

Feasibility Evidence Description (FED)

We Are Trojans

Team No.1

Team members	Roles
Eirik Skogstad	Project Manager, Life Cycle Planner
Min Li	Feasibility Analyst, Operational Concept Engineer
Pittawat Pamornchaisirikij	NDI/NCS Acquirer & Evaluator, Tester
Saloni Priya	Requirements Engineer, UML Modeler
Suleyman Erten	Operational Concept Engineer, Requirement Engineer
Kamonphop Srisopha	Prototyper, UML modeler
Ameer Elkordy	IIV&V, Quality Focal Point
Punyawee Pakdiying	System Architect, Feasibility Analyst

09/24/2014

Version History

Date	Author	Version	Changes made	Rationale
09/28/14	PP	1.0	[Create initial a FED document from a template, updating the risk assessment section.	[For use VCP package submission of the proejct.

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
1.1 Purpose of the FED Document.....	1
1.2 Status of the FED Document.....	1
2. Business Case Analysis.....	2
2.1 Cost Analysis.....	3
2.2 Benefit Analysis.....	3
2.3 ROI Analysis.....	4
3. Architecture Feasibility.....	5
3.1 Level of Service Feasibility.....	5
3.2 Capability Feasibility.....	5
3.3 Evolutionary Feasibility.....	6
4. Process Feasibility.....	7
5. Risk Assessment.....	8
6. NDI/NCS Interoperability Analysis.....	9
6.1 Introduction.....	9
6.2 Evaluation Summary.....	9

Table of Tables

<i>Table 1: Personnel Costs.....</i>	<i>3</i>
<i>Table 2: Hardware and Software Costs.....</i>	<i>3</i>
<i>Table 3: Benefits of We Are Trojans System.....</i>	<i>3</i>
<i>Table 4: ROI Analysis.....</i>	<i>4</i>
<i>Table 5: Level of Service Feasibility.....</i>	<i>5</i>
<i>Table 6: Capability Requirements and Their Feasibility Evidence.....</i>	<i>5</i>
<i>Table 7: Evolutionary Requirements and Their Feasibility Evidence.....</i>	<i>6</i>
<i>Table 8: Rationales for Selecting Architected Agile Model.....</i>	<i>7</i>
<i>Table 9: Risk Assessment.....</i>	<i>8</i>
<i>Table 10: NDI Products Listing.....</i>	<i>9</i>
<i>Table 11: NDI Evaluation.....</i>	<i>9</i>

Table of Figures

..A.1. Introduction

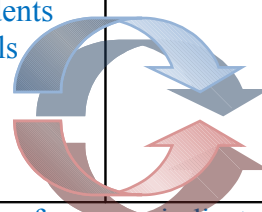
..A.1.1 Purpose of the FED Document

..A.1.2 Status of the FED Document

- The concrete win conditions have been proposed into the project.
- The functionalities of the system have been proposed.
- The client propose the reliability of the system.

..A.2. Business Case Analysis

<< The program model created during the operational concept description is to be augmented by cost and benefit drivers that will help ascertain the worth of the program. Two boxes of Cost and Benefits are added to the program model:

Assumptions			
<ul style="list-style-type: none"> USC students need a central platform to connect, share, and like information with each other Reward point system will work as the important incentives for users to join the network 			
Stakeholders (Who is accountable for the initiatives)	Initiatives (What to do to realize benefits)	Value Propositions (Benefits i.e Why)	Beneficiaries (Who derives value)
<ul style="list-style-type: none"> Developers Maintainers Clients Gift/Book stores 	<ul style="list-style-type: none"> Develop the system Monitor the system Advertize the system to USC community Partner with schools Negotiate deals with on-campus bookstore/gift store 	<ul style="list-style-type: none"> Increase camaraderie between Trojans One-stop shop to answer any USC related queries Increase communications between students across schools 	<ul style="list-style-type: none"> USC students USC alumni USC faculties
Cost (Cost factors) <ul style="list-style-type: none"> Development costs Maintenance costs Advertising/Marketing costs Web server, Web hosting, Domain name 		Benefits (Key performance indicators – KPIs) <ul style="list-style-type: none"> The number of active users in “WAT” network increases. 	

