Life Cycle Plan (LCP)

<E-lockbox>

<Team 08>

<Team members and roles>

Jian Lei:	**Project Manager/builder**
Mu Bai:	**Requirements Engineer/builder**
HanadiMardah:	**Life Cycle Planner/ UML Modeler**
Xiaochen Wang:	**Operational Concept Engineer/Builder**
Da Lu:	**Prototyper/Software Architect Cheng**
Cheng:	**Feasibility Analyst/ Tester**
Garret Catron:	**IIV&V / Quality Focal Point**

12/07/14

Version History

Date	Author	Version	Changes made	Rationale
09/28/14	HanadiMardah	1.0	First version of LCP	● To fit CS477 Exploration phase
10/13/14	HanadiMardah	2.0	Second Version of LCP	● To fit CS577 Valuation phase
10/20/14	HanadiMardah	2.1	Second Version of LCP with Revise it after FCR ARB	● To fit CS577 Foundation phase and revise mistakes after FCR ARB
11/29/14	Jian Lei	2.2	Add 6.2 iteration assessment	● To fit CS577 Draft Transition Readiness Review
12/07/14	Jian Lei	2.3	Made some small modifications	● To fit CS577 Transition Readiness Review

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1. Introduction

1.1 Purpose of the LCP

The purpose of the LCP is to control and improve the quality and quantity of the project and support client relationship. Also, it is to track project and minimize the risk exposure. Without LCP, we cannot have good estimation of when the project will finish. Moreover, the plan helps us to satisfy our client about delivery requirements since the client wants to know the progress of the project and what will be done when. Follow LCP phase by phase is very useful to be accurate, organized, and trust team from the client.

For the project, the LCP is very good to make project easy to review or track, control, and follow development speed. Also, the LCP is helpful to early discover many risks may occur and fix it, which minimize the risk exposure of project.

For the team, it is the great document for collaborated work and identified team roles and skills.

1.2 Status of the LCP

The status of the LCP is currently at second version 2.2. Operational Capability Description Package OCD version number 1.2. Also Feasibility Evidence Description FED is second version 3.1. The major revises on LCP are :

1. Add Valuation phase-Rebaselined, Development phase and operational phase
2. Add table of Artifact deliverable in Development Phase and operational phase.
3. Assign development software components' responsibilities to team members.
4. Fixed cost estimation, which includes scale drivers and cost factors.

1.3 Assumptions

Schedule: 13 weeks in 2014-fall semester.

Personnel Resource: 7 people participate in project in 2014 fall.

2. Milestones and Products

2.1 Overall Strategy

Exploration phase
Duration: 08/29/14 – 09/24/14
Concept:

1. To know what the client wants and what would be the best tool to achieve the goal.
2. To determine the client's wants and the feasibility of those wants.
3. To determine the best approach to accomplish project goals and the best tools for the job

Deliverables: VC Package
Milestone: Valuation Commitment Review
Strategy: First incremental Commitment Cycle

Valuation phase
Duration: 09/25/14 – 10/13/14
Concept:

1. To identify operational concepts; win conditions, architecture, feasibility evidences, and life-cycle plan.
2. To prioritize the win conditions according to different categories.
3. To create the prototype.
4. Review the current code and detect all defects and bugs.

Deliverables: draft FC Package
Milestone: Foundation Commitment Review
Strategy: First incremental Commitment Cycle

Foundation phase- Rebaselined
Duration: 10/14/14 – 10/20/14
Concept:

1. To identify more clearly operational concepts, win agreements, architecture, feasibility evidences and life cycle.
2. To use appropriate tool and strategies to remove defects, errors, and bugs from code.
3. To implements the security prototype/ product demo.
4. Starts test the security features in the prototype demo.

Deliverables: draft DCP
Milestone: Foundation Commitment Review
Strategy: First increment Commitment Cycle

Foundation phase:
Duration: 10/21/14 – 11/08/14
Concept:

1. Identify more clearly operational concepts; win agreements, architecture, feasibility evidences and life cycle.
2. Apply thestrategies that use to remove defects, errors, and bugs from code.

3. Divide our team into two sub teams: One to review backend code and build new components' functions and features such as security and mass email. Another one to test backend and do frontend code such as interfaces.
4. Create a schedule plan for code meetings that help us to quickly progress in coding.
5. Peer review coding and pair programming two strategies use in development.

Deliverables: NA
Milestone: Development Commitment Review
Strategy: First increment Commitment Cycle

Development phase: Construction Iteration: (concurrent phase)
Duration: 10/17/14 – 11/07/14

Concept:

1. Code, Implement, review, test, and train the project's components.
2. Integrate first developed parts (access control, session timeout, security questions, and login/log out)
3. Integrate second developed parts (user interface, Activity code, and massive email)
4. Test the security and usability functions with client using real data in workplace.

