

Life Cycle Plan (LCP)

Improving Thai CDC Establishing a New Client/Donor/Partner Communications & Project Tracking Tool

Team #: 01

Team Members & Roles

Name	Primary/Secondary Role
Brandon Foster	IIV & V/Quality Focal Point
Ding Li	Life Cycle Planner/Software Architect
Yi Li	Feasibility Analyst/Requirements Engineer
Ino Mantaring	Requirements Engineer/Prototyper
Vishal Punjabi	Operational Concept Engineer/Prototyper
Katelyn Swift-Spong	Manager/Operational Concept Engineer
Charles Muckenthaler	IIV&V

12/05/2011

Version History

Date	Author	Version	Changes made	Rationale
09/28/2011	Ding Li	1.0	Add development members' skill form	To identify team members' skills
10/07/2011	Ding Li	1.1	Add assumptions and status of LCP, modified inconsistencies.	To identify purpose of LCP, explicit assumptions about clients, response to VCP evaluation
10/10/2011	Ding Li	2.0	Assumptions updated, skills of development team updated	Document for FCP. To identify new skills learned by development team
10/14/2011	Ding Li	2.1	Strategy, approaches and resources are define.	For Draft FCP
10/24/2011	Ding Li	3.0	Content updated, bugs fixed, new team member added	For DCP
11/14/2011	DL	3.1	Bugs fixed	To fixed some reported bugs
11/21/2011	DL	4.0	Bugs fixed and re-estimated the project	For Draft TRR Package
12/05/2011	DL	4.1	Bugs fixed	For TRR Package

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1.Introduction

1.1 Purpose of the LCP

This document, the Life Cycle Plan (LCP), will be used as the guideline for the entire project. It will identify the different types of artifacts each team member will deliver, describe the milestones shared by all stakeholders, and also identify the skills and responsibilities of each team member, as applicable to this project. With such a purpose, the LCP looks to ensure the entire project will meet all milestones, and deliver a system that is expected by the clients, development team, and USC staff.

1.2 Status of the LCP

The status of the LCP is currently at the Transition Readiness Review Package version number 4.0. In this version, we fixed bugs in last version and re-estimated the cost of project in COTIPMO

1.3 Assumptions

- The duration of the project is 12 weeks.
- Product is supposed to be delivered to client in the Fall semester of 2011.
- The development-team members will not change during the 2011 Fall semester.
- Main functions of the newly developed system will be supported by Network Centric Services (NCS).
- Thai CDC does not employ Information Technology (IT) professionals.
- The development team will spend at least 1 hour communicating with the client, Thai CDC, via meetings, teleconferences, info-sessions, etc... on a weekly basis.
- Each member of the development team will work approximately 12 hours per week on the new system proposed by Thai CDC.

2. Milestones and Products

2.1 Overall Strategy

The Thai CDC Client/Donor/Partner Communications and Project Tracking Tool System is following Single NDI Process Pattern because most capabilities of this system must be built on single cloud-based web-services (Salesforce). The whole project is supported to be finished in 12 weeks. Our developing process is following ICSM.

There are 4 phases in our projects, they are listed as follow:

Exploration phase

Duration: 09/09/11- 09/28/11

Concept: The developer team will identify Operational Conception shared by all success-critical stakeholders; they will explore potential techniques to develop contacts management system and task tracking system of Thai CDC. They will study current system of Thai CDC and set time schedules and milestones of whole project

Deliverables: Valuation Commitment Package

Milestone: Valuation Commitment Review

Strategy: One Incremental Commitment Cycle

Valuation phase

Duration: 09/29/11- 10/14/11

Concept: In this phase, the development team will talk with clients and clarify their requirement and prioritize those requirements. The development team will have an agreement on win conditions with clients. The development team will develop the architecture of proposed system, operational concept, define the milestones.

Deliverables: Core Foundation Commitment Package, Draft Foundation Commitment Package, prototype, WinWin prioritization report.

Milestone: Foundation Commitment Review

Strategy: One Incremental Commitment Cycle

Foundation phase

Duration: 10/14/11- 10/24/11

Concept: Our project is a one-semester project, the development team only have a very short Foundation phase. In this phase, the development team will continue clarify clients' requirement and find out method to meet those requirement. The development team will also identify risks in development.

