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

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Version History

Date	Author	Version	Changes made	Rationale
09/28/14	ML,PP	1.0	• Create initial a FED document from a template, updating the risk assessment section.	• For use VCP package submission of the proejct.
10/11/14	ML,PP	2.0	• Finish all from section 1 to 5	• For use VCP package submission of the proejct.

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1. Introduction

1.1 Purpose of the FED Document

This document reports our analysis about the feasibility evidence of the We Are Trojans (WAT) Network project. We use risk assessment to identify and come up with a way to mitigate those risks. We will analyze NDI items and evaluate the risk if whether they fit our project.

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 specifies the reliability requirement of the system.
- The first feedback regarding the prototype developed has been received.

2. Process Feasibility

Table 1: Rationales for Selecting NDI/NCS Model

Criteria	Importance	Project Status	Rationales
30 % of NDI/NCS features	3	3	In the We Are Trojans, we will use NDI for the forum component and a core module to manage user's login
Single NDI/NCS	1	1	We may be using more than one NDI.
Unique/ inflexible business process	1	1	The business aspects of the project are very flexible.
Need control over upgrade / maintenance	3	3	The project has to be upgraded in future after the client negotiating with the USC.
Rapid deployment	0	0	Currently we are just building a dummy system. The system initially will not be deployed.
Critical on compatibility	0	0	The system has no compatibility issue. We will built the system and then look for a web hosting for our system.
Internet connection independence	1	1	Internet connection is important as the application developed is a web-based application.
Need high level of services / performance	2	1	High level of services and performance is important
Need high security	2	2	The system will be used only by USC students
Asynchronous communication	2	2	The system requires asynchronous

			communication to communicate with the web-hosting.
Be accessed from anywhere	3	3	The system is an online community.
Critical on mass schedule constraints	0	0	No, the system is not critical on mass schedule constraints.
Lack of personnel capability	0	0	The group consists of highly competent graduate software engineers and because We Are Trojans!
Require little upfront costs	3	3	The budget for our project is $0, as per our client specifications.
Require low total cost of ownership	2	2	Requires no cost of ownership
Not-so-powerful local machines	3	3	We have minimal cost and we also have no infrastructure right now. We will be using free left over 8 year old laptops.

3. Risk Assessment

Table 2: 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	5	7	35	Research on the existing apps and see which

expertise and need to come up with the user-friendly interface				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

4. NDI/NCS Feasibility Analysis

4.1 Assessment Approach

We will select an NDI that provide the features needed in our project, such as a forum with like and dislike functionalities, a CMS that allow the development team to specify roles for the users. We will look for the following features to make an appropriate NDI selection:

- Cost
- Scalability
- Compatibility
- Maturity (How stable is the NDI?)
- Functionality

4.2 Assessment Results

4.2.1 NDI/NCS Candidate Components (Combinations)

Table 3: NDI/NCS 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

4.2.2 Evaluation Criteria

Table 4: Evaluation Criteria – NDI /NCS Attributes

No.	Evaluation Criteria – NDI/NCS attributes	Weight
1	Cost	30
2	Maturity	20
3	Compatibility	20
4	Functionality	15
5	Scalability	15
	Total	100

Table 5: Evaluation Criteria - NDI/NCS features

No.	NDI/NCS Features/ sub features	Weight
1	Forum with basic Like/Dislike system	50
2	Search function	30
3	Authentication	15
4	Online Store	5
	Total	100

4.2.3 Evaluation Results Screen Matrix

Table 6: Evaluation Results Screen Matrix

No	W	Joomla				AVG	Total
		R1	R2	R3	R4		
1 (cost)	30	10	10	10	8	9.5	285
2 (Maturity)	20	10	9	9	5	8.25	165
3 (Compatibility)	20	9	10	8	10	9.25	185
4 (Functionality)	15	8	10	9	10	9.25	138.75
5 (Scalability)	15	10	9	9	10	9.5	142.5
Total	100						916.25

No	W	Joomla				AVG	Total
		R1	R2	R3	R4		
1 Forum with basic Like/Dislike system	50	8	0	5	5	4.5	225
2 Search function	30	8	5	8	10	7.75	232.5
3 Authentication	15	10	10	10	10	10	150
4 Online Store	5	8	4	8	0	5	25
Total	100						916.25

4.3 Feasibility Evidence

4.3.1 Level of Service Feasibility

Table 7: Level of Service Satisfiability Evidence

Level of Service Win Condition	Rationale
LOS-1: The system shall render correctly on	Similar forums have mobile apps so it is

mobile platforms.	feasible to make it.
LOS-2: The system shall not be down more than 24 hours in one month.	Almost all of the web services available right now can achieve this level of service easily. Moreover, our project can have maintenance at night so that it will not cause the system to be down more than 24 hours.