Deliverables: Final Product Archive
Milestone: Operational Commitment Review
Strategy: First increment Commitment Cycle

Development phase: Transition Iteration:
Duration: 11/08/14 – 12/01/14
Concept:

1. Redirect System page into other domains (.org, .com, and .net)
2. Installs/ transits the system, archive final product, release product and obtain client evaluation.

Deliverables: Final DCP
Milestone: Operational Commitment Review
Strategy: First increment Commitment Cycle

Operational Phase:
Duration: 12/02/14 – 12/08/14
Concept:

1- Support clients, users and solve problems.
2- Final test with real data and client or youth.

Deliverables: NA
Milestone: NA
Strategy: Incremental Commitment Cycles (Architected-Agile)

2.2 Project Deliverables

2.2.1 Exploration Phase

Table 1: Artifacts Deliverables in Exploration Phase

Artifact	Due date	Format	Medium
Client Interaction Report	9/19/2014	.doc, .pdf	Soft copy
Program Model & Business Process Model	9/20/2014	Doc, pdf	Soft copy
Valuation Commitment Package ● Operational Concept Description (OCD) Early Section ● Life Cycle Plan (LCP) Early Section ● Feasibility Evidence Description (FED) Early Section	09/28/2014	.doc, .pdf	Soft copy
Project Plan	Every two weeks	.mpp, .pdf	Soft copy
Progress Report	Every two weeks	.xls	Soft copy

2.2.2 Valuation Phase

Table 2: Artifact deliverable in Valuation Phase

Artifact	Due date	Format	Medium
Draft Foundation Commitment Package ·Operational Concept Description (OCD) F1.0 ·Life Cycle Plan (LCP) F2.0 ·Feasibility Evidence Description (FED) F2.0 ·Prototype Repost (PRO) F1.0 ·System and Software Architect Description (SSAD) F1.0	10/13/14	Doc, PDF	Soft copy And Hard copy
Project Effort	Every Tuesday	TEXT	
Project Plan	Bi-Weekly	.mpp	Soft copy
Progress Report	Bi-Weekly	.xls	Soft copy

2.2.3 Rebaselined Valuation Phase

Table 3: Artifact deliverable in Rebaelined Valuation Phase

Artifact	Due date	Format	Medium
Foundation Commitment Package ·Operational Concept Description (OCD) F1.1	10/20/14	Doc, PDF	Soft copy

·Life Cycle Plan (LCP) F2.1 ·Feasibility Evidence Description (FED) F3.0 ·Prototype Repost (PRO) F1.0 ·System and Software Architect Description (SSAD) F2.1			
Project Effort	Every Tuesday	TEXT	
Project Plan	Bi-Weekly	.mpp	Soft copy
Progress Report	Bi-Weekly	.xls	Soft copy

2.2.4 Foundations Phase

Table 4: Artifact deliverable in Foundations Phase

Artifact	Due date	Format	Medium
Development Commitment Package ·Operational Concept Description (OCD) D1.0 ·Life Cycle Plan (LCP) D1.0 ·Feasibility Evidence Description (FED) D1.0 ·Test Plan and Cases D1.0 ·System and Software Architect Description (SSAD) D1.0	12/01/14	.doc, .pdf	soft copy
Project Effort	Every Tuesday	Text	
Project Plan	Bi-weekly	.mpp	Soft copy
Progress Report	Bi-weekly	.xls	Soft copy

2.2.5 Development Phase

Table 6: Artifact deliverable in Development Phase

Artifact	Due date	Format	Medium
<Artifact name>	<Due date>	<Format type: .doc, .pdf>	<Medium type: Hard copy, soft copy>
Draft Transition Readiness Package • Operational Concept Description (OCD) TR1.0 • Life Cycle Plan (LCP) TR1.0 • Feasibility Evidence Description (FED) TR1.0 • Test Plan and Cases (TPC) TR1.0 • System and Software ArchitectDescription(SSAD) TR1.0 • Transition Plan (TP) TR1.0 • User Manual TR1.0 • Training Material	12/01/14	.doc,.pdf	Soft copy
Transition Readiness Package • Operational Concept Description (OCD) TR2.0 • Life Cycle Plan (LCP) TR2.0 • Feasibility Evidence Description (FED) TR2.0 • Test Plan and Cases (TPC) TR2.0 • System and Software ArchitectDescription(SSAD) TR2.0 • Transition Plan (TP) TR2.0 • User Manual TR2.0 • Training Material TR2.0	12/08/14	.doc,.pdf	Soft copy
Project Effort	Every Tuesday	Text	
Project Plan	Bi-Weekly	.mpp	Soft copy
Progress Report	Bi-Weekly	.xls	Soft copy

2.2.6 Operational Phase

Artifact	Due date	Format	Medium
<Artifact name>	<Due date>	<Format type: .doc, .pdf>	<Medium type: Hard copy, soft copy>