Deliverables: Draft Development Commitment Package,

Milestone: Development Commitment Review

Strategy: One Incremental Commitment Cycle

Development phase

Duration: 10/24/11-12/05/11

Concept: In this phase, the whole system will be developed and tested.

Deliverables: The final product, Test Procedure and Result. User Manual, Transition Readiness Review Package (TRR)
 Milestone: Test Procedure and Result
 Strategy: Two Incremental Commitment Cycles

2.2 Project Deliverables

Identify project deliverables in each phase and its due date, format, and medium

2.2.1 Exploration Phase

Table 1: Deliverable Artifacts in Exploration Phase

Artifact	Due date	Format	Medium
Client Interaction Report	09/21/2011	.doc, .pdf	Soft copy
Valuation Commitment Package <ul style="list-style-type: none"> • Operational Concept Description (OCD) Early Section • Life Cycle Plan (LCP) Early Section • Feasibility Evidence Description (FED) Early Section 	09/28/2011	.doc, .pdf	Soft copy
Evaluation of Valuation Commitment Package	10/03/2011	.xls	Soft copy
Project Effort	Every Monday	Text	ER system
Project Plan	Every Wednesday	.mpp, .pdf	Soft copy
Progress Report	Every Wednesday	.xls	Soft copy

2.2.2 Valuation Phase

Table 2: Deliverable Artifacts in Valuation Phase

Artifact	Due date	Format	Medium
Core Foundation Commitment Package <ul style="list-style-type: none"> • OCD • PRO • WWPT 	10/10/2011	.doc, .pdf	soft copy

<ul style="list-style-type: none"> • SSAD section 1, 2.1 • LCP section 1, 3.3 • FED section 1, 3, 4.1, 4.2.1, 4.2.2 • SID 			
Draft Foundation Commitment Package <ul style="list-style-type: none"> • OCD • PRO • WWPT • SSAD section 1, 2 • LCP • FED section 1-5 • SID 	10/14/2011	.doc, .pdf	soft copy
Response to Evaluation of Core FC Package	10/14/2011	Bugzilla	soft copy
Response to Evaluation of Draft FC Package	10/24/2011	Bugzilla	soft copy
Project Effort	Every Monday	Text	ER system
Project Plan	Every Wednesday	.mpp, .pdf	Soft copy
Progress Report	Every Wednesday	.xls	Soft copy

2.2.3 Foundations Phase

Table 3: Deliverable Artifacts in Foundations Phase

Artifact	Due date	Format	Medium
Development Commitment Package <ul style="list-style-type: none"> • OCD • PRO • WWPT • SSAD • LCP • FED • SID • QMP • ATPC • IP 	10/24/2011	.doc, .pdf	soft copy
Project Effort	Every Monday	Text	ER system
Project Plan	Every Wednesday	.mpp, .pdf	Soft copy
Progress Report	Every Wednesday	.xls	Soft copy

2.2.4 Development Phase

Table 4: Deliverable Artifacts in Development Phase

Artifact	Due date	Format	Medium
Draft TTR Package <ul style="list-style-type: none"> • OCD • PRO • WWPT • SSAD section 1, 2 • LCP • FED section 1-5 • SID • IAR • TP • UM • TM • ATRP 	11/21/2011	.doc, .pdf	soft copy
TTR Package <ul style="list-style-type: none"> • OCD • PRO • WWPT • SSAD section 1, 2 • LCP • FED section 1-5 • SID • IAR • TP • UM • TM • ATRP 	12/05/2011	.doc, .pdf	soft copy

3.Responsibility

3.1 Project-specific stakeholder's responsibilities

Table 5: Responsibility for each Role

Role	Responsibilities
Thai CDC Staff (Client/User/Maintainer)	<ul style="list-style-type: none"> • Clarify needs and requirements • Participate in the WinWin negotiation. • Provide necessary assistance to development team. • Give feedback to development team • Track the process of project • Test the project • Get training from development team • Maintain the system
USC student (development team)	<ul style="list-style-type: none"> • Participate in WinWin session • Analyze the current system of Thai CDC • Investigate potential alternatives for development • Develop prototype and define milestones and plan about project • Develop the system based on agreement with clients • Design the architecture of system and develop the system according to it. • Train staff in Thai CDC
DEN Student (IIV&V)	<ul style="list-style-type: none"> • Attend the WinWin sessions • Monitor the process of project • Feedback and review to development team • Test the system.

