use this opportunity to assess and improve the current simulation software to meet the new government law and gain a competitive advantage in the market.

Threats

- The costs associated with implementing CR1 could be a financial burden on the company, especially if resources are not available in-house and need to be outsourced.

- The new government law may become stricter in the future, making it even more difficult for the company to comply.

CR2

Strengths:

- Implementing the requested simulation methods will increase the system's capabilities and potentially attract more users.

Weaknesses:

- Unclear requirements and technical challenges associated with implementing the Montecarlo simulations, simulations of solids and liquids, and plasma simulations.
- Implementing all the requested simulations could significantly increase the system's size and complexity, increasing the risk associated with the project's incremental growth.
- Additional human resources and technical expertise will be required.

Opportunities:

- Increasing the number of users for the software.
- Expanding the capabilities of the system.

Threats:

- Technical uncertainties and timeline constraints associated with implementing this CR.
- Financial uncertainty and potential budget overruns.
- Potential negative impact on the project's timeline and budget if the implementation proves more difficult than anticipated.

CR3

Strengths:

- The open-source numerical package requested by the client can significantly reduce implementation and testing time, potentially leading to cost savings in the long run.
- The fact that the package is open-source means that there are no licensing costs, and different versions of the package may be available, providing flexibility in case compatibility issues arise.

Weaknesses:

- The learning curve associated with the new numerical package could take at least a week, requiring additional training for the development team, which may result in upfront costs.
- The compatibility analysis between the new package and the current system design must be performed thoroughly to prevent unexpected problems and delays in the development process.

Opportunities:

- The adoption of the new numerical package may allow developers to focus on other critical aspects of the system, potentially reducing the overall risk for the project.
- If the package is well-suited to the system design, the savings in development and testing time may outweigh the costs of the additional training required.

Threats:

- The new numerical package may not be well-suited to the current system design, resulting in compatibility issues and potential delays in the development process.
- The upfront costs associated with the additional training required for the development team may strain the project budget.