User Guideline Manual 1.0	12/12/14	.doc, .pdf	Soft and hard copy

3. Responsibilities

3.1 Project-specific stakeholder's responsibilities

3.2 Responsibilities by Phase

Table 6: Stakeholder's Responsibilities in each phase

Team Member / Role	Primary / Secondary Responsibility				
	Exploration	**Valuation**	**Foundations**	**Development-** Construction Iteration	**Development** - Transition Iteration
Name: the client Role: case manager and Administrator	**Primary Responsibility** ● Provide us with requirements, and win win conditions. ● Provide us with access to current system. **Secondary Responsibility** ● Interact with developers and give feedback ● Attend win win sessions.	**Primary Responsibility** ● Provide with more specific, detailed requirements, and help capture operational concepts. ● Offer feedback for prototype. **Secondary Responsibility** ● Interact with developers.	**Primary Responsibility** ● Provide with feedback for requirements specification, prototype and test cases **Secondary Responsibility** ● Interact with developers	**Primary Responsibility** ● Provide with feedback for developing system, more test cases. **Secondary Responsibility** ● Invite foster youth or (client) to test the system and acquire training	**Primary Responsibility** ● Test the system, give feedback, interact with developers
Name: invited Youth Role: Client in Living Advantage Inc	**NA**	**NA**	**NA**	● Test and trying use the developed components ● Provide feedback and questions	● Test and trying use the developed components ● Provide feedback
Name:Jian Lei Role: **Project manager / Builder**	**Primary Responsibility** ● Provide detailed project plan ● Record project progress biweekly	**Primary Responsibility** ● Provide detailed project plan ● Record project progress	**Primary Responsibility** ● Provide detailed project plan ● Record project progress biweekly	**Primary Responsibility** ● Develop software component (Access control and security question and	**Primary Responsibility** ● Develop software components (access control and security

	Secondary Responsibility • Update meeting report on bugzilla	biweekly **Secondary Responsibility** • Update meeting report on bugzilla	**Secondary Responsibility** • Update meeting report on bugzilla	massive email) **Secondary Responsibility** • Test the system	questions and massive email) • Provide release description **Secondary Responsibility** • Test the system
Name: HanadiMardah Role: **UML modeler and Life cycle planer**	**Primary Responsibility** • Provide the first version of LCP • Provide UML models • Estimate the project plan and schedule. **Secondary Responsibility** • Analyze the proposed system • Identify the responsibilities and skills for team	**Primary Responsibility** • Provide a new version of LCP • Capture the operational concepts. **Secondary Responsibility** • Assess the system architecture. • Assess life cycle concept	**Primary Responsibility** • Provide a new version of LCP • Develop support plan **Secondary Responsibility** • Help developer to understand code • Help team to mitigate any risks	**Primary Responsibility** • Provide a new version of LCP • Build User interfaces **Secondary Responsibility** • Help developers to develop components • Test security components	**Primary Responsibility** • Provide a new version of LCP • Test the security component • Test User interfaces **Secondary Responsibility** • Test the system
Name:MuBai Role:**Requirements Engineer / Builder**	**Primary Responsibility** • Identify Client's Requirements and Business Workflow • Provide Result Chains and Program Model **Secondary Responsibility** • Capture and score the MMF and win conditions	**Primary Responsibility** • Further Identify Clients Requirements and Most Marketable Features • Capture and progress the win win negotiation **Secondary Responsibility** • Figure out Previous work on this project • List All Features Need to be Improved	**Primary Responsibility** • Provide the first Define Interfaces for All Features Need to be Developed **Secondary Responsibility** • Detailed Designed the New System	**Primary Responsibility** • Build the New System component **(Session time out and massive email and login /out)** **Secondary Responsibility** • Test the system	**Primary Responsibility** • Fix Bugs and test the system • Develop the software components (session time out with login/out and Massive email)
Name:**Xiao**	**Primary**	**Primary**	**Primary**	**Primary**	**Primary**

chen Wang Role: **Operational Concept Engineer and Builder**	**Responsibility** • Explore Current System • Identity Operational Concepts **Secondary Responsibility** • Provide the first version of Operational Concept Description (OCD)	**Responsibility** • Identify Objectives, Constraints and Priorities • Identify Organizational and Operational Transformation **Secondary Responsibility** • Identify new Operational Concepts • Provide the second version of Operational Concept Description (OCD)	**Responsibility** • Improve OCD **Secondary Responsibility** • Help other teammates to better understand Operational Concepts	**Responsibility** • Develop the system components (massive email and activity code) **Secondary Responsibility** • Test the system • Develop component (security Questions)	**Responsibility** • Develop the system components (massive email and activity code) **Secondary Responsibility** • Test the system • Develop component (security Questions)
Name: Da Lu Role:**Prototyper/Software Architect**	**Primary Responsibility** • Clarify and assess need/potential benefits • Help to develop initial concept description • Develop a prototype **Secondary Responsibility** • Assess a prototype and components	**Primary Responsibility** • Monitor changes in needs • Develop foundations strategy and plans **Secondary Responsibility** • Analysis of any prototypes	**Primary Responsibility** • Ensure technology readiness for needed capabilities **Secondary Responsibility** • Prototype and evaluate various alternatives	**Primary Responsibility** • Set up development environments • Develop detailed design (massive email and activity code) • Develop software components (login/out and access control) **Secondary Responsibility** • Select hardware, COTS products, and outsource vendors	**Primary Responsibility** • Produce system units • Develop detailed design (massive email and activity code) • Develop software components (login/out and access control) **Secondary Responsibility** • Develop maintenance strategies
Name: Cheng Cheng Role: **Feasibility**	**Primary Responsibility** • Provide Feasibility Evidence for	**Primary Responsibility** • Risk analyze **Secondary Responsibility** • Analyze	**Primary Responsibility** • Provide a prototype and prototype	**Primary Responsibility** • Assess and plan to mitigate risks	**Primary Responsibility** • Test the system • Help