3.2 Responsibilities by Phase

Table 5: Stakeholder's Responsibilities in Phase

Team Member / Role	Primary / Secondary Responsibility				
	Exploration	Valuation	Foundations	Development-Construction Iteration	Development-Transition Iteration
Katelyn Swift-Spong Role: <ul style="list-style-type: none"> Manager, Operational Concept Engineer, Developer 	Primary Responsibility <ul style="list-style-type: none"> Control and track the process of whole project. Leading communication with client Make project report Assign tasks to other members Secondary Responsibility <ul style="list-style-type: none"> Find out what function and capabilities are needed by clients. Find out expected benefit of clients 	Primary Responsibility <ul style="list-style-type: none"> Control and track the process of whole project. Leading communication with client Make project report Identify iteration Check all artifacts Make a more detailed plan Secondary Responsibility <ul style="list-style-type: none"> Define new Operational Concept. Access defined operational concept Identify constraints of system 	Primary Responsibility <ul style="list-style-type: none"> Control and track the process of whole project. Make project report Monitor the progress of project Secondary Responsibility <ul style="list-style-type: none"> Improve the definition of operational concept Prepare for development 	Primary Responsibility <ul style="list-style-type: none"> Control and track the process of whole project. Monitor the progress of project Develop the system Develop user manual Secondary Responsibility <ul style="list-style-type: none"> Make project report 	Primary Responsibility <ul style="list-style-type: none"> Control and track the process of whole project. Monitor the progress of project Develop user manual Secondary Responsibility <ul style="list-style-type: none"> Make project report
Charles Muckenthaler Role: <ul style="list-style-type: none"> IIV&V & 	<ul style="list-style-type: none"> Not in team yet 	<ul style="list-style-type: none"> Not in team yet. 	<ul style="list-style-type: none"> Not in team yet 	Primary Responsibility <ul style="list-style-type: none"> Control the quality of whole system Secondary Responsibility <ul style="list-style-type: none"> Help developing the system 	Primary Responsibility <ul style="list-style-type: none"> Value and validate product Secondary Responsibility <ul style="list-style-type: none"> Help developing the system
Brandon Foster Role: <ul style="list-style-type: none"> IIV&V & Requirements Management 	Primary Responsibility <ul style="list-style-type: none"> Have Winwin negotiate with clients Value and validate artifacts delivered by other team members. Secondary Responsibility <ul style="list-style-type: none"> Contact with clients 	Primary Responsibility <ul style="list-style-type: none"> Value and validate artifacts delivered by other team members. Make feedback to development team Secondary Responsibility <ul style="list-style-type: none"> Help developing the system. 	Primary Responsibility <ul style="list-style-type: none"> Value and validate artifacts delivered by other team members. Make feedback to development team. Secondary Responsibility <ul style="list-style-type: none"> Help developing the system 	Primary Responsibility <ul style="list-style-type: none"> Control the quality of whole system Develop the system Secondary Responsibility <ul style="list-style-type: none"> Help make documentations 	Primary Responsibility <ul style="list-style-type: none"> Value and validate product Secondary Responsibility <ul style="list-style-type: none"> Help make documentations
Ino Mantaring Role: <ul style="list-style-type: none"> Prototyper Requirements Engineer Developer 	Primary Responsibility <ul style="list-style-type: none"> have a basic understanding of current system(MS Access System) Create conceptual prototype Secondary Responsibility <ul style="list-style-type: none"> Search evidence of feasibilities. Discover clients' requirement 	Primary Responsibility <ul style="list-style-type: none"> Create basically functional prototype Prioritize the requirement. Secondary Responsibility <ul style="list-style-type: none"> Overview WinWin negotiation. Gather win condition Discover clients' requirement 	Primary Responsibility <ul style="list-style-type: none"> Improve the functional prototype Prepare for development Secondary Responsibility <ul style="list-style-type: none"> Evaluate the SSAD 	Primary Responsibility <ul style="list-style-type: none"> Design and develop the whole system. Develop each component Fix defect Secondary Responsibility <ul style="list-style-type: none"> Making user manual 	Primary Responsibility <ul style="list-style-type: none"> Write user manual Secondary Responsibility <ul style="list-style-type: none"> Transition Plan
Yi Li	Primary Responsibility	Primary Responsibility	Primary Responsibility	Primary Responsibility	Primary

