

CSE 563 Project Individual Report Number 1

Krishnaprasad Palamattam Aji

Team 19

Team Members:

Krishnaprasad Palamattam Aji

Malin Tan

Varun Menon

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1. Executive Summary

1.1. Problem Statement

- A small manufacturing firm needs a set of tools to efficiently track their projects and the effort put in by their employees when it came to competing with larger firms for fixed-fee contracts and multi-year support.
- This needs accurate effort estimation and a lack of such measures could result in employees working long hours which could be costly and counterproductive.
- The NDSS has already provided a custom Excel solution based on Visual Basic that provided Excel sheet tabs which look like an application interface rather than providing an interface.
- Although the leadership team remains content with the solution, it is clear with the business growing and times changing, the application also needs a revamp.
- The major issues identified to rectify include ensuring employee privacy, providing confidential information security and better support for enterprise scaled agile projects.

1.2. Proposed Solution

- A new EffortLogger application needs to be built in such a way that employee privacy is protected and is in accordance with state laws.
- The new application needs to be immune to security threats while also providing an enterprise-scale support for agile with quality.

1.3. Value

- With the proposed application we will provide automated performance data collection which will address the employees' concern of improper use of their personal performance data.
- The application shall be immune to known threats while taking a proactive approach to protect the firm's data while also being able to support enterprise scale agile.

1.4. Next Steps

- Exploring current best practices to address the new customer needs including research on data collection and analysis with privacy, secure software development and agile project management.
- Developing a prototype of the new solution and validating it with the stakeholders.

2. Customer Problem

2.1. Key Stakeholders

The key stakeholders are the customer's leadership team which includes the performance improvement team and the first level supervisors and their employees.

- The customer's leadership team is concerned about
 - Employee privacy protection
 - Confidential information security
 - Enterprise-scale agile support
- The employees are concerned about
 - Inappropriate usage of personal performance data
 - Personal information privacy

2.2. Stakeholders' needs

The stakeholders have the following needs

- Privacy
 - The individual effort and defect reports should not be used to single out specific individuals.
 - If there are not enough reports to hide the identity of anyone involved, access to such data should be restricted.
- Transparency
 - The stakeholders want the process flow of information to be transparent and how privacy is ensured must be explained in a way that is understood to all.
- Improvement
 - All individual effort and defect reports should have identifying information about the individuals involved so that it can be used by the performance improvement team to improve the firm's processes.
- Functionality
 - The stakeholders want the EffortLogger to have more functionality and be easy to use. They want it to be able to support planning poker sessions and have suggested a two-step process.
 - The first is to narrow down the historical data related to the project prior to the poker-planning sessions. T
 - The second is to have a way to assign weights to the narrowed down items based on their relevance to the project to calculate a weighted average.
 - The stakeholder wants the EffortLogger to provide insights into the data during poker planning sessions when certain estimates are significantly larger or smaller than the rest of the team and individuals are made to explain the reason for such a value.
 - They also want the application to generate stylized planning poker cards that can be shared with the whole team.

2.3. Solution

The EffortLogger has to be address the above needs of all the stakeholders.

- It must protect the privacy of all the employees while providing data to improve the company's processes.

3. Concept of Operations

3.1. Introduction

The new EffortLogger is an upgrade to an existing EffortLogger application that will be used to log the effort and defects of employees in a firm while ensuring privacy and providing security.

3.1.1. Project Description

- **Background**

- A small manufacturing firm needs a set of tools to efficiently track their projects and the effort put in by their employees when it came to competing with larger firms for fixed-fee contracts and multi-year support.
- NDSS has already provided a solution that supports effort and defect tracking of employees in the firm.
- Although the leadership team of the firm is content with the existing application it is clear the application needs a revamp with business growth.
- The major issues identified to rectify include ensuring employee privacy, providing confidential information security and better support for enterprise scaled agile projects.

- **Assumptions and Constraints**

- The employees are willing to submit their effort and defect reports.
- The data entered into the EffortLogger is accurate.
- The employees follow best practices to ensure protection against security threats.

3.1.2. Overview of the Envisioned System

- **Overview**

- The EffortLogger will be a web application that tracks the effort and defect reports of employees.
- The EffortLogger will be designed to protect the privacy of employees, provide confidential information security and support enterprise-scale agile.

- **System Scope**
 - Let employees submit effort and defect reports.
 - Protect employee privacy by removing identifiers from reports that are accessed.
 - Provide stylized cards during planning poker

3.2. Description of Envisioned System

The envisioned system of EffortLogger is a web application that will help to track the effort and defect reports of employees in a firm while providing additional features to support enterprise-scale agile.