Analyst/ Tester	Architecture Agile project **Secondary Responsibility** ● Provide Process Feasibility Evidence	Business case	analysis **Secondary Responsibility** ● Discover unexpected risks	● Assess feasibility evidence **Secondary Responsibility** ● Test the system	developers in all components
Name: **Garret Catron** Role: **IIV&V and Quality Focal Point**	**Primary Responsibility** ● Ensure Quality and Verify all documents to ensure standards are being met. Track bugs and defects through Bugzilla.	**Primary Responsibility** ● Ensure Quality and Verify all documents to ensure standards are being met. Track bugs and defects through Bugzilla.	**Primary Responsibility** ● Ensure Quality and Verify all documents to ensure standards are being met. Track bugs and defects through Bugzilla.	**Primary Responsibility** ● Ensure Quality and Verify all documents to ensure standards are being met. Track bugs and defects through Bugzilla	**Primary Responsibility** ● Ensure Quality and Verify all documents to ensure standards are being met. Track bugs and defects through Bugzilla.

3.3 **Skills**

Team members	Role	Skills
Jian Lei	**Project manager / Builder**	Relevant Skills ● Experience in HTML, javascript, MySQL, Php programming skills ● Experience in web project Required Skills ● Laravel(PHP framework), Amazon S3(Storage Service)
HanadiMardah	**UML Modeler and LCP**	Known Skills ● Experience to use UML Paradigm ● Some experience of PHP, HTML, and MYSQL ● Good plan for small project. Required Skills ● Define the project requirements, workflow and risks. ● Know how to fix development errors and satisfy requirement.

Mu Bai	**Requirements Engineer Builder**	Relevant Skills: • Experience in HTML, PHP, MySQL programming • Experience in building web projects and applications. • Be familiar with some security strategies implemented on web projects. • Experience in UML modeling Required Skills: • Be familiar with Github, Laravel and Amazon S3 • 2- Fully understand previous work on this project
Xiaochen Wang	**Operational Concept Engineer and Builder**	Relevant Skills • Experience in HTML, javascript, MySQL • Experience in web project Required Skills • PHP programming skills. • Identity the project's operational concepts. • Github, Laravel, and Amazon S3
Da Lu	**Prototyper/Software Architect**	Known Skills: • Experience of Web development Required Skills: • PHP programming skills • Laravel(PHP framework), Amazon S3(Storage Service) and Wercker(Delivery Plateform) • Some knowledge about Internet Security.
Cheng Cheng	**Feasibility Analyst / Tester**	Relenvant Skills: • Some experience of HTML • Know some knowledge about security Required Skills: • PHP,Javascript
Garret Catron	**IIV&V and Quality Focal Point**	Relevant Skills: • Proficiency in php, python,javascript,html • Familiarity with bugzilla, Microsoft Project

4. Approach

4.1 Monitoring and Control

We monitor our progress via several strategies that are :

- After each class we meet together to figure out what should we do in the next step either meeting, report, review, or make appointment with client.
- Each week we have two to three meetings to collaborate solving problems and group assignment, to divide responsibilities and to discuss what is going on.
- We use Shared Google docs and Wechat app to contact together.
- Progress report and Project plan are living documents that we can edit bi-weekly to correct them.
- We also should submit our own effort report in the greenbay system. In addition, we use Bugzilla to record our process and bugs.

4.1.1 Closed Loop Feedback Control

- Wechat mobile app is used to contact, feedback quickly and make meetings.
- Bugzilla and shared Google documents.
- Email is used to follow schedule, and located the place of meetings or presentations.
- Website use to upload all documentations.