Role: <ul style="list-style-type: none"> Feasibility Analyst Requirements Engineer 	<ul style="list-style-type: none"> Evaluate risks of could-based system Evaluate risks and benefits of different type of approaches(Salesforce, et) Find out evidence to support the Feasibility report Secondary Responsibility <ul style="list-style-type: none"> Search evidence of feasibilities. Discover clients' requirement 	<ul style="list-style-type: none"> Evaluate risks of could-based system Evaluate approach Set evaluate criteria Secondary Responsibility <ul style="list-style-type: none"> Evaluate and prioritize the requirement of clients Develop requirement definition. Build WWPT 	<ul style="list-style-type: none"> Evaluate risks in development Evaluate approach Improve evaluate criteria Secondary Responsibility <ul style="list-style-type: none"> Access the prototype 	<ul style="list-style-type: none"> Test the project Secondary Responsibility <ul style="list-style-type: none"> Help developing 	Responsibility <ul style="list-style-type: none"> Train Clients Secondary Responsibility <ul style="list-style-type: none"> Archiving
Ding Li Role: <ul style="list-style-type: none"> Life Cycle Planer Software Architect 	Primary Responsibility <ul style="list-style-type: none"> Identify skills of each team member Identify responsibilities of each stakeholder in each phase Secondary Responsibility <ul style="list-style-type: none"> Evaluate risks of could-based system Evaluate risks and benefits of different approaches 	Primary Responsibility <ul style="list-style-type: none"> Identify new skills of each team member Identify responsibilities of each stakeholder in each phase Define plans and milestones Identify tools and facilitate Secondary Responsibility <ul style="list-style-type: none"> Define architecture of the project. Define context, artifacts and user case of project. Describe all use cases 	Primary Responsibility <ul style="list-style-type: none"> Check the plan and milestones Record new skills, tools and facilitates Design iteration plan Secondary Responsibility <ul style="list-style-type: none"> Access architecture of the project. Access context, artifacts and user case of project. Access NDI Interoperability 	Primary Responsibility <ul style="list-style-type: none"> Plan each iteration Develop the System Secondary Responsibility <ul style="list-style-type: none"> Access architecture of the project. Access context, artifacts and user case of project. Access NDI Interoperability 	Primary Responsibility <ul style="list-style-type: none"> Access each iteration Secondary Responsibility <ul style="list-style-type: none"> Making transition plan
Vishal Punjabi Role: <ul style="list-style-type: none"> Operational Concept Engineer Prototyper Builder 	Primary Responsibility <ul style="list-style-type: none"> Identify visions shared by all stakeholders Find out what function and capabilities does client want Secondary Responsibility <ul style="list-style-type: none"> Help make the conceptual prototype 	Primary Responsibility <ul style="list-style-type: none"> Define all operational concept Define constraints Define level of Goals Secondary Responsibility <ul style="list-style-type: none"> Help develop functional prototype 	Primary Responsibility <ul style="list-style-type: none"> Check all operational concept Check constraints Define level of Goals Prepare for development Secondary Responsibility <ul style="list-style-type: none"> Help improve the functional prototype 	Primary Responsibility <ul style="list-style-type: none"> Make training plan Secondary Responsibility <ul style="list-style-type: none"> Develop the project 	Primary Responsibility <ul style="list-style-type: none"> Training users and maintainers Secondary Responsibility <ul style="list-style-type: none"> Help making user manual
Chancee Martorell Role: <ul style="list-style-type: none"> Main Client User Maintainer 	Primary Responsibility <ul style="list-style-type: none"> Report needs to development team Provide information about current system Provide authority to development team Secondary Responsibility <ul style="list-style-type: none"> Take meeting with development team 	Primary Responsibility <ul style="list-style-type: none"> Track the progress of project Secondary Responsibility <ul style="list-style-type: none"> Take meeting with development team 	Primary Responsibility <ul style="list-style-type: none"> Track the progress of project Access the Development Commitment of development team Secondary Responsibility <ul style="list-style-type: none"> Take meeting with development team 	Primary Responsibility <ul style="list-style-type: none"> Track and test the system Secondary Responsibility <ul style="list-style-type: none"> Take meeting with development team 	Primary Responsibility <ul style="list-style-type: none"> Track and test the system Accept training from development team Secondary Responsibility <ul style="list-style-type: none"> Take meeting with development team