Cost: List all the costs drivers for executing the program.

Benefits: Explicitly list *metrics* against which the Benefits will be measured i.e. tracking towards completion. To help identify the metrics whether its hours saved or availability increased, it is important to capture the value propositions in a MEDIC form. That is explicitly framing the value propositions to be of the form “*Maintain current level of service*” or “*Increase system availability*” or “*Decrease effort overhead*” etc. Once they are framed in this manner, it would be easier to identify the corresponding metrics to help track the benefits. For example, *customers served per hour (maintained)* or *hourly system availability (increase)* or “*number of jobs processed (decreased effort)*” etc.

These are then elaborated further and used for ROI Analysis as detailed in the following sections. The program model is augmented with costs/benefit drivers to provide an easy overview and facilitated discussions during face to face meetings due to its ease of use. >>

..A.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

Table 1: Personnel Costs

Activities	Time Spent (Hours)
Development Period (24 weeks)	
Valuation and Foundations Phases: Time Invested (CSCI577a, 12 weeks)	
Client and team: Meeting via email, phone, and other channels [3 hrs/week * 12 weeks * 9 people]	324
Developers: Meeting via email, phone, and other channels [8 hrs/week * 12 weeks * 8 people]	768
winwin sessions [3 hrs/week * 4 weeks * 10 people]	120
Development and Operation Phases: Time Invested (CSCI577b, 12 weeks)	
Client: Meeting via email, phone, and other channels [3 hrs/week * 12 weeks * 9 people]	324
Developers: Meeting via email, phone, and other channels [6 hrs/week * 12 weeks * 9 people]	648
Developers: Development software [8 hrs/week * 12 weeks * 8 people]	768
Architecture Review Boards and Core Capability Drive-through session [3 hrs * 3 times * 10 people]	90
Deployment of system in operation phase and training - Installation & Deployment [5 hrs * 3 times * 9 people] - Training & Support [5 hrs * 2 times * 8 people]	135
Total	3177
Maintenance Period (1 year)	
Maintenance [3 hr/week * 52 weeks]	156
Total	3333

...1.1.1 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

Type	Cost	Rationale
Hardware - Web Hosting	\$150 /year	we do not have the web host.
Graphic editor	\$0	Used in our project

..A.1.2 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 We Are Trojans System

The benefit of the project are

- [**Increase camaraderie between Trojans**
- [**One-stop shop to answer any USC related queries**
- [**Increase communication between students across school**

Table 1: Benefits of We Are Trojans System

Current activities & resources used	% Reduce	Time Saved (Hours/Year)
Total		

..A.1.1 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 2: ROI Analysis

Year	Cost	Benefit (Effort Saved)	Cumulative Cost	Cumulative Benefit	ROI

..A.2. Architecture Feasibility

<< Provide evidence or rationale of why do you think the following LOS, capability, and evolutionary requirements are satisfiable. Example of product and process strategies can be found in ICSM EPG> Task: Provide Feasibility Evidence for Architecture Agile project >>

..A.2.1 Level of Service Feasibility

Table 3: Level of Service Feasibility

Level of Service Requirement	Product Satisfaction
LOS-1: << LOS name >>	Product Strategies: <<Identify product-related strategies that can make you achieve this requirement. >>
	Process Strategies: <<Identify process-related strategies that can make you achieve this requirement. >>
	Analysis: << Provide rationale to support your strategies>>
	Product Strategies:
	Process Strategies:
	Analysis:
	Product Strategies:
	Process Strategies:
	Analysis:

..A.2.2 Capability Feasibility

Table 4: Capability Requirements and Their Feasibility Evidence

Capability Requirement	Product Satisfaction
CR-1: << CR name >>	Software/Technology used: <<identify the software/technology that is/are used to develop this capability requirement>>
	Feasibility Evidence: << briefly provide rationale of how this capability could be developed to satisfy the requirements. >>
	Referred use case diagram: << identify related use case diagram >>
	Software/Technology used:
	Feasibility Evidence:
	Referred use case diagram:
	Software/Technology used:
	Feasibility Evidence:
	Referred use case diagram:

..A.2.3 Evolutionary Feasibility

Table 5: Evolutionary Requirements and Their Feasibility Evidence

Evolutionary Requirement	Product Satisfaction
ER-1: << ER name >>	Software/Technology used: <<identify the software/technology that is/are used to develop this capability requirement>>
	Feasibility Evidence: << briefly provide rationale of how this capability could be developed to satisfy the requirements. >>
	Referred use case diagram: << identify related use case diagram >>
	Software/Technology used:
	Feasibility Evidence:
	Referred use case diagram:
	Software/Technology used:
	Feasibility Evidence:
	Referred use case diagram:

..A.3. Process Feasibility

<< Based on process decision table provided in ICSM EPG> Concept: Process Decision Selection Guidelines, Identify which process model you are following and provide rationale why that model would fit your development project. Note: Development team discusses with stakeholders on important drivers and project status

Decision Criteria Rating Scale; 0:Very Low; 1:Low; 2: Medium; 3:High; 4:Very High

Importance Rating Scale: 1:Low; 2: Medium; 3:High

>>

Table 6: Rationales for Selecting Architected Agile Model

Criteria	Importance	Project Status	Rationales
30 % of NDI/NCS features			
Single NDI/NCS			
Unique/ inflexible business process			
Need control over upgrade / maintenance			
Rapid deployment			
Critical on compatibility			
Internet connection independence			
Need high level of services / performance			
Need high security			
Asynchronous communication			
Be accessed from anywhere			
Critical on mass schedule constraints			
Lack of personnel capability			
Require little upfront costs			
Require low total cost of ownership			
Not-so-powerful local machines			

..A.4. 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 7: Risk Assessment

Risks	Risk Exposure			Risk Mitigation Plan
	Potential Magnitude	Probability Loss	Risk Exposure	
Undefined Plan and Requirements: The requirements of the system are not solid, and are just partly known. Requirement have a tendency to change with project development.	8	9	72	Identifying all the success-critical-stakeholder and framing Win-Win negotiation with all success-critical-stakeholder is necessary
Lack of Involvement by success-critical-stakeholders: Do not understand clearly enough the success-critical Stakeholder positions	5	10	50	Further understanding of needs and system scoping is needed
User Risk: users may not accept to use the system even if all the specification are met by the system	5	10	50	We need to have certain level of discussion with the actual users as to whether they are willing to learn and use the new system we are developing
Architecture/Reuse/Non-Development Item conflict: There is no current server available for our system. The COTS/NDI used are poorly matched. A database system may be needed in order to keep the accounts, logs and forum information	5	8	40	Looking for services provided only and analyze all options if they are suitable to our conditions. Establish off-line server for using as a prototype for the clients manages to overcome the problem of interoperability
Client's availability: He is extremely busy. Schedule a meeting during class schedule might not be possible	5	8	40	Foresee meetings in due time, acquire clients' schedule. Client must notify team if he is busy during hours he is otherwise available.
Human-System integration shortfalls: We do not have human factors expertise and need to come up with the user-friendly interface	5	7	35	Research on the existing apps and see which designs is easily used by users
Scope and Time constraint: The scope of this project is very large. There are many components that need to be considered. To include all functionalities client mentioned within this time constraint might not be possible	7	3	21	Prioritize all features and develop the most needed features first

Human Resources and Contractors: Reaching the current USC database to acquire a student data, level of permission to access his details and give points based on his achievements	4	2	8	Re-prioritize features if this issue occurs
---	---	---	---	---

..A.5. NDI/NCS Interoperability Analysis

..A.5.1 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. >>

...5.1.1 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 8: NDI Products Listing

NDI/NCS Products	Purposes
CMS (Joomla, Drupal, Wordpress)	Provide general functions for manage content on website
DBMS (MySQL)	For keeping, managing, and retrieving data storage used in the system
Webserver (PHP based)	Infrastructure for our system
JQuery	Provide DOM manipulation methods
CSS framework (ex. bootstrap, foundation)	CSS API to customize user interface on website

...5.1.2 Connectors

- In the project, we use PHP/MySQL Connector to enable the PHP web application to query, retrieve, and store data to/from the MySQL database.

...5.1.3 Legacy System

- This project is completely new; thus, there is no legacy systems to be connected in the project.

..A.5.2 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 9: NDI Evaluation

NDI	Usages	Comments