4.1.2 Reviews

We have many tools to review our project:

1- Weekly meetings which is on every Tuesday
2- ECR Exploration Commitment Review, which includes the first version of all documents which starts with requirements of the project.
3- VCR Valuation Commitment Review, which includes review and edit all documents and project code before Valuation phase starts.
4- FCR Foundation Commitment Review, which includes second version of all documentation and review project before Foundation phase starts.
5- DCR Development Commitment Review, which includes third version of all documentations and project review before Development phase starts.
6- RDCR
We would use RDCR for potential teammate's loss or change
7- CCD
We would use CCD to determine whether clients would like to add or change operations.
8- TRR
We would use TRR before we transit the system
9- OCR
We would use OCR to show value and quality of the transited system

10- Peer Review
We would use Peer Review to better our own process and find our defects or risks.

4.2 Methods, Tools and Facilities

Tools	Usage	Provider
Amazon S3	Store data (uploading documents) directly from the system	AWS
Laravel	Update each edit in development would be made in local host into alive website on server.	LARAVEL
MySQL	Database management for mac OS X	Sequel Pro&CocoaMySQL Teams.
Phpstorm	Texteditor, Review and edit code	Jetbrains
VISIO	Draw Diagrams for documents	Microsoft
Microsoft project Planner	Create a timer plan of project	Micosoft

5. Resources

Identify the following information in order to estimate the software cost:

- The project already has data storage which is Amazon S3, worked website, databases, and using program language php.
- Even though this project started last year and most of its functions already exist, it still needs to meet new requirements that are given by the client such as security access and mass email. Estimated CSCI577a Effort:7 team members at 8hrs/week for 13 weeks.
- **Total estimated effort**
    - The project already developed from last semester so the rest of the development will be in this semester, which equals to three-four months(12-16 weeks).
- **Budget information**

The Living Advantage has the following tools that have to make annual payments for them:

Domain names = $12 each/year
SSL certification = $149/year
Amazon S3 = $6/year
Hardware VPS hosting (Digital Ocean) = $5/month
Total estimating annual budget = $251

They need maintenance in the future, which would cost as follows:
Maintainer = $35-$40/hour for 10h/month = $4200-$4800
They need to have at least over $4451-$5051/year with maintenance.
Or over $251/ year without maintenance.

- **Project duration**
    - One semester (13 weeks) workingby 7 team members.

- **There are four modules in this system:**
    - Case Management
    - User Management
    - Report Generation
    - Document Management
- All modules will be implemented by PHP programming language.
- We continue to use of PHP framework, laravel.
- We continue to use of Amazon S3 to store vital documents.

The following is module listed in the system and its estimated size with Source Lines of Code (SLOC)

Table 7: Module lists and SLOC of each module – estimation

No	Module Name	Brief description	SLOC		REVL
			New	Adapt	
1	Case Management	Provide case management with foster youth for case manager; track the work flow and record the history for the action	500	1000	4%
2	User Management	Provide different level of authority for different roles; and achieve login, update user information	300	500	4%
3	Report Generation	According to different situation, generate specific report such as demographic, geographic, and activities report.	200	300	4%
4	Document Management	Scan, upload, update documents; store documents securely	200	500	4%

The following is COCOMOII Scale Drivers and rationales of choosing the values.

Table 8: COCOMOII Scale Driver

Scale Driver	**Value**	**Rationale**
<Driver name>	<Value>	<Comments>
PREC	Nominal	This is project is familiar type of system and some of our teammates have developed similar websites. However, the most important feature that will be built and implemented is security which our team do not have more experience about it.
FLEX	Nominal/High	Some requirements are stable, such as tracking workflow, user management, but others are flexible like interfaces.
RESL	Nominal	Key milestones, schedule, responsibilities, and risks are identified. Some of required software architects and tool resolve risks item available.
TEAM	Nominal	The developing team is little cooperating, and the clients also some involved in the project and help developing team acquire more clear requirements.
PMAT	High	The process maturity is CMM Level 3, because the project started last year so it has most of the functionalities already exist.

Table 9: COCOMOII Cost Drivers of Module 1 – Case Management Module

Cost Driver	Value	Retional
RELY	High	The effect of this module is moderate and limited loss.
DATA	Nominal	Because text information, such as username, password would be stored in this module, the number of bytes of data for testing is about 5K and the number of SLOC is 400. The D/P would be 12.5.
DOCU	Nominal	The life cycle will be based on ICSM EPG and we will complete right-size documents for life cycle needs.
CPLX	Nominal	Case Management includes process for tracking action history, and manages cases. High secure input, simple output, and edits.
RUSE	High	Project is across program which means it could apply to use across multiple function applications for single organization.
TIME	Nominal	The system should be available from 9 am to 5 pm on weekday. The percentage of available execution time expected is to be used by the system is less than 50 %.
STOR	Nominal	The percentage of available storage is expected to be used by the system is less than 50% because only text, basic information would be stored.
PVOL	Low	The major hardware will change at most once a year
ACAP	Nominal	The analysts can work on requirements, design, and cooperate with others moderately.
PCAP	Nominal	Some developers are familiar with PHP, but others do not. Therefore, capability for whole team is moderate.
PCON	VHigh	We have 7 team members in 577a that all of them are working in this semester on project so the continuity is very High.
APEX	Low	The average experience of the team members for this type of system is about 4-6 months.
LTEX	Low	Majority of teammates have used HTML, and MySQL at least one year but most of them have low experience with php.
PLEX	Nominal	Majority of teammates have used MySQL, web server Apache Tomcat with JDK at least one year.
TOOL	Nominal	Use basic software such as Microsoft project plan, winbook, bugzilla to control the life cycle.