Alexander R. Holsheimer Role: ● Main Client ● User	Primary Responsibility <ul style="list-style-type: none"> ● Keep contacting with development team ● Take WinWin negotiation ● Report needs to development team Secondary Responsibility <ul style="list-style-type: none"> ● Give development team information about clients' daily work 	Primary Responsibility <ul style="list-style-type: none"> ● Keep contacting with development team ● Take WinWin negotiation Secondary Responsibility <ul style="list-style-type: none"> ● Feed back to development team 	Primary Responsibility <ul style="list-style-type: none"> ● Keep contacting with development team ● Take WinWin negotiation Secondary Responsibility <ul style="list-style-type: none"> ● Feed back to development team 	Primary Responsibility <ul style="list-style-type: none"> ● Track and test the system Secondary Responsibility <ul style="list-style-type: none"> ● Feed back to development team 	Primary Responsibility <ul style="list-style-type: none"> ● Track and test the system Secondary Responsibility <ul style="list-style-type: none"> ● Accept training from development team
Maria Lam Role: ● Main Client ● User	Primary Responsibility <ul style="list-style-type: none"> ● Keep contacting with development team ● Take WinWin negotiation ● Feedback to development team Secondary Responsibility <ul style="list-style-type: none"> ● Feed back to development team 	Primary Responsibility <ul style="list-style-type: none"> ● Keep contacting with development team ● Take WinWin negotiation Secondary Responsibility <ul style="list-style-type: none"> ● Feed back to development team 	Primary Responsibility <ul style="list-style-type: none"> ● Keep contacting with development team ● Take WinWin negotiation Secondary Responsibility <ul style="list-style-type: none"> ● Feed back to development team 	Primary Responsibility <ul style="list-style-type: none"> ● Track and test the system Secondary Responsibility <ul style="list-style-type: none"> ● Feed back to development team 	Primary Responsibility <ul style="list-style-type: none"> ● Track and test the system Secondary Responsibility <ul style="list-style-type: none"> ● Accept training from development team
Pheel Wang Role: maintainer	Not involved in project yet	Not involved in project yet	Not involved in project yet	Not involved in project yet	Primary Responsibility <ul style="list-style-type: none"> ● Get training from development team Secondary Responsibility <ul style="list-style-type: none"> ● Track the

3.3 Skills

Note: As the USC team continues their coursework in CSCI-577a (Software Engineering), each team member will acquire new skills that are pertinent to this project. These newly identified skills are listed in the "Skills" column below and can be identified by the square bullet-point.

Table 6: Team Members' Roles and Skill

Team members	Role	Skills
Katelyn Swift-Spong	<ul style="list-style-type: none"> ● Manager ● Operational Concept Engineer ● Developer 	<ul style="list-style-type: none"> ● Project Management ■ MS project

Brandon Foster	<ul style="list-style-type: none"> ● IIV&V & Requirements Management 	<ul style="list-style-type: none"> ● Communication skills ● Software Program Management, ● Software Testing \Requirements gathering, ■ Win-book ■ Bugzilla
Ino Mantaring	<ul style="list-style-type: none"> ● Prototyper ● Requirements Engineer ● Developer 	<ul style="list-style-type: none"> ● problem solving and optimization ■ Apex ■ Salesforce API ■ Balsamiq
Yi Li	<ul style="list-style-type: none"> ● Feasibility Analyst ● Requirements Engineer ● Developer 	<ul style="list-style-type: none"> ● Software Testing Skills ● Communication Skill ■ Salesforce configuration
Ding Li	<ul style="list-style-type: none"> ● Life Cycle Planer ● Software Architect 	<ul style="list-style-type: none"> ■ IBM RSM ■ COTIPMO
Vishal Punjabi	<ul style="list-style-type: none"> ● Operational Concept Engineer ● Prototyper ● Developer 	<ul style="list-style-type: none"> ■ IBM RSM ■ Salesforce configuration ■ Salesforce configuration
Charles Muckenthaler	<ul style="list-style-type: none"> ● IIV&V 	<ul style="list-style-type: none"> ● Bugzilla ● Software Testing Skill ● Quality Control Skill

4.Approach

4.1 Monitoring and Control

The progress of project will be monitored and controlled during the development. The purpose of monitoring and controlling is to ensure the quality of product and to finish all development in 12 weeks. We have weekly meeting , weekly effort report and weekly project plan to monitor the progress of project. We use bugzilla to control the quality of project.