3.2.1. Needs, Goals and Objectives of Envisioned System

Needs and Goals

- The firm needs to track the effort and defect reports of its employees.
- The firm needs the application to protect the privacy of its employees while providing confidential information security.
- The firms needs the application to provide insights into the data to improve its processes.

Objectives

- Track employee effort and defect reports.
- Provide insights into data to improve firm processes.
- Provide employee privacy and personal information protection.
- Provide customized poker cards to assist in poker-planning sessions.

3.2.2. Overview of System and Key Elements

- The system will be easy to use with a simple interface and proper documentation on how to use the system
- The system will be scalable to support the needs of the firm as it grows
- The system will be secure to protect the private and confidential information
- The system will ensure the anonymity of individuals in the data collected
- The system will show insights into the data collected to identify trends and patterns
- The system will provide stylized poker cards to help with poker-planning sessions

3.2.3. Interfaces

- **User interface:** The user will have to enter effort and defect reports using this interface
- **Poker-planning interface:** This interface will let teams estimate story points/efforts required for projects
- **Reporting interface:** This interface will allow supervisors to view trends and graphs of effort and defect data

3.2.4. Modes of Operations

- **Data Entry Mode:** This will allow users to submit effort and defect reports
- **Data Analysis Mode:** This mode lets supervisors to view trends and graphs of effort and defect data
- **Planning poker Mode:** will let teams collaborate and estimate story points/efforts required for projects

3.2.5. Proposed Capabilities

- The system will be easy to use with a simple interface and proper documentation on how to use the system
- The system will be scalable to support the needs of the firm as it grows
- The system will be secure to protect the private and confidential information
- The system will ensure the anonymity of individuals in the data collected
- The system will show insights into the data collected to identify trends and patterns
- The system will provide stylized poker cards to help with poker-planning sessions

3.3. Physical Environment

- Since the EffortLogger will be a web application, physical environments will not be a significant factor
- It will be accessible from any device with an internet connection
- The physical environment of data storage with sensitive data should be secure

3.4. Support Environment

- The firm will provide a support team readily available for any issues related to EffortLogger
- Sufficient documentation to operate EffortLogger will be provided to make it easy to use

3.5. Operational Scenarios

3.5.1. Nominal Conditions

- Reliable internet condition
- Secure and accessible physical environment

3.5.2. Off-Nominal Conditions

- Unreliable internet connection
- Inaccessinle physical environments
- Server down or busy

3.6. Impact Considerations

3.6.1. Environmental Impact

- Since EffortLogger is a web application there will be minimal environmental impact
- The data servers however small will use resources which might negatively impact the environment

3.6.2. Organizational Impacts

- EffortLogger will help organizations to improve their efficiency by tracking the effort and defect reports of employees
- Better estimation for huge projects with fixed contracts can be taken up with the data provided by EffortLogger

3.6.3. Technical Impacts

- EffoertLogger can be used to identify new ways to improve productivity and quality of the employees

3.7. Risks and Potential Issues

- EffortLogger collects a lot of employee private data that needs to be well secured
- The accuracy of the EffortLogger depends on the accuracy of the data provided by employees

Appendix B : Glossary of Terms

EffortLogger: The application used to track effort and defect reports of employees

Planning poker: A technique used to estimate effort required for a task

Secure: Protect from unauthorized access

Scalable: Able to accommodate more users

Nominal Conditions: Conditions under which a system is designed to operate

4 Conclusion

4.1 Customer Requirements

- **Privacy**
 - Data taken from reports should not have identifiers to ensure anonymity
- **Transparency**
 - process flow of information to be transparent and how privacy is ensured must be explained in a way that is understood to all
- **Improvement**
 - Data trends can help performance improvement teams provide training to personnel in need of it
- **Functionality**
 - Easy to use
 - Provide support during planning poker sessions
 - Stylized poker cards

4.2 EffortLogger benefits

- The EffortLogger is an application used to track the effort and defect reports of employees
- Provides additional features for supporting planning poker sessions
- Provides employee privacy protection, confidential information security and better support for enterprise-scale agile
- EffortLogger can improve the efficiency of organizations to make better decisions by providing insights from data collected

4.3 Risks

- Since EffortLogger handles a lot of data there are some risks and potential issues
- Data security, privacy, accuracy of data and maintenance

4.4 Next Steps

- Exploring current best practices to address the new customer needs including research on data collection and analysis with privacy, secure software development and agile project management.
- Developing a prototype of the new solution and validating it with the stakeholders
- Overall the EffortLogger can be a valuable tool for organizations to improve their efficiency, effectiveness, collaboration and decision making