SITE	High	6 of 7 teammates are on-campus students.
SCED	Nominal	The schedule is fixed for 13 weeks a year.

Table 10: COCOMOII Cost Drivers of Module 2 – User Management Module

Cost Driver	Value	Retional
RELY	High	The effect of this module is moderate and limited loss.
DATA	Nominal	Because only some text information would be stored in this module, the number of bytes of data for testing is about 3KB and the number of SLOC is 200. The D/P would be 15.
DOCU	Nominal	The life cycle will be based on ICSM EPG and we will complete right-size documents for life cycle needs.
CPLX	Nominal	Use some basic math or statistical operations for demographic analysis. Simple file output and simple edits.
RUSE	High	Project is across program which means it could apply to use across multiple function applications for single organization.
TIME	Nominal	The system should be available from 9 am to 5 pm on weekday. The percentage of available execution time expected to be used by the system is less than 50 %.
STOR	Nominal	The percentage of available storage expected to be used by the system is less than 50% because only text, basic information would be stored.
PVOL	Low	The major hardware will change at most once a year
ACAP	Nominal	The analysts can work on requirements, design, and cooperate with others moderately.
PCAP	Nominal	Some developers are familiar with PHP, but others do not. Therefore, capability for whole team is moderate.
PCON	VHigh	We have 7 team members in 577a that all of them are working in this semester on project so the continuity is very High.
APEX	Low	The average experience of the team members for this type of system is about six months.

LTEX	Low	Majority of teammates have used HTML, and MySQL at least one year but most of them have low experience of php.
PLEX	Nominal	Majority of teammates have used MySQL, web server Apache Tomcat with JDK at least one year.
TOOL	Nominal	Use basic software such as Microsoft project plan, winbook, bugzilla to control the life-cycle.
SITE	High	6 of 7 teammates are on-campus students.
SCED	Nominal	The schedule is fixed for 13 weeks a year.

Table 11: COCOMOII Cost Drivers of Module 3 – Report Generation Module

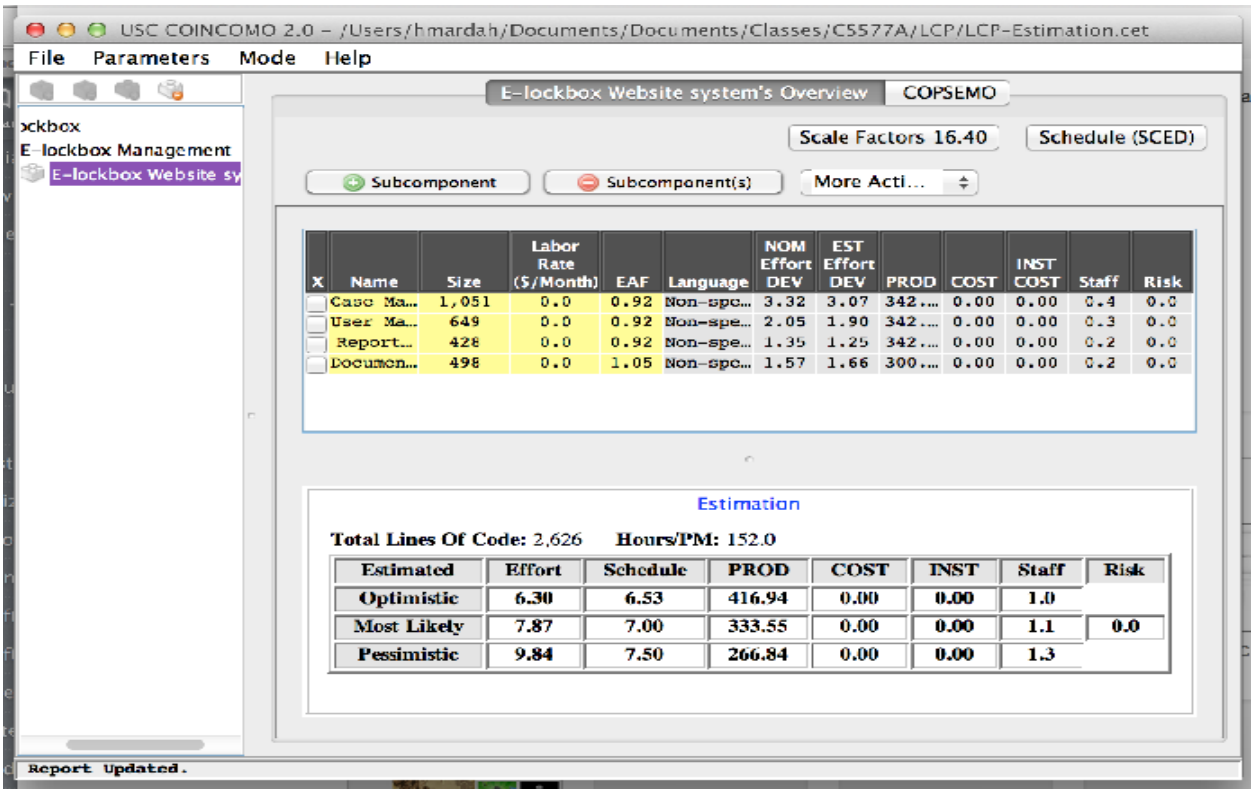
Cost Driver	Value	Retional
RELY	High	The effect of this module is moderate and limited loss.
DATA	Nominal	Because text information, such as username, password would be stored in this module, the number of bytes of data for testing is about 4K and the number of SLOC is 200. The D/P would be 20.
DOCU	Nominal	The life cycle will be based on ICSM EPG and we will complete right-size documents for life cycle needs.
CPLX	Nominal	Case Management includes process for tracking action history, and manages cases. High secure input, simple output, and edits.
RUSE	High	Project is across program which means it could apply to use across multiple function applications for single organization.
TIME	Nominal	The system should be available from 9 am to 5 pm on weekday. The percentage of available execution time expected is to be used by the system is less than 50 %.
STOR	Nominal	The percentage of available storage is expected to be used by the system is less than 50% because only text, basic information would be stored.