In this Section, we will talk about Closed Loop Feedback Control methods and Reviews methods we used in projects.

4.1.1 Closed Loop Feedback Control

Our methods for closed loop feedback control are listed as follow:

- Effort Report: Everyone should write down how many hours spent on the project
- Progress Report: manager will record progress of the project every week, it helps the team meet the schedule.
- Project Plan: the Manger will use MS Project to set the baseline of project.
- Every one shares a dropbox for version control.
- Every one will keep in contact through email everyday.
- Weekly meeting: Development team will get together once every week to develop some important artifacts together.
- After class discussion: Development team will discuss some issues they have encountered after each class
- Google spreadsheet is used to share information.

4.1.2 Reviews

Our review methods are listed as following:

- Peer review in weekly meeting.
- We have TA review
- IIV&V reviews.
- Client Review

4.2 Methods, Tools and Facilities

Table 7: Tools used

Tools	Usage	Provider
Salesforce	NCS used to support most functionality in project	Web-service
Apex	Programming language and interface for Salesforce	Web-service
Winbook	To record win conditions in WinWin session	USC
spreadsheet	To prioritize requirement.	USC
Rational Software Modeler	Tool for UML working	IBM
Microsoft Project	To make baseline of project	Microsoft
Dropbox	Version control	Dropbox
Effort Report	To evaluate effort for each team member	USC
iCard	To identify the identity of team members	USC
MS office	To make report	Microsoft
Adobe reader	To generate pdf files	Adobe
gmail	To communicate with each others	Google
bugzilla	To track defects in project and resolution to them	USC
COCOMOII	To estimate the cost of project	USC
COTIPMO	For project estimation an team assessment	USC
Balsamiq	For prototyping	USC

Resource

The factors may influence the cost of our project are listed as below:

Effort Information;

Project duration: 12 weeks

CSCI577a Effort: 6 team members at 12 hrs/week for 12 weeks

CSCI577b Effort: N/A

Budget information:

It is a non-profit project, so there is no payment to development team. Salesforce provides free version to non-profit organization. However, the clients may need to pay maintain cost in the future, such as salaries for out-source technician.

Programming Language:

APEX: Programming language for Salesforce.

HTML

JavaScript

Modules

Contacts management

Mass mailing

Project tracking

Estimation Tool

COTIPMO, Our project is a NCS project. COCOMO II does not provide any model to estimate the cost of a NCS project. So we use model of our project in COTIPMO. Estimation factors and result are listed in table 8 , table 9 and fig 1.

Table 8: Scale Drivers of COTIPMO

Scale Driver	Value	Rationale
Reuse	0%	We do not have a former system
Developer's Experience and Capability	Nom	Nominal corresponds to the 55 th percentile. Our developers are not experts at developing within and with NDI products, but we do have experience with software development.
Integrated Computer Aided Software Environment Maturity and Capability	Nom	The cloud-based CRM products we are considering using such as Salesforce come with developer Integrated Development Environments and tools for testing developed code.

Table 9: Estimated Application points

NSC details	Value	Rationale
screen	11 simple	There are 11 screens in our project: 1. home page 2. contact list 3. add contact 4. donation list 5. add donation 6. project list 7. add project 8. setup page 9. user list page 10. add user page 11. data export page 12. email template. All of them are well supported by Salesforce and have only 3-4 views. So all of them are considered as simple..
report	4 medium	There are 4 reports in our project: 1. Contacts report 2.donation 3.project 4.user. All of them have about 5-8 sections. So they are considered as medium
3GL	N/A	We do not develop any component in 3GL

Result of COTIPMO

Project Estimates Edit				
Description:	Cloud-Based CRM and Project Tracker			
% Reuse:	0			
Developer's Experience and Capability	NOM			
ICASE Maturity and Capability	NOM			
Productivity (PROD)	13			
New Application Point (NAP)	31			
Person-Months (PM)	2.39 (363 hrs)			
NDI/NCS Details:	Element Type	Simple	Medium	Difficult
	Screens	11		
	Reports		4	
	3GL Components			

Fig 1 screen shot of COTIPMO

In our estimation, we need 2.39 PM to finish the whole project which indicates that our project is feasible in one semester.

