Feasibility Evidence Description (FED)

Student Scheduling System

Team # 10

Bo Wang: Project Manager, Requirement Engineer
Bohan Zheng: Prototyper, Software Architect
Chenyang Bai: Feasibility Analyst, Life Cycle Planner
Rui Tong: Requirement Engineer, Feasibility Analyst
Shuai Wang: Software Architect, Prototyper
Xiaoran Li: Life Cycle Planner, Team manager
Frank Varela: IIV&V, Shaper

09/27/2013
## Version History

<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Version</th>
<th>Changes made</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/26/2013</td>
<td>Chenyang Bai</td>
<td>1.0</td>
<td>• Risk Assessment Added</td>
<td>• To fit CSCI577 course content</td>
</tr>
</tbody>
</table>
# Table of Contents

Feasibility Evidence Description (FED) ................................................................. i

Version History ........................................................................................................ ii

Table of Contents ..................................................................................................... iii

Table of Tables .......................................................................................................... iv

Table of Figures ........................................................................................................ v

1. Introduction ........................................................................................................... 1

2. Business Case Analysis ....................................................................................... 2
   2.1 Cost Analysis .................................................................................................. 2
   2.2 Benefit Analysis ............................................................................................... 2
   2.3 ROI Analysis ................................................................................................... 3

3. Risk Assessment ................................................................................................... 4

4. NDI/NCS Interoperability Analysis ..................................................................... 5
   4.1 Introduction ..................................................................................................... 5
   4.2 Evaluation Summary ...................................................................................... 5
Table of Tables

Table 1: Personnel Costs........................................................................................................................................2
Table 2: Hardware and Software Costs ........................................................................................................2
Table 3: Benefits of xxx System .....................................................................................................................2
Table 4: ROI Analysis..........................................................................................................................................3
Table 5: Risk Assessment......................................................................................................................................4
Table 6: NDI Products Listing ..........................................................................................................................5
Table 7: NDI Evaluation......................................................................................................................................5
Table of Figures

Figure 1: ROI Analysis Graph ........................................................................................................................................3
1. Introduction

1.1 Purpose of the FED Document

The purpose of FED is to study the necessity and possibility to solve the problem. In software development process, due to the software developer or user’s understanding of the market is not sufficient, immaturity of the technology, which lead to the risk for the development of underestimation. Many problems cannot be resolved within the expected time or resources restrictions. If developers can predict the problems as soon as possible when there is no reasonable solution, then stopped development of the project as soon as possible will be able to avoid the time, money, man power and material waste.

1.2 Status of FED Document

This is the first edition of the FED document, it mainly analyzes the risk assignment.
2. Business Case Analysis

2.1 Cost Analysis

<< Identify all possible cost either in monetary term or non-monetary term, such as hours spent, qualitative benefits for the project. Please note that you do not include the effort cost spent by development team, include only cost spent by clients. >>

2.1.1 Personnel Costs

<< Identify all personnel-related cost from exploration phase to operation phase. Example can be found at ICSM EPG>Task: Analyze Business Case >>

Table 1: Personnel Costs

<table>
<thead>
<tr>
<th>Activities</th>
<th>Time Spent (Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.2 Hardware and Software Costs

<< Identify all hardware and software-related cost from exploration phase to operation phase. Example can be found at ICSM EPG>Task: Analyze Business Case >>

Table 2: Hardware and Software Costs

<table>
<thead>
<tr>
<th>Type</th>
<th>Cost</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.2 Benefit Analysis

<< Analyze benefits from this project. Benefits could be in the quantitative form such as more revenue, saved effort, and qualitative form such as increase of reliability. Example can be found at ICSM EPG>Task: Analyze Business Case >>

Table 3: Benefits of xxx System

<table>
<thead>
<tr>
<th>Current activities &amp; resources used</th>
<th>% Reduce</th>
<th>Time Saved (Hours/Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.3 ROI Analysis

<< Calculate Return on Investment by using your cost and benefit analysis results and identify the breakeven point. Note, if you have hardware and software cost, it must be included in ROI calculation. For effort cost, if you use a salary as your calculation base, assume 10% annually increase. Example can be found at ICSM EPG>Task: Analyze Business Case>>

Table 4: ROI Analysis

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost</th>
<th>Benefit (Effort Saved)</th>
<th>Cumulative Cost</th>
<th>Cumulative Benefit</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: ROI Analysis Graph

![ROI Analysis Graph]
3. Risk Assessment

<< Identify our project risk, its exposure and its mitigation plan. Please note risk is a threat or probability that something will happen and possibly create loss or injury. So, if your threat or your incident is already happened, then it is a problem, not a risk. More example of risks can be found at ICSM EPG> Task: Assess and Plans to Mitigate Risks>>

Table 5: Risk Assessment

<table>
<thead>
<tr>
<th>Risks</th>
<th>Risk Exposure</th>
<th>Risk Mitigations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative low practical development experience of team members.</td>
<td>3</td>
<td>Reference to some successful cases and absorb experience form it. On the other hand, discussing positively among team members when meet problems. Further more, intensify the communication with clients, make sure what they really want us to do. In the end, fully make use of ICSM EPG, consulting TA when confused.</td>
</tr>
<tr>
<td>Requirement mismatch</td>
<td>4</td>
<td>Exchange ideas and report progress in time through weekly negotiations.</td>
</tr>
<tr>
<td>Do not familiar with the existing algorithms for the project</td>
<td>4</td>
<td>Ask help for the algorithm designer in last year’s project. We should find new heuristics for backtracking, such improve the algorithm performance. On the other way, we may develop a new algorithm by ourselves.</td>
</tr>
<tr>
<td>Do not clearly realize the system constrains about the existing product</td>
<td>5</td>
<td>We should have a further communication with the students in SIT and the previous developers.</td>
</tr>
<tr>
<td>User interface mismatch</td>
<td>6</td>
<td>Early Prototype and Specify error expression when an error occurs. Improving javascript formula validation. We can provide nicer HTML/CSS user interface.</td>
</tr>
<tr>
<td>Long response time</td>
<td>6</td>
<td>We shall explore alternatives for the existing coding. Thus we can reduce the load of code analysis and reengineering.</td>
</tr>
</tbody>
</table>
4. NDI/NCS Interoperability Analysis

4.1 Introduction

<< Identify the Non-Developmental Item (NDI) and Net-Centric Services (NCS) including open source software or libraries that you are using/plan to use in your project and analyze their interoperability. >>

4.1.1 COTS / GOTS / ROTS / Open Source / NCS

<< Identify all candidate commercial off-the-shelf, government-off-the-shelf, research-off-the-shelf, open source software, libraries, and net-centric services component that you are using/plan to use. Also identify the purpose of each component. >>

<table>
<thead>
<tr>
<th>NDI/NCS Products</th>
<th>Purposes</th>
</tr>
</thead>
</table>

4.1.2 Connectors

<< Identify the connector, for example
- “In this project, we use PHP/MySQL Connector to enable the PHP web application to retrieve and query data from the database”. >>

4.1.3 Legacy System

<< Identify the connector, for example
- “In this project, the development system has to be able to interoperate and works well with “BusinessWorks” version 5.2, which is a software system that the client is currently using.” >>

4.2 Evaluation Summary

<< Summarize the final selection of your interoperable NDI/NCS, its usage and its comment. Example can be found in ICSM EPG> Task: Analyze NDI Interoperability for NDI / NCS project. >>

<table>
<thead>
<tr>
<th>NDI</th>
<th>Usages</th>
<th>Comments</th>
</tr>
</thead>
</table>

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