PVOL	Low	The major hardware will change at most once a year
ACAP	Nominal	The analysts can work on requirements, design, and cooperate with others moderately.
PCAP	Nominal	Some developers are familiar with PHP, but others do not. Therefore, capability for whole team is moderate.
PCON	VHigh	We have 7 team members in 577a that all of them are working in this semester on project so the continuity is very High.
APEX	Low	The average experience of the team members for this type of system is about 4-6 months.
LTEX	Low	Majority of teammates have used HTML, and MySQL at least one year but most of them have low experience with php.
PLEX	Nominal	Majority of teammates have used MySQL, web server Apache Tomcat with JDK at least one year.
TOOL	Nominal	Use basic software such as Microsoft project plan, winbook, bugzilla to control the life cycle.
SITE	High	6 of 7 teammates are on-campus students.
SCED	Nominal	The schedule is fixed for 13 weeks a year.

Table 12: COCOMOII Cost Drivers of Module 4 – Documentation Module

Cost Driver	Value	Rationale
RELY	High	The private documents including driver license, SSN, should be stored securely. If it fails, some vital information would be leaked.
DATA	High	Because text information, such as case id, name, would be stored in this module, the number of bytes of data for testing is about 0.1M and the number of SLOC is 600. The D/P would be 166.67.
DOCU	Nominal	The life cycle will be based on ICSM EPG and we will complete right-size documents for life cycle needs.

CPLX	Nominal	Case Management includes process for tracking action history, and manages cases. Simple input, output, and edits.
RUSE	High	Project is across program which means it could apply to use across multiple function applications for single organization
TIME	Nominal	The system should be available from 9 am to 5 pm on weekday. The percentage of available execution time expected to be used by the system is less than 50 %.
STOR	Nominal	The percentage of available storage expected to be used by the system is less than 50% because only text, basic information would be stored.
PVOL	Low	The major hardware will change at most once a year
ACAP	Nominal	The analysts can work on requirements, design, and cooperate with others moderately.
PCAP	Nominal	Some developers are familiar with PHP, but others do not. Therefore, capability for whole team is moderate.
PCON	VHigh	We have 7 team members in 577a thatall of them are working in this semester on project so the continuity is very High.
APEX	Low	The average experience of the team members for this type of system is about six months.
LTEX	Low	Majority of teammates have used HTML, and MySQL at least one year but most of them have little experience of php.
PLEX	Nominal	Majority of teammates have used MySQL, web server Apache Tomcat with JDK at least one year.
TOOL	Nominal	Use basic software such as Microsoft project plan, winbook, bugzilla to control the life cycle.
SITE	High	6 of 7 teammates are on-campus students.
SCED	Nominal	The schedule is fixed for 13 weeks a year.



6. Iteration Plan

6.1 Plan

There are two iterations in the construction phase. The first iteration is core capability which is security features including access control, security questions, session time out, and login log out. The second one is for new features include mass email, youth user interface, and activity code.

In the first iteration we have to meet and review existing code and add new features code, After the Core Capability Iteration, implement team and clients would check and record the accomplishments and move on to our second iteration. At the same time, they would also test the

core capability and make use of it as the input for the next iteration. After the Core Capability Iteration, there is a milestone, CCD and after the second Iteration, there would be a milestone, TRR.