Actual effort

Iteration List Add										
	#	Start Date	End Date	Description	% Reuse	PROD	NAP	PM Spent	PM Estimated	Actions
✓	1	10/14/11	10/19/11	Iteration 1	0	13	15	1.15 (175 hrs)	5.77 (877 hrs)	🔧 ✖
✓	2	10/19/11	10/26/11	Iteration 2	0	13	15	1.15 (175 hrs)	2.88 (438 hrs)	🔧 ✖
✓	3	10/26/11	11/2/11	Iteration 3	0	13	27	2.08 (316 hrs)	2.97 (451 hrs)	🔧 ✖
✓	4	11/2/11	11/9/11	Iteration 4	0	13	32	2.46 (374 hrs)	3.28 (499 hrs)	🔧 ✖
✓	5	11/9/11	11/16/11	Iteration 5	0	13	37	2.85 (433 hrs)	2.85 (433 hrs)	🔧 ✖
✓	6	11/16/11	11/23/11	Iteration 6	0	13	37	2.85 (433 hrs)	2.85 (433 hrs)	🔧 ✖
✓	7	11/23/11	11/30/11	Iteration 7	0	13	37	2.85 (433 hrs)	2.85 (433 hrs)	🔧 ✖
✓	8	11/30/11	12/7/11	Iteration 8	0	13	37	2.85 (433 hrs)	2.85 (433 hrs)	🔧 ✖

Fig 2: actual effort

In our development, we actually spent 2.85 PM to finish the whole project. We have exceeded the estimation a little because we developed 17 simple screens. Our project is finished on the iteration 5. The iteration 6, 7, 8 are transition iterations.

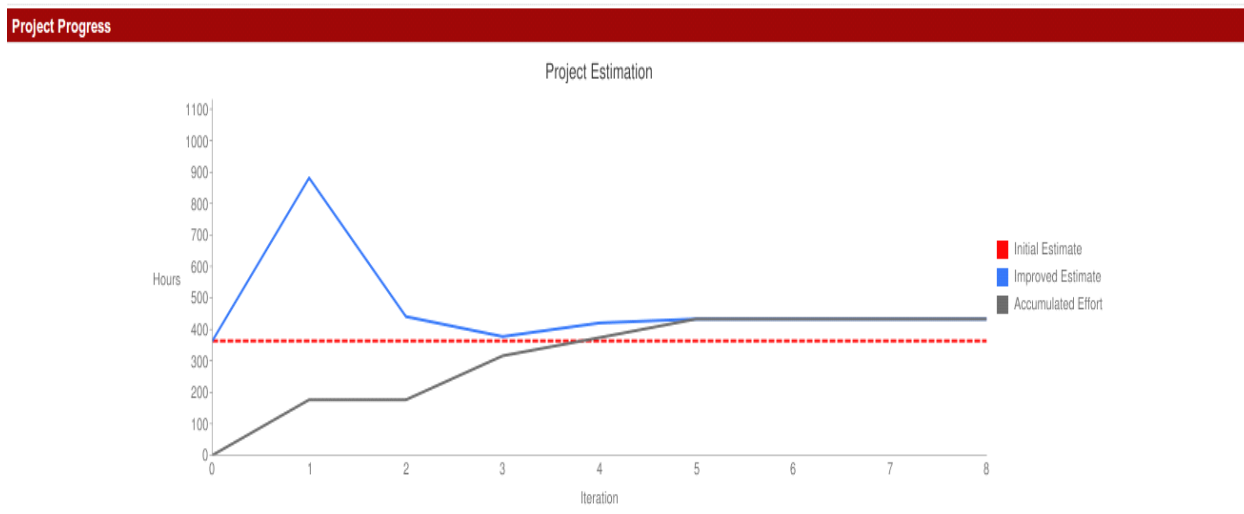


Fig 3 uncertainty cone

Our estimation became clear after the third iteration because most of our development is finished in the first three iterations. The result shows that our initial estimation is a little lower than our actual cost.