<< If the selected NDI/NCS's performance does not satisfy level of service win condition, explain your product and process strategies of how to implement your system in order to satisfy the LOS win condition. Example of product and process strategies can be found in **ICSM EPG> Task: Provide Architecture Feasibility Evidence.** >>

Table 8: Level of Service Implementation Strategy

Level of Service Win Condition	Product Satisfaction
LOS-1: The system shall be user-friendly and intuitive.	Product Strategies: User input/output, UI consistency, UI Flexibility, Internal locus of control, Informative Feedback for actions
	Process Strategies: Prototyping, User Interface tools, User Involvement
	Analysis: Create a prototype to get feedback from the clients and users to modify and adjust the GUI accordingly.

4.3.2 Capability Feasibility

Table 9: Capability Feasibility Evidence

Capability Requirement	Product Satisfaction
CR-1: Forum	Software/Technology used: Joomla
	Feasibility Evidence: Create prototypes with all features using Joomla to determine the feasibility of the technology.
	Referred use case diagram: Referred use case diagram: referred to the Figure 3 in the SAAD document
CR-2: Profile	Software/Technology used: Joomla

	Feasibility Evidence: Try building the Joomla website using its user profile features and get feed back whether it supports user requirements or not
	Referred use case diagram: referred to the Figure 3 in the SAAD document

4.3.3 Evolutionary Feasibility

Table 10: Evolutionary Feasibility Evidence

Evolutionary Win Condition	Rationale
ER-1: Data Integration	The clients will negotiate with the USC to integrate the system with USC system/database. Therefore, the team may need to integrate the WAT system with the USC system.

5. Business Case Analysis

Benefits are added to the program model:

<table>
<tr><td colspan="4">Assumptions
• 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</td></tr>
<tr><td>Stakeholders
(Who is accountable for the initiatives)</td><td>Initiatives
(What to do to realize benefits)</td><td>Value Propositions
(Benefits i.e Why)</td><td>Beneficiaries
(Who derives value)</td></tr>
<tr><td>• Developers
• Maintainers
• Clients
• Gift/Book stores</td><td>• Develop the system
• Monitor the system
• Advertize the system to USC community
• Partner with schools
• Negotiate deals with on-campus bookstore/gift store</td><td>• Increase camaraderie between Trojans
• One-stop shop to answer any USC related queries
• Increase communications between students across schools</td><td>• USC students
• USC alumni
• USC faculties</td></tr>
<tr><td colspan="2">Cost (Cost factors)
• Development costs
• Maintenance costs
• Advertising/Marketing costs
• Web server, Web hosting, Domain name</td><td colspan="2">Benefits (Key performance indicators – KPIs)
• The number of active users in “WAT” network increases.</td></tr>
</table>

5.1 Market Trend and Product Line Analysis

Table 11: Market Trend and Product Line Analysis

	Joomla
Market Trend	Joomla is one of the most widely used CMS systems in the market, even though it's popularity has decreased the last five years.
Product Line	There are many plug-ins available to integrate with Joomla

5.2 Cost Analysis

5.2.1 Personnel Costs

Table 12: 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

5.2.2 Hardware and Software Costs

Table 13: Hardware and Software Costs

Type	Component 1
Ownership cost	0
Maintenance cost	0
Hardware	0
Total	0

5.3 Benefit Analysis

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 14: Benefits of We Are Trojans System

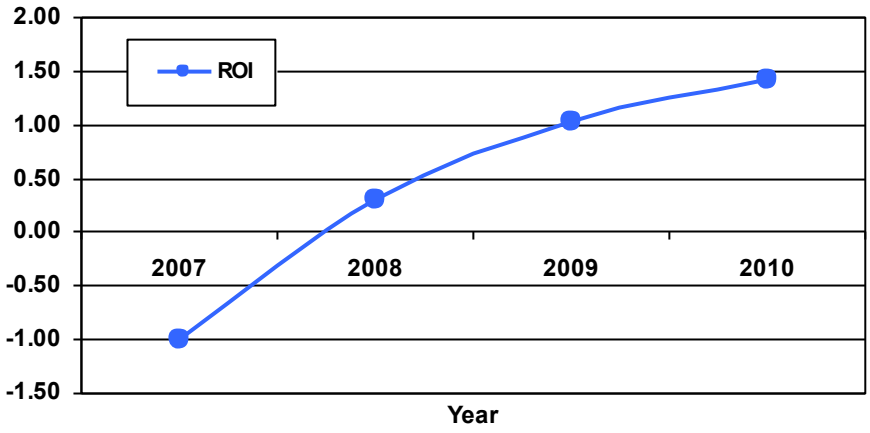
Current activities & resources used	% Reduce	Time Saved (Hours/Year)
Total		

5.4 ROI Analysis

Table 15: ROI Analysis

Year	Cost	Benefit (Effort Saved)	Cumulative Cost	Cumulative Benefit	ROI
2014	194	0	0	0	-1
2015	0	Unknown	0	unknown	

Figure 1: ROI Analysis Graph



6. Conclusion and Recommendations

Currently, we have selected Joomla as our NDI. We made this choice by looking through the fetures of the NDI, whether it support the following:

- Cost
- Functionality
- Compatibility
- Functionality
- Scalability

to be our NDI. There is no other NDI in our mind. We need to do the research on NDI for our project to find out the one which can have a appropriate performance for all the components.