Iteration 1 – Security Features: From 10/17/2014 to 11/07/2014 CCD: 11/07/2014
Iteration 2 – new Features: From 11/07/2014 to 12/01/2014 TRR: 12/01/2014

6.1.1 Capabilities to be implemented

Table 5: Construction iteration capabilities to be implemented

ID	Capability	Description	Priority	Iteration
< ID >	< Capability >	<comments>	<value>	<value>
1	LOS-3:Security	All the documents must be stored securely. The security specification should include login-control, system-access-control, security questions documents-storage and so on.	Must have	1
2	OC-2:Case Management	Administrator can manager all cases. Case managers can manage cases in their scope. Assistants can view all cases, but cannot edit anything.	Must have	1
3	OC-4:User Management:	Administrators will be able to manage all kinds of users. Case manager can manager the users in their scope.	Must have	1
4	OC-5:Mass Email:	Administrators and case managers can send mass e-mails to youth. And system can automatically record such activity.	Should have	1

6.1.2 Capabilities to be tested

Table 14: Construction iteration capabilities to be tested

ID	Capability	Description	Priority	Iteration
< ID >	< Capability >	<comments>	<value>	<value>
1	OC-1 Document	Vital documents can be 1) Viewed and printed via accessing the system by foster youth and	Must have	2

	Management	assistants or 2) Scanned and uploaded by case managers or administrators.		
2	LOS-2: Data Size	This system should support large data. [Currently, the Living Advantage has 353 kids, each kid has at most 7 documents stored on e-Lockbox system, and each document is about 1MB, thus the total storage is around 2.5GB. Since Living Advantage predicts to have more foster youth in the future, they prefer to limit the storage capabilityforeach case to be no more 15 documents. Suppose each document can be no more than 3MB, and there are 1000 kids, the total expected storage for documents will be no more than 44GB. Plus the storage for administrative activities, the total storage should be around 50GB.]	Must have	2
3	LOS-1: Usability	The system shall be easy to use for kids and case managers.The usability can be tested by questionnaire and actual operation.	Must have	2
4	OC-3 Report Generation	The system is capable of generating the report of demographic and activity information	Must have	2

6.1.3 Capabilities not to be tested

Every capability needs either to be constructed or to be tested, so there are no capabilities not to be tested.

6.1.4 CCD Preparation Plans

The stakeholders who will be involved in our Core Capability Drive-through are:

1. Client: Living Advantage
2. Development Team: USC 577a 2014 Fall team 8
3. Mentor: USC 577a 2014 Fall Professor and TAs

CCD Preparation Plan:

- Before the CCD:
  a. Developer Preparation
     1. Functional system
     2. Presentation
     3. Template for report
     4. Prepare draft User Manual

  b. Client Preparation
     1. Contact with clients and make appointment
     2. Prepare for user scenarios for CCD

- During the CCD
  a. Present our system with core capability, especially, the security part of e-lockbox
  b. Let clients test the security part of our system and try to use our system and get feedback
  c. Discuss about acceptance test
  d. Discuss about Clients' expectation of system and transition
  e. Discuss about risk management

- After the CCD
  a. Improve system according to clients' feedback
  b. Write CCD report
  c. Revise User Manual
  d. Revise acceptance test plan

6.2 Iteration Assessment

6.2.1 Capabilities Implemented, Tested, and Results

Table 15: Capabilities implemented, tested, and results

ID	Capability	Test Case	Test Results	If fail, why?
< ID >	< Capability >	< TC-XX >	Pass/Fail	<comments>
3	OC-1:Document Management	TC-01-01 TC-01-02 TC-01-03	Pass	
2	OC-2: Case Management	TC-02-07	Pass	
3	LOS-3:Security	TC-06-01 TC-06-02 TC-04-02	TC-06-03 Fail	Email varification code feature works well locally, However the system fails to send email on real server(demo.mylaspace.com)

4	OC-5:Mass Email	TC-05-01 TC-05-02 TC-05-03	Pass	

6.2.2 Core Capabilities Drive-Through Results

Capability	Positive feedbacks	Improvements	Changes	Risk
TC-01-01 Uploadadocument				
TC-01-02 Printadocument				
TC-01-03Deleteadocument		Not finished		
TC-01-04 Edit a document			The file uploaded should be edited	
TC-02-07 Create Activity code				
TC-06-01 Security question		The user should answer security question before viewing document		
TC-06-02 Access Control				
TC-04-02 Login				Email varification code feature works well locally, However the system fails to send email on real server(demo.mylaspace.com)
TC-05-01 Create Email Group				
TC-05-02				

Send mass email				
TC-05-03 Create email Template		This feature would be better to include attachment in the template		

6.3 Adherence to Plan

We have finished all capabilities in our system and got positive feedbacks from clients. However, there are still some small bugs in the system that our clients want us to fix before using the system. We would try to fix those bugs. We have finished training and will finish transition before 12/12.